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Cultivation of the Intellect in Education:
The Role of Cultural Lenses

A dissertation submitted in partial satisfaction of the
requirements for the degree Doctor of Philosophy
in Education

by

Arif Amlani

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ABSTRACT OF THE DISSERTATION

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Doctor of Philosophy in Education

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Professor Michael H. Seltzer, Co-Chair

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The intellect is beset with numerous problems and shortcomings some of which have been historically noted by Plato, Bacon, Locke and others. A particularly challenging problem in reasoning, is the problem of (colored) 'lenses' whose source is culture, broadly construed. While the vital role of culture in reasoning may have been alluded to by philosophers, it has not been closely analyzed or theorized. Through two empirical case studies drawn from the field of educational anthropology, I demonstrate how cultural lenses block reasoning altogether or severely constrain it. This poses a particular challenge for the cultivation of the intellect in education—a goal universally advocated by historical and contemporary philosophers of education.

Current educational programs aiming towards the cultivation of the intellect, namely, through critical thinking and through an initiation into the disciplines, while they have their merits in helping students think more effectively, are *insufficient* in helping students to overcome the barrier of lenses (as theorized herein). And they fail because current educational programs focus on argument identification and evaluation. But problems of reason are not limited to problems of argument and reason is not limited to argument evaluation. Hence, what is required is a philosophy of education for the full cultivation of the intellect based on a broader conception of reason; a conception of reason which I demonstrate through empirical case studies.

To achieve the goal of the fuller cultivation of the intellect in education, I indicate a pedagogical direction for a possible educational program. I also recommend a focused research program in (i) the philosophical study of reason in a broader sense than just evaluation of arguments, (ii) a multidisciplinary study of various problems facing reason and (iii) an empirical study of educational methods for overcoming problems of reason. The implications of the present work are not just limited to students' reasonings but have relevance to teachers' and policy makers' reasonings and indeed to the reasonings of philosophers of education as well.

The dissertation of Arif Amlani is approved.

Mike A. Rose

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To my late parents, Doulatkhanu Amlani and Rajabali Amlani

for their love and infinite patience.

It's no easy task—indeed it's very difficult—to realize that in every soul there is an instrument that is purified and rekindled by such subjects [e.g. arithmetic, geometry] when it has been blinded and destroyed by other ways of life, an instrument that it is more important to preserve than ten thousand eyes, since only with it can the truth be seen.

Plato, *The Republic*

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It's been a long journey and were it not for many, I would not be here. Several years ago, in my second year at UCLA, Professor Mike Seltzer took me on as an advisee when my former advisor took on another position at a different university. But little did I know that this relationship would span many, many years and would lead to fruitful collaborations and a deepened, enviable friendship—one continued and cemented at Lulu's coffee house in West Los Angeles on Saturdays. So much emerged out of these stimulating meetings. Without his mentorship, unwavering support and constant encouragement this dissertation would not have seen the light of day. When I was in doubt, he was sure. I am most, most grateful—more than words can express.

I owe an immense debt of gratitude to my co-chair, Professor Theodore Porter, with whom I took several seminars all of which singularly thought provoking and touching on issues of reason, rationality and objectivity. At the time of my research, the social studies of science were ripe with debates on the critique of reason and evoked an air of excitement and fresh, irreverent thinking. I am grateful to Professor Porter for initiating me into this world and for his close guidance on the construction of the proposal. Needless to say, I am immensely thankful that he continued his support and guidance through to the dissertation.

I am also especially grateful to Professor Mike Rose who was on my original committee and saw the dissertation all the way to completion. Professor Rose, from as long as I can remember, and in so many different ways, placed enormous confidence in my work—dissertation and other work. Unbeknownst to him, and though undeserved, this confidence propelled me to try and live up to the honor.

My first exposure to deeper issues in social scientific explanations came through a unique seminar designed and taught by Professor Blurton-Jones and Professor David Ericson. Enthused and inspired by the course, I volunteered to be a TA the next time it was taught. More for my sake, Professor Blurton-Jones graciously accepted. The ideas and readings from the course are still alive in my mind today and indeed formed part of the readings for a new course that I have had the privilege to design with Professor Seltzer. I am most grateful to Professor Blurton-Jones for the opportunity and the inspiration early in my graduate days and for being on my committee and seeing it through to completion.

For my initial proposal, I am grateful to Professor Linda Garro who graciously accepted to be on the original committee. As a way of researching issues on reason in the social sciences, I took classes in anthropology, one of which was her seminar on psycho-cultural anthropology. The readings in the course were instrumental in shaping the tenor of the proposal. While my further research into the topic in succeeding years took me in a different, I am very grateful for her early mentorship. I also want to thank Professor David Wilson, formerly of the Department of Philosophy at UCLA, who was also part of the initial committee for the many hours he made available to me from his busy schedule. I also want to thank Professor Alan Fiske and Professor Mariko Tamanoi of the Department of Anthropology, Professor John Heritage of the Department of Sociology and Professor Keith Holyoak of the Department of Psychology and Professor George F. Kneller for their seminars all of which have shaped my thinking on issues of reason and rationality.

I am greatly indebted to Professor John McNeil of UCLA for guidance and insight into the historical foundations of a thinking curriculum. His expert advice

quickly led me to seminal thinkers and movements in twentieth century curricular thought. This background served as essential context for the later philosophers of education treated in the dissertation. Equally impactful has been his energy, endless enthusiasm and his conviction in my project. I could not have asked for a better advocate now and for so many years.

I have had the singular pleasure of attending seminars by Professor Denis Phillips and Professor Nel Noddings at the Graduate School of Education at Stanford as a visiting graduate student. Under their leadership, at the time, Stanford had a thriving, world-class philosophy of education program. It was during this stay, while attending seminars and conversing with like-minded colleagues, that I knew I had a grounding in philosophy of education. With Professor Philips' and Professor Noddings' support, Stanford also held yearly meetings of the California Association of Philosophers of Education (CAPE). I am thankful to CAPE attendees for their support, good cheer and insightful comments during conference meetings. At Stanford, I was also able to audit Professor Geoffrey Cox's unique seminar on 'Cognition and Rationality.' So much of what I learned during my stay at Stanford has stayed with me and some of it helped shaped my proposal. I am grateful to all three professors for inviting me into their circle and for their generous counsel during and after my visit.

My philosophy of education journey had started many years earlier when I was a young man studying in London. It was at the Institute of Education (IOE), University of London in small, but warm seminar rooms that I was introduced to the aims of education, ethics and education, and epistemology and education. I still vividly remember Professor John White's seminars held in his office, on cold winter mornings, around a circle of chairs with coffee and biscuits. Every Tuesday and Thursday I would

leave his seminars with a large grin from an intellectual high. Each week, new worlds of philosophy of education unfolded for me. Decades later, I had the good fortune of being able to meet with Professor White again in London. This time it was my privilege to provide the coffee. Our conversation continued where we had left off. I am most grateful to him for opening up new horizons—horizons which have now become part of my own my quest and career and for his continued support and advice.

From London my journey continued to the University of Birmingham, England. At the Faculty of Education, I had the privilege of studying with one of the early pillars of philosophy of education in Britain, Professor Robert Dearden, colleague of Paul Hirst and Richard Peters and co-editor of the seminal and enormously influential, *Education and the Development of Reason*. As is well known, their work defined analytical philosophy of education for decades to come. My education in philosophy of education deepened at Birmingham. My advisor, Professor Lloyd introduced me to Wittgenstein whose philosophy dominated much of the discourse of the day. He recommended I read Peter Winch's then influential *The Idea of a Social Science,* a Wittgensteinian inspired essay on a critique of Durkheimian type, generalized explanations in the social sciences in favor of explanations specific to 'language games' and defined by them. This work led me to Alasdair MacIntyre's critique of Winch's seemingly relativistic tones with respect to rationality of social action and social actors. I was engrossed and followed the trail. The debate led me to wider works in philosophy related to questions of rationality, relativism, 'primitive' mentalities and to works in philosophy of science, most particularly, Popper's, Kuhn's and Lakatos.' These were formative years. So much of what I learned was to resurface later in my research and in my teaching. I am thankful to have had such illustrious teachers.

Returning to the States after my early studies in the UK, I joined the Graduate School of Education and Information Studies (GSE&IS) at UCLA. From early on it was the question of reason and education that interested me the most. It was during this early period that I took Dr. Lois Weinberg's seminar on epistemology and education where she introduced us to the thriving critical thinking movement well underway at the time. In my final paper, I registered an uneasiness about critical thinking as it was defined and theorized at the time. She recommended that I polish the paper for publication. I am most grateful to Dr. Weinberg for this early confidence and for exposure to the field. But though I sensed a weakness in critical thinking and felt there had to be more to reason and education than was being offered, I did not know what that something more was. I shelved the paper.

This led me to my search in the field of reason and rationality. I began to take seminars outside of education and began to read voraciously. At the time, questions surrounding reason and its critique were center stage in the social sciences. I addition to all my required courses in education, I took courses in history, anthropology, sociology and psychology and audited more courses in these and other departments all with a view towards a better understanding of reason. I was deeply immersed in this literature. Past readings resurfaced with new interpretations. But though immersed, and at times, perhaps even well versed, I could not find my way through to my original interest, reason and education. The 'something more' still eluded me.

It was in the midst of this search, with no end in sight, that I mentioned my interest in rationality and indeed my paralysis (which I felt often) to my friend Mansour Morteza, philosopher and musician, during my visits to London. In my ambivalence and uncertainly, he encouraged me to stick with a question surrounding the role of

reason in education. He also impressed upon me the virtue of investigating problems of reason. Furthermore, through his generosity of spirit, no less utter generosity of time, he shared with me his own thinking and formative manuscript on the philosophy of reason. Conversations continued long-distance. Many years later, when I returned to London for a professional appointment, intense discussions on reason continued. These were wonderful days spent conversing and discussing the most intricate aspects of reason and its real application to education—these too on Saturday afternoons but at his home and in London's great parks over long walks. I am grateful to Assunta, his wife and Elaheh, his daughter, for welcoming me into their home and for tolerating a good dose of philosophy each week.

In light of Mansour's work, much of what I had read over many years found a neat place. Instead of confusion and contradictions in my mind from all the learnings in the various disciplines on reason, I found a comprehensive schema in which to organize and make sense of these notions. The relevance of his work to my original interest emerged in the course of yet more intensive discussions of late, after my return to UCLA. The 'something more' in reason and education became clear. I am so very grateful to him for his mentorship and his whole hearted commitment to assisting me in my search. I am equally grateful to him for affording me the rare opportunity of applying fresh ideas from a thinker's manuscript to a dissertation. I consider myself a very privileged graduate student. His influence looms large in my doctoral work, more than citations and footnotes could ever capture.

Finally, I owe special thanks to Professor Harvey Siegel. After my forays in the social sciences, I returned to philosophy of education and consulted with a number of professors on key problems with respect to reason and education. They all pointed me

to Professor Siegel who very kindly spent time with me on two different occasions going over contemporary issues in the area of reason and education. He suggested a number of avenues of research in the area including issues in critical thinking. Once I decided on critical thinking he was very gracious in providing me a comprehensive reading list. I am grateful to him for his time and expertise. I am also grateful to Professor David Ericson, my former advisor, Professor Nick Burbules and Professor Emily Robertson for suggestions on pertinent issues in the area of reason and education.

As is well known to all graduate students, without a steady, part-time income, it's difficult to survive through to the end. More than anyone, Dr. Peter Kovaric of the Educational Technology Unit (ETU) at GSE&IS, made it possible for me to survive quarter after quarter. Though technological work got done, Peter created an atmosphere where it never really felt like work. And his interest in philosophy added to the pleasure of conversations. I am so grateful for the many years at ETU. After ETU, with his recommendation, I had the wonderful opportunity to work for the University Elementary School (UES) at UCLA providing technical support to students, staff and faculty members. Dr. Sharon Sutton, the Director of Technology at UES, like Peter, made it amazingly fulfilling. UES became my second home and I am so thankful to Sharon and all the staff and faculty at UES for making my stay there so rewarding and enriching.

I have been very fortunate to have had unique teaching opportunities at UCLA at the undergraduate and graduate levels. One very special course had its origins at Lulu's coffee house in the midst of wonderful conversations with Professor Mike Seltzer who had always had the ambition of bringing 'rigor' to research methods training. Over the course of two years, we brought our interests and backgrounds together and designed a

graduate course on deeper issues and problems in social scientific research—cognitive, sociological, anthropological, and philosophical—issues and problems beyond the mechanics of social research and which are not often dealt with in methods courses. One of my fondest memories at UCLA is co-teaching this course with Mike with exhilarating feedback from students. Also during my stay at UCLA, the Department of Education began to offer a minor in education. I am grateful to Professor Kris Gutierrez for inviting me to teach two different courses over the period of several quarters.

Returning to UCLA after my appointment in London, I was immediately offered a TAship by my then colleague and friend and now continuing lecturer, Dr. Steve Peterson in the Department of Communication Studies. I could not have dreamt up a more perfect situation. I learned a great deal TAing and grading for him yet, at the same time, he made sure I had time for the dissertation. I cannot thank him enough for this unexpected opportunity. For downtime, Steve who suggested I go to a *real* resort, Mammoth. I have never looked back. No mention of the Department of Communication Studies can be made without the vibrant, charismatic and ever so generous manager, Jane Bitar. Working for the department and thanks to Jane, working and writing *in* the department, in the wonderful spaces she created and provided was an experience I will never forget and will always cherish. Together with Jane, Pia and Sylvia, I felt so very welcomed each quarter—an honored guest every day.

I am grateful to Jaye Darby for all her encouragement and support over many years. and for many stimulating conversations on so many topics. I did not know I could write until she pointed it out. I also want to thank Professor Joanne Snow Smith for her warmth, generosity and contagious enthusiasm for Plato and all things Neoplatonic. I am thankful to my friends Alnoor Dhanani and Nadia Eboo Jamal for

numerous (humorous) exchanges, and their endearing support and encouragement through many years.

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During the winter months, I would often take-off to Mammoth and June Mountain ski resorts for pleasure but also to write. Some of my clearest thinking occurred during the early mornings in the warm lodges hunched over wooden tables that I had often appropriated as my desk, some of it on the way up on the ski lifts and some of it during my forays into the forest. I am most appreciative of Mammoth's, June's and the Inyo National Forest's hospitality.

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Introduction

One of the most important, perennial questions facing education is the cultivation of the intellect. In this dissertation, I identify one major barrier in reasoning, show the limitations of current educational programs in overcoming it and chart a research direction forward for the fuller cultivation of the intellect in education. In Chapter 1, I present numerous problems of reason through the eyes of philosophers of education and philosophers more generally. Here, I show that though we might be rational creatures there are numerous problems with the intellect many of which have been noted by philosophers. I start with problems noted by twentieth century philosophers of education beginning with John Dewey then present problems noted by Plato, Bacon and Locke. These problems are barriers and impediments in reasoning and for achieving rationality. At the same time, philosophers over the ages and contemporary philosophers of education, for the most part, are united in suggesting that the cultivation of reason and rationality should be an aim of education. I present this consensus from Plato till the present.

In Chapter 2, I present and critically analyze three contemporary and influential programs for the cultivation of the intellect in education, namely: i. through critical thinking as proposed by Paul Ennis, ii) through 'fair-minded' critical thinking as proposed by Richard Paul and iii) through an initiation into the disciplines as proposed by Israel Scheffler and others. In this chapter, I present their goals for the cultivation of the intellect and their suggested educational programs for achieving them. I then critically review these programs for their *sufficiency* in achieving the overall goal of the cultivation of the intellect in education. Each program has its merits. However, on the

basis of a broader view of reason argued by Morteza, I show how they all share a much too narrow conception of reason—one tied to evaluation of argument, reasons and principles. Also on the basis of this broader view, I show how problems of reason are not limited to problems of argument evaluation. Some (major) problems are to be found in the *reasoner* (which are distinct from problems of argument) many of which are intractable and not overcome by exercises in argument identification and evaluation. One such is the problem of colored "lenses" that one wears.

In Chapter 3, through a comparative study of education in different cultures, I demonstrate this problem of colored lenses in the reasoner while exemplifying the broader view of reason. Though the vital role of culture in reasoning may have been alluded to by philosophers, it has not been closely analyzed or theorized. I show how cultural lenses in the form of values and beliefs, acquired through upbringing and acculturation, though opening vistas, may, at-times, block reasoning altogether or severely limit it. I demonstrate this through a discussion and analysis of two empirical case studies drawn from the field of educational anthropology. I begin with an exploration of the lenses of "effort" vs. lenses of "ability" and reasoning or its lack of based on these lenses in the context of discussions of achievement in mathematics in the US, China and Japan as presented in the work of Stevenson and Stigler.

For my second case study, I explore various culturally based lenses and their effect on reasonings on preschool ideals and practices in Japan, US and China as documented in Tobin et al.'s *Preschool in Three Cultures*. Here, I explore, for example, reasonings and lenses surrounding causes of misbehavior in a classroom, fighting in young children, notions of ideal class size and notions regarding aims of preschools. These lenses, I argue, while they highlight certain elements, also influence, constrain

and limit reasoning. Current educational programs aiming towards the cultivation of reason and rationality (through critical thinking skills and through the disciplines), while they have their merits in helping students think more effectively, are *insufficient* in helping students to overcome the barrier of lenses as described above. And they fail because current educational programs focus on argument evaluation. Hence, what is required, I argue, is a more adequate program for the cultivation of reason in education— one that also enables students to transcend the sometimes negative interferences of colored lenses on their reasoning so that their own reasonings can flourish and where this program is undergirded by a philosophy of education that embraces a broader view of reason and its uses.

To achieve this goal of a more adequate program for the cultivation of the intellect in education, in the last chapter of the dissertation, I recommend a multi-front research agenda in i) the philosophical study of reason in a broader sense than just evaluation of arguments, ii) a multidisciplinary study of various problems facing reason, and iii) an empirical study of educational methods for overcoming problems of reason. The implications of the present work with respect to its analysis and recommendations are not limited to students' reasonings. The problem of lenses also affects teachers and educational policy makers as their reasonings surrounding their teaching and policy making can often be under the grips of colored lenses. At their most influential level, lenses affect entire philosophies of education, which are often promoted not from a place of careful consideration and rationalization but from tradition and cultural affinities but which determine the course of the education of entire nations. The remedy lies in the cultivation of the intellect in education based on a broader view of reason.

Chapter 1

Problems of the Intellect, Goals for the Intellect in Education

In this chapter, I enquire into and present possible problems of the intellect such that an education of the intellect becomes necessary. I begin this inquiry through the eyes of philosophers of education, starting with John Dewey, the first philosopher of education of the modern era in the Western world, and continue with contemporary philosophers of education. Then, noting that historical philosophers have also documented numerous problems of the intellect, I present these as they are found in Plato, Francis Bacon and John Locke.

In tandem with perceived problems of the intellect, there has been and continues to be consensus in philosophy and philosophy of education that the cultivation of the intellect should form a major goal of education. I present this consensus in the next section of the chapter. In the last section, I highlight an observation made in the course of my inquiry into problems of the intellect and goals for education namely, that philosophers over the centuries have presented multiple, divergent and sometimes contradictory conceptions of reason, rationality and the intellect. This poses a potential problem in philosophy of education in that *very different things are said to be cultivated* in calls for the cultivation of reason and rationality in education—a situation which calls for a fresh philosophical study of reason in its own right.

Problems of the intellect

Though the intellect is prized, its landscape is uneven filled with rifts, cracks and dark valleys. Philosophers of education, over the years, have commented on this

uneven and rocky landscape. John Dewey, in his *How We Think*, acutely noted several endemic problems in human thinking and reasoning.[1] On the one hand, Dewey remarks that the power of thought "frees us from servile subjection to instinct, appetite, and routine." On the other hand, this same power brings with it possibilities of "error and mistake." In raising us above the brute, Dewey continues, "it opens the possibilities of failures to which the animal, limited to instinct, cannot sink." Up to a certain limit, natural and social conditions enforce a certain discipline of thought: "The burnt child dreads the fire; a painful consequence emphasizes the need of correct inference much more than would learned discourses on the properties of heat. Social conditions also put a premium on correct inference in matters where action based on valid thought is socially important." However, "[w]hen there is no direct appreciable reaction of the inference upon the security and prosperity of life, there are no natural checks to the acceptance of wrong beliefs." Hence "[c]onclusions may be accepted merely because the suggestions are vivid and interesting, while a large accumulation of dependable data may fail to suggest a proper conclusion because of opposition from existing customs."

Additionally, as human beings, we are beset with a "'primitive credulity,' a natural tendency to believe anything that is suggested unless there is overpowering evidence to the contrary." [2] The history of science shows that when a wrong theory gets

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[1] John Dewey, *How We Think: A Restatement of the Relation of Reflective Thinking to the Educative Process* (Chicago: Henry Regnery Company, 1933).

[2] We seem to have this 'primitive credulity' it seems, because in Dewey's model, superstition is as natural as science:

> As to the mere function of suggestion, there is no difference between the power of a column of mercury to portent rain and that of the entrails of an animal or the flight of birds to foretell the fortunes of war. For all anybody can tell in advance, the spilling of salt is as likely to import bad luck as the bite of the mosquito to import malaria. Only systematic regulation of the conditions under which observations are made and severe discipline of the habits of entertaining suggestions can

established, such as the Ptolemaic theory of the solar system, for example, "men will expend ingenuity of thought in buttressing it with additional errors rather than surrender it and start in a new direction."[3]

Dewey also looks to the history of philosophy in documenting problems in thinking. He briefly mentions, for example, Francis Bacon's 'idols' which allure the mind into false paths: *idols of the tribe* which have their source in human nature, *idols of the market place* which come from social intercourse and language, *idols of the cave* which have their origins in the specific constitutions of individuals and *idols of the theatre* which have their sources in fashion and the general current of a period. Dewey mentions these 'idols of the mind' very briefly and, in my view, does not quite see their enormous implications. In Bacon's own extensive description of them, their significance for reasoning is clear. Hence, in the historical survey in the next section of this chapter, I present Bacon's own descriptions as they are found in the original, in his *Novum Organum*.

In presenting further problems of the intellect,[4] Dewey quotes extensively from John Locke and presents Locke's three classes of men and their attendant errors: "[T]he first is of those who seldom reason at all, but do and think according to the example of others . . . (the second) is those who put passion in the place of reason . . . the third sort is of those who readily and sincerely follow reason, but . . . have not a full view of all

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secure a decision that one type of belief is vicious and the other sound. 'Suggestion' is a key word in Dewey and forms an integral feature of his 'phases of thinking.' Ibid., 24.

[3] Ibid., 23-24.

[4] Dewey's preferred terminology for problems of the intellect is 'causes of bad thinking' and 'ways in thought goes wrong.' See Dewey, *How We Think*, 25-26.

that relates to the question . . . They converse but with one sort of men, they read but one sort of books, they will not come in the hearing but of one sort of notions." I present these problems in more detail as they are found in Locke's *Of the Conduct of the Understanding* in the next section of this chapter. Dewey concludes his discussion of problems of thought by remarking:

> Any observant person can note any day, both in himself and in others, the tendency to believe that which is in harmony with desire. We take that to be true which we should like to have so, and ideas that go contrary to our hopes and wishes have difficulty in getting lodgment. We all jump to conclusions; we fail to examine and test out ideas because of our personal attitudes. When we generalize, we tend to make sweeping assertions; that is, from one or only a few facts we make a generalization covering a wide field.[5]

Dewey's educational philosophical work in the US, which continued well into the forties, may have inspired the rise of philosophy of education in Britain beginning in the late forties, when the first Chair of Philosophy of Education was established at the University of London.[6] By the mid-sixties, philosophy of education in Britain had reached maturity in the works of R. S. Peters and Paul Hirst, for instance. Though emphasizing the development of reason, this was a philosophy of education having roots in very different soil.[7] Hence, very different kinds of problems of reason and

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[5] Ibid., 28.

[6] Louis Arnaud Reid, "Reviewed Work: Education as Initiation by R. S. Peters," *British Journal of Educational Studies* 13, no. 2 (1965): 192. The first chair was Louis Arnaud Reid from 1947-1962 and the second chair was Richard S. Peters. According to Reid, the Chair of Philosophy of Education, when established just after the war, was a 'pioneer in the Commonwealth.'

[7] Dearden's, Hirst's and Peters' major edited volume, in three parts, is titled *Education and the Development of Reason*. In the introduction to the volume, Hirst makes the emphasis on reason clear:

rationality were noted. R. S. Peters, as the second holder of the Chair of Philosophy of Education at the University of London, argued that very young children lack minds and hence reason: "No man is born with a mind; for the development of mind marks a series of individual and racial achievements." Though a child has awareness, Peters continues, it is not differentiated and all modes of consciousness develop in tandem with the pointing out of paradigm objects as children grow. Mind is an achievement in human development and is a "product of initiation into public traditions enshrined in a public language, which it took remote ancestors centuries to develop." Hence, "[children] start off in the position of the barbarian outside of the gates. The problem is to get them inside the citadel of civilization so that they will understand and love what they see when they get there."[8] Of particular note here is the view that no one is born with a mind and hence no one is born with reason and rationality.

In the United States, a more contemporary philosopher of education, Richard Paul, acutely notes different kinds of problems more in line with Dewey and with a hint of Bacon and Locke: "Everyone thinks; it is our nature to do so. But much of our thinking, left to itself, is biased, distorted, partial, uninformed, or down-right prejudiced."[9] Paul categorizes these problems into problems of 'egocentric thinking'

> The possibility of a positive formulation of educational aims grounded in the development of reason is in fact implicit, if not explicit, throughout the papers of this section . . . Part two of this volume . . . is devoted to papers concerned with examining the concept of reason . . . In the final section of the book is collected a small number of papers in which certain aspects of 'the development of reason' become central to the characterization of educational aims.

Paul Hirst, "Introduction," in *Education and the Development of Reason*, eds. Robert F. Dearden, Paul H. Hirst and Richard S. Peters (London: Routledge and K. Paul, 1972), xii.

[8] Richard S. Peters, "Education as Initiation," in *Philosophical Analysis and Education*, ed. Reginald D. Archambault (London: Routledge and Kegan Paul, 1965), 102-3, 107.

[9] Richard Paul and Linda Elder, *The Miniature Guide to Critical Thinking Concepts and Tools*, 7th ed. (Tomales: Foundation for Critical Thinking, 2014), 2.

and 'sociocentric thinking.' Egocentric problems stem from "the unfortunate fact that humans do not naturally consider the rights and needs of others. We do not naturally appreciate the point of view of others nor the limitations in our own point of view." And the problem of sociocentric thinking results from the fact that "[m]ost people do not understand the degree to which they have uncritically internalized the dominant prejudices of their society or culture. Sociologists and anthropologists identify this as the state of being 'culture bound.'" This includes "the uncritical tendency to place one's culture, nation, religion above all others."[10]

In reviewing recent literature in philosophy of education, I did not find further documentation of problems of reason and this, despite calls for the cultivation of reason and rationality in education. For example, Paul Ennis makes a strong case for the teaching of critical thinking in schools based on the value of critical thinking: "Critical thinking is reasonable reflective thinking focused on deciding what to believe or do . . . I think that reasonable and reflective thinking focused on what to believe or do should be a very important part of our personal, civic, and vocational lives, and should receive attention in our educational system."[11] Most puzzling is his statement in his critical thinking textbook that "everybody is already at least somewhat proficient at critical thinking."[12] Then why a textbook in critical thinking? Israel Scheffler makes an earnest case for the cultivation of rationality in students (building on R. S. Peters' notion of

[10] Ibid., 21-22.

[11] Robert Ennis, "Critical Thinking: Reflection and Perspective Part 1," *Inquiry: Critical Thinking Across the Disciplines* 26, no. 1 (2011): 10.

[12] Robert H. Ennis, *Critical Thinking* (Upper Saddle River: Prentice Hall, 1996), xviii.

education mentioned earlier) arguing for its desirability but does not himself mention any issues with students' rationality.[13] Mathew Lipman makes an elaborate case for teaching philosophy in schools as a way of improving thinking and reasoning: "[T]he most important thing we can do for children is teach them to think well . . .This means giving students practice in reasoning, through classroom discussion involving concepts that reach across all the disciplines rather than only those that are specialized within each subject. Only through philosophy can this be done effectively."[14] But he does not cite any studies which demonstrate issues with thinking and only casually mentions that "most elementary and secondary school children get only about three out of four logical problems right."[15]

This state of affairs is perplexing. Shouldn't the rationale for a philosophy of education surrounding reason be based not just on the desirability of reason, rationality, and critical thinking but also on significant problems students face in thinking and reasoning? It is desirable to have independent thinkers. Will children not become independent thinkers, say from upbringing, enculturation or normal maturation? Piaget argued, for instance, that children's logical and abstract thinking emerges somewhat as a process of growth at about the age of eleven. Is this not the case? I could not find much evidence or discussion of problems individuals encounter in reasoning in the

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13 Israel Scheffler, *Reason and Teaching* (Indianapolis: Bobbs-Merrill, 1973).

14 Ron Brant, "On Philosophy in the Curriculum: A Conversation with Mathew Lipman," *Educational Leadership* 46, no. 11 (1988): 34. See also Matthew Lipman, *Thinking in Education* (Cambridge: Cambridge University Press, 1991).

15 Ron Brant, "On Philosophy in the Curriculum: A Conversation with Mathew Lipman," 36.

contemporary philosophy of education literature. This is a serious lacuna, I believe, in any program that aims for the cultivation of the intellect in education.[16]

This lack of documentation of problems led me to a search of problems of reason in the history of philosophy. From my background knowledge in philosophy, I knew, for example, that Plato in his various works had quite an extensive treatment of reason, its blinders and their relevance to education. Dewey's brief mention of Bacon's 'idols' led me to read Bacon's own extensive treatment of the intellect and its problems. After having read Bacon, I could appreciate the enormous relevance of his work to reasoning. In coming to read Locke's 'miscarriages of reason,' first hand, I came to appreciate Locke's extensive treatment of problems in reasoning and thier continued relevance to education. These readings impressed upon me the gravity of problems surrounding reason and the enormity of the task in cultivating reason in education. In what follows, I present the results of this search in the history of philosophy.

In *The Laws*, Plato presents a captivating image of human beings as puppets pulled by strings:

> [L]et's imagine that each of us living beings is a puppet of the gods . . . we have these emotions in us, which act like cords or strings and tug us about; they work in opposition, and tug against each other . . . back and forth we go across the boundary line where vice and virtue meet. One of these dragging forces . . . is the one we have to hang on to, come what may; the pull of the other cords we must resist . . . This cord [the former], which is golden and holy, transmits the power of 'calculation' [reason] . . . being golden, it is pliant, while the others, whose composition resembles a variety of other substances, are tough and

[16] I am indebted to Mansour Morteza for this important point and for the general point of the necessity to identify problems of reason.

> inflexible . . . although 'calculation' is a noble thing, it is gentle, not violent, and its efforts need assistants, so that the gold in us may prevail over the other substances.

"If we do give our help," Plato continues, "the moral point of this fable, in which we appear as puppets, will have been well and truly made; the meaning of the terms 'self-superior' and 'self-inferior' will somehow become clearer . . . [The individual] must digest the truth about these forces that pull him, and act on it in his life." [*Laws*, 644b-645c] [17]

In the *Republic*, we get a glimpse of some of these strings and their pull, where Plato describes the money lover in whose soul the appetitive part rules instead of his reason:

> His reasoning and spirited parts . . . are made to sit on the ground on either side of the king's feet [i.e. his appetitive part]. The only calculations and researches he allows his reasoning part to make are concerned with how to start with a little money and increase it, the only admiration and respect he allows his spirited part to feel are for wealth and wealthy people, and he restricts his ambition to the acquisition of money and to any means towards that end. [Republic 553d 1-7][18]

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[17] 'Calculation' is said to be the work of the rational soul: "And calculating, measuring, and weighing are the work of the rational part of the soul." [Republic 602e]. Plato, *Complete Works*, eds. John M. Cooper and D. S. Hutchinson (Indianapolis: Hackett Publishing, 1997). Hence forth, all references to Plato are from this edition unless otherwise noted.

[18] Quoted in Peter Losin, "Education and Plato's Parable of the Cave," *The Journal of Education* 178, no. 3 (1996): 53.

In the background to this metaphor of rulers and ruled is Plato's tripartite division of the soul (with reason, spirit and appetite as the three parts), each having its proper role and function and where reason ought to rule but often doesn't.[19]

The ideal rule of reason is nicely captured by Plato in another metaphor in the *Phaedrus*:

> Remember how we divided each soul in three at the beginning of our story—two parts in the form of horses and the third in that of the charioteer?
>
> Let us then liken the soul to the natural union of a team of winged horses and their charioteer. The gods have horses and charioteers that are themselves all good and come from good stock besides, while everyone else has a mixture. To begin with, our driver is in charge of a pair of horses; second of his horses is beautiful and good and from stock of the same sort, while the other is the opposite and has the opposite sort of bloodline. This means that chariot-driving in our case is inevitably a painful difficult business. [Plato's *Phaedrus* 553d, 246b]

This view of reason and its struggles against forces within oneself surfaces throughout the history of philosophy. However, problems such as these are rarely mentioned in contemporary philosophy of education in the context reason and rationality in education.

Though philosophers since Plato have identified problems of the intellect, it is in Bacon that we find a detailed meditation on them. In his *Novum Organum: Or True*

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[19] Three parts of the soul are most clearly stated in the *Republic*:

> The first, we say, is the part with which a person learns, and the second the part with which he gets angry. As for the third, we had no one special name for it, since it's multiform, so we named it after the biggest and strongest thing in it. Hence we called it the appetitive part, because of the intensity of its appetites for food, drink, sex, and all the things associated with them, but we also called it the money-loving part, because such appetites are most easily satisfied by means of money. [*Republic* 580d-581]

Directions for the Interpretation of Nature (1620), named after Aristotle's extensive collections of works on logic, *The Organon,* Bacon begins with a critique of logic which, he says, "comes too late to do any good, when the mind is already, through the daily intercourse and conversation of life, occupied with unsound doctrines and beset on all sides by vain imaginations."[20] Hence, the "logic now in use serves rather to give stability to the errors which have their foundation in commonly received notions than to help the search after truth. So it does more harm than good" (Aphorism XII).

The unsound doctrines and vain imaginations which infect the human intellect are many, according to Bacon, and he refers to them as 'idols of the mind.' These idols "have taken deep root" in the understanding such that "truth can hardly find entrance." And "even after entrance is obtained they will again . . . meet and trouble us, unless men . . . fortify themselves . . . against their assaults (XXVIII)." All perceptions, of the senses as well of the mind, "are according to the measure of the individual and not according to the measure of the universe." The human understanding "is like a false mirror, which, receiving rays irregularly, distorts and discolors the nature of things by mingling its own nature with it." This (major) shortcoming "has its foundation in human nature itself," in the race of men, hence, 'idols of the tribe' (XLI).

The human understanding is also prone to suppose "more order and regularity in the world than it finds . . . Hence the fiction that all celestial bodies move in perfect

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[20] James Spedding, Robert Leslie Ellis, and J. M. Robertson, eds., *The Philosophical Works of Francis Bacon* (London: G. Routledge and Sons, 1905), under "Preface," https://books.google.com/books?id=jNM7AQAAMAAJ.

Though the *Novum Organum* is a work introducing a new method for discovering truth, Bacon sensibly begins his work with problems of the intellect in reaching truth prior to suggesting his solution. If only this wisdom was shared more widely.

circles . . . Hence too the element of fire with its orb is brought in, to make up the square with the other three which the sense perceives. Hence also the ratio of density of the so-called elements is arbitrarily fixed at ten to one. And so on of other dreams" (XLV). The human understanding once it has adopted an opinion "draws all things else to support and agree with it. And though there be a greater number and weight of instances to be found on the other side, yet these it either neglects and despises, or else by some distinction sets aside and rejects, in order that by this great and pernicious predetermination the authority of its former conclusions may remain inviolate" (XLVI). What is insightful in Bacon's observations above is not just that the understanding resists the overthrow of adopted opinions, say through stubbornness, but that the understanding has distinct mechanisms to safeguard earlier opinions by *neglecting, despising or setting aside*.

Bacon also notes a tendency that was to be highlighted in twentieth century philosophy of science and made into its defining feature in opposition to the then prevailing view of science. Bacon presents it poetically:

> And therefore it was a good answer that was made by one who, when they showed him hanging in a temple a picture of those who had paid their vows as having escaped shipwreck, and would have him say whether he did not now acknowledge the power of the gods, — "Aye," asked he again, "but where are they painted that were drowned after their vows?" And such is the way of all superstition, whether in astrology, dreams, omens, divine judgments, or the like; wherein men, having a delight in such vanities, mark the events where they are fulfilled, but where they fail, though this happen much oftener, neglect and pass them by. But with far more subtlety does this mischief insinuate itself into philosophy and the sciences; in which the first conclusion colors and brings into conformity with itself all that come after, though far sounder and better.

> Besides, independently of that delight and vanity which I have described, it is the peculiar and perpetual error of the human intellect to be more moved and excited by affirmatives than by negatives; whereas it ought properly to hold itself indifferently disposed toward both alike (XLVI).

As one scholar put it, these passages could have been taken from Popper's *Conjectures and Refutations*. Bacon also points out difficulties of the human intellect arising from forces within oneself such as desires and inclinations (Plato's strings that 'tug us about'?) which act on the understanding, infecting it and coloring its perceptions:

> The human understanding is no dry light, but receives an infusion from the will and affections; whence proceed sciences which may be called 'sciences as one would.' For what a man had rather were true he more readily believes. Therefore he rejects difficult things from impatience of research; sober things, because they narrow hope; the deeper things of nature, from superstition; the light of experience, from arrogance and pride, lest his mind should seem to be occupied with things mean and transitory; things not commonly believed, out of deference to the opinion of the vulgar. Numberless, in short, are the ways, and sometimes imperceptible, in which the affections color and infect the understanding [XLIX].[21]

Of particular note here is Bacon's recognition that these affections infecting the understanding are sometimes "imperceptible." Mischiefs affecting the understanding may not be completely transparent and may require deep scrutiny. Clearly, this has enormous implications for an education aiming for the cultivation of the intellect.

Problems of the intellect also have their source in the peculiar constitution of individuals. Bacon calls these 'idols of the cave':

[21] In mentioning "infusion from the will and affections" into the understanding, Bacon may be indebted here to Plato's tripartite division of the soul: reason (understanding), spirit (will) and appetite (affections).

> For everyone (besides the errors common to human nature in general) has a cave or den of his own, which refracts and discolors the light of nature, owing either to his own proper and peculiar nature; or to his education and conversation with others; or to the reading of books, and the authority of those whom he esteems and admires; or to the differences of impressions, accordingly as they take place in a mind preoccupied and predisposed or in a mind indifferent and settled; or the like. So that the spirit of man (according as it is meted out to different individuals) is in fact a thing variable and full of perturbation, and governed as it were by chance (XLII).

Personal idiosyncrasies are many and have an impact on how the 'light of nature' is reflected. Education and books may, in fact, hinder the intellect rather than ennoble it. Bacon also mentions problems stemming from fondness of and investments in one's favorite subject where, having "bestowed the greatest pains upon them," can "distort and color" other contemplations. This is to be noted, for example, in Aristotle who, having bestowed great pains in his logic, "made his natural philosophy a mere bond servant to his logic, thereby rendering it contentious and well-nigh useless (LIV)." Some minds have an "extreme admiration of antiquity, others to an extreme love and appetite for novelty." But very few minds "are so duly tempered that they can hold the mean, neither carping at what has been well laid down by the ancients, nor despising what is well introduced by the moderns." And this leads "to the great injury" of the sciences and philosophy since "antiquity and novelty" are "humors of partisans" rather than true judgments "and truth is to be sought for not in the felicity of any age, which is an unstable thing, but in the light of nature and experience, which is eternal . . . [hence] care must be taken that the intellect be not hurried by them into assent" (LVI). Given these 'idols of the cave' Bacon alludes to a (rudimentary) philosophy of education: "[L]et every student of nature take this as a rule: that whatever his mind seizes and

dwells upon with peculiar satisfaction is to be held in suspicion, and that so much the more care is to be taken in dealing with such questions to keep the understanding even and clear" (LVIII).

Other idols have their source in the "intercourse and association of men with each other hence, 'idols of the market place.' One such idol is language: "For men believe that their reason governs words; but it is also true that words react on the understanding; and this it is that has rendered philosophy and the sciences sophistical and inactive" (LIX). The menace of words on the understanding are of two kinds. They result from "names of things which do not exist . . . which result from fantastic suppositions and to which nothing in reality corresponds" such as "Fortune" and "Prime Mover" or from "names of things which exist, but yet confused and ill-defined, and hastily and irregularly derived from realities" such as names of qualities, like "heavy, light, rare, dense and the like" (LX).

Lastly, Bacon notes, there are 'idols' which have "immigrated into men's minds from the various dogmas of philosophies . . . These I call *Idols of the Theatre*, because in my judgment all the received systems are but so many stage plays, representing worlds of their own creation after an unreal and scenic fashion" (XLIV). Of note here is Bacon's observation how philosophies, as products of the understanding, tend to resemble neat stories rather than truths: "And in the plays of this philosophical theatre you may observe the same thing which is found in the theatre of the poets, that stories invented for the stage are more compact and elegant, and more as one would wish them to be, than true stories out of history" (LXII).

And this, because "there is taken for the material of philosophy either a great deal out of a few things, or very little out of many things . . . For the Rational School of

philosophers snatches from experience a variety of common instances, neither duly ascertained nor diligently examined and weighed, and leaves all the rest to meditation and agitation of wit" (LXII). At the other extreme, "the men of experiment" also exhibit an equally pernicious habit of the understanding:

> The Empirical School of philosophy gives birth to dogmas more deformed and monstrous than the Sophistical or Rational School. For it has its foundations not in the light of common notions . . . but in the narrowness and darkness of a few experiments
>
> . . . the premature hurry of the understanding to leap or fly to universals and principles of things, great danger may be apprehended from philosophies of this kind, against which evil we ought even now to prepare (LXIV).

It is only fitting that we end Bacon's meditations on problems of the intellect with an oft quoted and revealing metaphor where he compares the ills of the two types of men of sciences: "Those who have handled sciences have been either men of experiment or men of dogmas. The men of experiment are like the ant; they only collect and use; the reasoners resemble spiders, who make cobwebs out of their own substance." His own preference is the path and labors of the bee which "takes a middle course; it gathers its material from the flowers of the garden and of the field, but transforms and digests it by a power of its own. Not unlike this is the true business of philosophy" (XCV). Bacon concludes: "So much concerning the several classes of Idols and their equipage: all of which must be renounced and put away with a fixed and solemn determination, and the understanding thoroughly freed and cleansed; the entrance into the kingdom of man, founded on the sciences, being not much other than the entrance into the kingdom of heaven, whereinto none may enter except as a little child" (LXVIII). Purity of the intellect?

Bacon's influence on philosophy was immense ushering the empiricist school of philosophy commencing with John Locke. Locke, in his *Of the Conduct of the Understanding* (1706), begins his inquiry into reason by approvingly quoting Bacon's criticism of Aristotelian and scholastic rules of logic in curing the mind of its afflictions:

> 'They,' says he, 'who attributed so much to logic, perceived very well and truly, that it was not safe to trust the understanding to itself, without the guard of any rules. But the remedy reached not the evil; but became part of it: for the logic which took place . . . has served to confirm and establish errors, rather than to open a way to truth.'[22]

Locke continues adding to this observation: "A few rules of logic are thought sufficient in this case for those who pretend to the highest improvement, whereas I think there are a great many natural defects in the understanding capable of amendment which are overlooked and wholly neglected." Noting the insufficiency of logic, he proceeds, like Bacon, in documenting major problems: "And it is easy to perceive that men are guilty of a great many faults in the exercise and improvement of this faculty of the mind which hinder them in their progress and keep them in ignorance and error all their lives."[23] There are "three miscarriages that men are guilty of in reference to their reason, whereby this faculty is hindered in them from that service it might do and was designed for." The first, Locke notes "is of those who seldom reason at all but do and think according to the example of others, whether parents, neighbors, ministers, or who

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[22] Francis Garforth, ed., *John Locke's Of the Conduct of the Understanding* (New York: Teachers College Press, 1966), 32-33. Excerpts of pertinent passages concerning reason and education from major philosophers treated here can also be found in Randall R. Curren, ed., *Philosophy of Education: An Anthology* (Malden, MA: Blackwell Publisher, 2007).

[23] Francis Garforth, *John Locke's Of the Conduct of the Understanding*, 34.

else they are pleased to make choice of to have an implicit faith in, for the saving of themselves the pains and trouble of thinking and examining for themselves."

The second miscarriage is "of those who put passion in place of reason, and being resolved that shall govern their actions and arguments, neither use their own nor hearken to other people's reason, any farther than it suits their humor, interest, or party." In this second miscarriage, as is apparent, we see traces of Plato, where reason becomes slave of passion as opposed to master. [24]

The third miscarriage "is of those who readily and sincerely follow reason, but for want of having that which one may call large, sound, round-about sense, have not a full view of all that relates to the question and may be of moment to decide it. We are all short sighted, and very often see but one side of a matter; our views are not extended to all that has a connection with it." Locke adds that no man is free of this defect as we all only know in part and hence conclude erroneously from these partial views.[25]

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[24] Locke's debt to Plato is clearer in his *Some Thoughts Concerning Education*:

> § 33. As the Strength of the Body lies chiefly in being able to endure Hardships, so also does that of the Mind. And the great Principle and Foundation of all Vertue and Worth is placed in this, That a Man is able to *deny himself* his own Desires, cross his own Inclinations, and purely follow what Reason directs as best, tho' the appetite lean the other way."

John Locke, *Some Thoughts Concerning Education*, eds. John W. Yolton and Jean S. Yolton (Oxford University Press Oxford, 1989), 103.

[25] Francis. W. Garforth, ed. *John Locke's Of the Conduct of the Understanding*, (New York: Teachers College Press), 33.

We might ask, why metaphor of 'miscarriage' of reason in Locke rather than metaphor of 'false mirror' as in Bacon? Reason, on Locke's view, is a faculty of the 'understanding' likened to a touchstone. Much like Descartes, he refers to reason as 'natural reason' implying that the faculty of reason is in us naturally, it is part of our very make-up, and the problem lies not *in* it, but in its *employment* hence his choice of the metaphor of 'miscarriage.' He makes the latter clear when he says a little later that: "We are born with faculties and powers capable almost of anything such at least as would carry us farther than can easily be imagined: but it is only the *exercise of those powers* which give us ability and skill in anything and leads us towards perfection." Ibid., 38.

Apart from these 'miscarriages of reason' there is another problem related to the understanding which "misleads men in their knowledge." This is the custom of taking up "principles that are not self-evident and very often not so much as true" such as for example, "the founders or leaders of my party are good men, and therefore their tenants are true" or "it has been long received in the world, therefore it is true" or "it is new, and therefore false." Such principles are then taken as standards by the generality of men, "by which they accustom their understanding to judge."[26] Note echoes of Bacon here. Locke continues: "And thus they, falling into a habit of determining truth and falsehood by such wrong measures, it is no wonder they should embrace error for certainty and be very positive in things they have no ground for."[27] Locke brings it all together in one passage:

> Every man carries about him a touchstone, if he will make use of it, to distinguish substantial gold from superficial glitterings, truth from appearances. And indeed the use and benefit of this touchstone, which is natural reason, is spoiled and lost only by assumed prejudices, overweening presumption, and narrowing our minds. The want of exercising it in the full extent of things intelligible, is that which weakens and extinguishes this noble faculty in us. [28]

In summary, problems surrounding reason, according to Locke, consist in individuals not using their reason but thinking and acting according to the example of others, being

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[26] This is couched as an error in understanding, rather than specifically as a miscarriage of reason. Later, in his educational solutions, it is clear that the fault lies in not applying reason.

[27] Ibid., 33.

[28] Ibid., 38-39.

governed by passion instead of reason, having only a partial view of matters and falling into the habit of determining truth and falsehood by faulty standards.

Though held in very high regard, the geography of the intellect, through the eyes of philosophers, is uneven, rocky and shaky in several respects. Instead of reason ruling in the soul, it is in danger of becoming captive to passion, it is liable to discolor the nature of things by reflecting poorly, it seeks more order and regularity than it finds, it draws all things else to support and agree with it, it neglects contrary evidence, (more perniciously) it is sometimes not used at all, it defers to education, authority, custom, and upbringing, judges by faulty standards, concludes from partial views, is entrapped by language, constructs whole erroneous systems, leaps to generalities from a few instances, and is beset with a primitive credulity. Education has a tall order.

Goals of the intellect in education

Numerous philosophers since the Greeks have argued for the cultivation of reason in one form or the other as a goal of education. According to Plato, it is the 'instrument' in the soul, whose value is beyond measure, which the object of education:

> It's no easy task—indeed it's very difficult—to realize that in every soul there is an instrument that is purified and rekindled by such subjects [e.g. arithmetic, geometry] when it has been blinded and destroyed by other ways of life, an instrument that it is more important to preserve than ten thousand eyes, since only with it can the truth be seen. [*The Republic*, 527d-e]

Plato famously conceived of this education as one of 'turning' the soul rather than one of 'putting sight into the blind':

> But our present discussion, on the other hand, shows that the power to learn is present in everyone's soul . . .

> Then education is the craft concerned with doing this very thing, this turning around, and with how the soul can most easily and effectively be made to do it. It isn't the craft of putting sight into the soul. Education takes for granted that sight is there but that it isn't turned the right way or looking where it ought to look, and it tries to redirect it appropriately. [*Republic* 518c-d] [29]

In turning the soul, the educator leads prisoners, through an arduous journey from the darkness of the cave where prisoners only see shadows of objects but take them to be real to the clarity of day light. In the process, the entire soul is transformed such that it now lives by the light of true knowledge of the good rather than by the blind vicissitudes of passion and spirit. This noble end is to be achieved only through a sound and deliberate education focusing on reorienting reason: reorienting the instrument that is worth more than ten thousand eyes.

Locke equally emphasized education as a means of achieving the promise of reason: "Temples have their sacred images and we see what influence they have always had over a great part of mankind," but more than this, "the ideas and images in men's minds are the invisible powers, that constantly govern them and to these they all universally pay a ready submission." Hence, "great care should be taken of the understanding, to conduct it right, in the search of knowledge, and in the judgments it makes."[30] But Locke notes "Nobody is under obligation to know everything." What is essential is that men "should think and reason right about what is their daily employment."

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[29] See Losin, "Education and Plato's Parable of the Cave," 52.

[30] Francis. W. Garforth, ed. *John Locke's Of the Conduct of the Understanding*, 33.

In his *Some Thoughts Concerning Education*, Locke emphasizes reasoning with children and educating them through the 'instrument':

> It will perhaps be wondered that I mention Reasoning with Children: And yet I cannot but think that the true Way of Dealing with them. They understand it as early as they do Language; and, if I misobserve not, they love to be treated as Rational Creatures sooner than imagined. 'Tis a Pride should be cherished in them, and, as much can be, made the great Instrument to turn them by."[31]

No account of the goals of education with respect to reason can leave out Rousseau's critical remarks, whose *Emile*, is partly a rebuttal to Locke:

> To reason with children was Locke's great maxim . . . I see nothing more stupid than these children who have been reasoned with so much. Of all the faculties of man, reason, which is, so to speak, only a composite of all the others, is the one that develops with the most difficulty and latest. And it is this one that they want to use in order to develop the first faculties! . . . This is to begin with the end, to want to make the product the instrument. If children understood reason, they would not need to be raised.[32]

Notice dramatic differences in conceptions of reason. In Locke, reason is 'natural' and hence simply needs to be employed whereas in Rousseau, it is *developed* hence one should not converse with children as if it is already developed.

Like Locke, Dewey emphasized an education focused on thinking. The goal of education is not to teach a multiplicity of subjects, but engendering in students a habit

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[31] Locke, *Some Thoughts Concerning Education*, 143.

[32] Jean-Jacques Rousseau, *Emile: or, On Education*, trans. Allan Bloom (New York: Basic Books, 1979) quoted in Randal Curren, *Philosophy of Education*, 425-6.

of "reflective thought." Reflective thought, according to Dewey, is an "active, persistent and careful consideration of any belief or supposed form of knowledge in the light of grounds that support it and the further conclusions to which it tends." And this includes "a conscious and voluntary effort to establish belief upon a firm basis of evidence and rationality."[33]

Robert Maynard Hutchins, president of University of Chicago (1930-1945), put it forthrightly: "Every man has a function as a man. The function of a citizen or subject may vary from society to society. . . [b]ut the function of man as man is the same in every age and in every society, since it results from his nature as a man. The aim of an educational system is the same in every age and in every society where such a system can exist: it is to improve man as man." Men are by nature 'rational animals' and it is this rationality that needs nurturing and development. Rational animals "achieve their terrestrial felicity by the use of reason."[34]

"If education is rightly understood," Hutchins continued, "it will be understood as the cultivation of the intellect. The cultivation of the intellect is the same good for all men in all societies. It is, moreover, the good for which all other goods are only means. Material prosperity, peace and civil order, justice, and the moral virtues are means to the cultivation of the intellect." In this 'rational' scheme of education, Aristotle is center stage: "So Aristotle says in the *Politics:* 'Now, in men reason and mind are the end towards which nature strives, so that the generation and moral discipline of the citizens

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[33] Dewey, *How We Think,* 9.

[34] Robert Maynard Hutchins, "The Basis of Education," in *Readings in the Philosophy of Education*, ed. John Martin Rich (Belmont: Wadsworth Publishing Co., 1966), 17, 21.

ought to be ordered with a view to them.' An education which served the means rather than their end would be misguided.''[35] Hence, according to Hutchins, the cultivation of the intellect is the supreme good and the ultimate goal of education.

Contemporary (and near contemporary) philosophers of education have also emphasized the cultivation of the intellect as a goal of education. Paul Hirst argued for the development of mind through a liberal education focused on 'rational knowledge': "A liberal education is, then, one that, determined in scope and content by knowledge itself, is thereby concerned with the development of mind . . .a liberal education is in a very real sense the ultimate form of education . . . It is an education concerned directly with the development of the mind in rational knowledge, whatever, form that freely takes."[36] Israel Scheffler, following in the footsteps of Hirst and Peters, stated: "Certainly, rationality is a fundamental cognitive and moral virtue and as such should, I believe, form a basic objective of teaching.[37] Mathew Lipman wrote: "Education can be seen as the great laboratory for rationality, but it is more realistic to see it as a context in which young people learn to be reasonable so that they can grow up to be reasonable citizens, reasonable companions and reasonable parents."[38] And "the most important

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[35] Robert Maynard Hutchins, *The Higher Learning in America* (New Brunswick: Transaction Publishers, 1995), 67.

[36] Paul Hirst, "Liberal Education and the Nature of knowledge" in *Education and the Development of Reason,* eds. Robert F. Dearden, Paul H. Hirst, and Richard S. Peters (London: Routledge and Kegan Paul, 1972), 402, 404.

[37] Scheffler, *Reason and Teaching*, 78

[38] Lipman, *Thinking in Education*, 22.

thing we can do for children is teach them to think well."[39] Finally, Richard Paul emphasizes the improvement of thinking through education: "[E]ducation implies a self-motivated action upon one's own thinking and a participation in the forming of one's own character. Through it we cultivate self-directedness of thought and transform our values."[40]

Most philosophers and philosophers of education agree that the cultivation of the intellect, in one form or the other, should form an important goal of education. However, there is no consensus on the nature of the intellect (what it is) nor on how it is to be cultivated. Major differences arise on how the goal of the cultivation of the intellect in education is to be achieved. [In the next chapter, I closely analyze three educational programs for the cultivation of the intellect in education].

Multiple conceptions of the intellect

The above survey into problems and goals of intellect, as theorized by philosophers, reveals a significant issue with respect to the implied *conception* of the intellect. Philosophers, including philosophers of education, have postulated numerous, divergent and sometimes contradictory notions of the intellect, reason and rationality. From the perspective of a philosophy of education aiming towards the cultivation of the intellect, this can be problematic as the true focus of the goals of education shift

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[39] Brant, "On Philosophy in the Curriculum: A conversation with Mathew Lipman," 34.

[40] Richard Paul, "Critical Thinking, What, Why, and How," in *Critical Thinking: Educational Imperative*, ed. Cynthia Barnes (San Francisco, Jossey-Bass Publishers, 1992), 8-9.

drastically depending on the implied conception of the intellect despite surface agreement on the overall aims.

Plato, from the passages quoted above, clearly refers to reason as an 'instrument.' The cure for him, as we have seen, is not putting sight into the soul but orienting the soul in the right direction. Though Bacon considers reason as one of the faculties of the 'rational soul' (the other two being memory and imagination), his focus is on "the understanding." The understanding is analogous to a mirror with blemishes which reflects poorly. The solution lies in instituting a *method* for discovering truths (as 'helps for the understanding'). Locke emphasizes reason, where reason is a 'part' or a 'faculty' of the understanding. It is a 'noble' and 'natural' faculty (most likely implying pure and complete). The remedy lies in *using* it. And with respect to its use, Locke, much like Descartes, sees reason as making links (loosely, inferences) between propositions (ideally with sure foundations) leading to demonstrative and probabilistic knowledge. Its use is modeled best in mathematics.[41] Dewey, on the other hand dismisses all talk of a faculty of reason as a relic of the past, and makes no mention of the understanding but speaks instead of the nature of thought and thinking. According to Dewey, problems of thinking stem from natural tendencies of humans to accept "suggestions" of the mind prior to evaluating them for their evidentiary bases. Reasoning is essentially inferring. It is 'thinking' that is the wider notion and the target of education. Correction in thinking comes from implementing a method (conceived along the lines of scientific procedures) as in Bacon and fostering certain attitudes of mind. In Hutchins, the intellect is ultimately knowledge of "first principles" along Aristotelian lines.

[41] Francis. W. Garforth, ed. *John Locke's Of the Conduct of the Understanding*, 51-52.

R. S. Peters and Paul Hirst move as far away as they can from any talk of reason as an instrument or faculty or distinct ability. Reason is to be understood as virtually equivalent to mind and mind is to be understood as defined and characterized by the intellectual products of a civilization, namely disciplinary knowledge in the various fields with special reference to ways of testing and evaluating claims. Scheffler takes on board Peters' and Hirst's notion but adds the notion of "principled thought and action" along Kantian lines, as a mark of reason and rationality. Scheffler emphasizes giving and seeking "reasons" based on principles as characterizing rationality. Paul Ennis stresses assessment and evaluation of arguments as routes to rationality and reasonable belief. Richard Paul emphasizes evaluation of "elements of thought."

As is amply apparent, surface similarities in goals belies deeper disagreement on the fundamental nature of the intellect and the specific target of education. Hence, great care needs to be exercised in philosophy of education in determining *what precisely is said to be educated and cultivated* in calls for the cultivation of reason in education, both, at the level of goals and at the level of the actual educational programs. In the next chapter, I critically examine, in detail, three contemporary educational programs for the cultivation of reason in education; their goals as well as their educational methods. In the background of my critique are the many problems of the intellect noted above, the question of the efficacy of their programs and the implied conception of reason.

Chapter 2

Contemporary Educational Programs for the Cultivation of the Intellect in Education

Introduction

In this chapter, I critically and closely examine three influential and contemporary educational programs advocated in philosophy of education for *achieving* the goal of the cultivation of reason and rationality in education, namely, i. through 'critical thinking,' ii. through 'fairminded critical thinking' and iii. through 'initiation into the disciplines.' Each is presented here by persons who have helped shape the contours of the program. Each continues to be refined and promoted by their original advocates or by others who build on their foundations. Finally, each develops out of rich debates in twentieth century educational thought regarding the cultivation of the intellect. In what follows, I present this historical context out of which these programs emerge. Following this, I examine each of the three educational programs in detail for their efficacy in cultivating the intellect in education.

Towards the turn of the century, noting the proliferation of subjects offered in secondary schools at the time (where some forty different subjects were offered), the famous Committee of Ten was appointed by the National Council of Education, led by the then President of Harvard, Charles W. Elliot. The aims of the committee were to consider the whole issue of secondary school curriculum. When published in 1894, under the aegis of the United States Bureau of Education, the report was perceived as a

watershed in American curricular reform.[42] The then National Commissioner of Education praised the report as "the most important educational document ever published in this country."[43] James C. Mackensie, one of the ten members, commented that the report "represents the best judgment, not alone of the Committee of Ten, but of some ninety educators chosen from all classes of schools and colleges, East, West and South—venerable eastern universities, modern state endowments, great city high schools, historic academies, vigorous private schools." Mackensie was hopeful that the scheme for secondary schools suggested in the report will be "commended as the best working theory thus far proposed for the organization and conduct of our secondary schools, public and private."[44]

The report prided itself on its "bold excision of useless studies."[45] In its stead, the report recommended a four-year high school curriculum composed of Latin, Greek, English, French, German, Mathematics (Algebra, Geometry, Trigonometry), General History, Natural History and Physical Geography (Astronomy, Meteorology, Botany, Zoology and Physiology, Geology, Ethnology), Physics and Chemistry.[46] Menkensie notes that these were to be taught in such a manner that they "secure from every subject

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[42] National Education Association of the United States, *Report of the Committee of Ten on Secondary School Studies with the Reports of the Conferences Arranged by the Committee* (New York: American Book Company (for the NEA), 1894), https://archive.org/details/reportofcomtens00natirich.

[43] James C. Mackensie, "The Report of the Committee of Ten," *The School Review* 2, no. 3 (1984): 147.

[44] Ibid., 147-148.

[45] Ibid., 155.

[46] National Education Association of the United States. *Report of the Committee of Ten, 36.*

pursued genuine *mental training."*[47] Mental training was based on the then current notion that the mind consistent of powers, much like distinct muscles, which could be strengthened by exercising them. One important power of the mind was said to be 'reasoning' which could then be exercised in various ways through the learning of subject matter (including learning the languages, French, German and Latin): [48] "The Conferences have abundantly shown how every subject which they recommend can be made a serious subject of instruction, well fitted to train the pupil's powers of

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[47] James C. Mackensie, "The Report of the Committee of Ten," 147 (emphasis added).

[48] National Education Association of the United States, *Report of the Committee of Ten,* 43.

The Report of Committee on Other Modern Languages justified the learning of languages in terms of the development of these powers:

> We are of the opinion that there should be introduced into the grammar schools an elective course in German or French . . . We make the above recommendation . . . *in the firm belief* that the educational effects of modern language study will be of immense benefit to all who are able to pursue it under proper guidance. It will train their memory and develop their sense of accuracy; it will quicken and *strengthen their reasoning powers* by offering them, at every step, problems that must be immediately solved by the correct application of the results of their own observations. Ibid., 96 (emphasis added).

A clear statement came from the Committee on Geography:

> While various activities of the mind are called into exercise in geographical work, the committee would advise that the systematic development of the three classes of these should largely control the arrangement of the work, viz., (1) the powers of observation, (2) the powers of scientific imagination, and (3) the powers of reasoning. Ibid., 214.

So entrenched were the notions of mental powers and their development in education through subject matter, that the report recommended that teachers should

> definitely associate the topics they are endeavoring to teach with the mental powers they bring into exercise, so that there shall be ever present in the mind as an object of endeavor not only the mastery of the subject-matter but the acquisition of improved mental powers. Ibid., 216.

Noting that in England, France and Germany, students start to learn Latin at a much earlier age and for many more hours, the conference recommended an earlier start age for the teaching of Latin in American schools on the basis of its greater efficacy in 'training the mind' in countries where Latin was taught for a lengthier time:

> The explanation of the undeniable fact that, in the countries just named [England, France and Germany], Latin has been more successfully employed than with us "as an instrument for training the mind to habits of intellectual conscientiousness, patience, discrimination, accuracy, and thoroughness,—in a word, to habits of clear and sound thinking," doubtless lies partly in the more liberal allowance of time. Ibid., 61.

observation, expression, and reasoning." That the above subjects were necessary for the training of the powers of the minds appears as a foregone conclusion in the minds of the approximately ninety eminent men participating in the report. However, while mental training might have been the underlying rationale, the disciplines, each in their own way, were seen as necessary in achieving it. It was through the disciplines that mental training was to achieved. Disciplinary knowledge was sacrosanct.

It was just after the committee's recommendations of a firmly subject specific curriculum that John Dewey, one of the first philosophers in modern history to focus on education, began his vast critique of education. His influence looms large in US educational thought. Many of his works critique the then emphasis on the disciplines, which he saw as mere products. In its stead, he emphasized *inquiry*, the process of acquiring this knowledge, and the fruits of this inquiry in terms of experience and the growth of experience as final goals of education. In 1910 he published *How We Think* with a second edition in 1933. Noting a proliferation of subjects in schools, he recommended a principle of unity for education: "Our schools are troubled with a multiplication of studies, each in turn having its own multiplication of materials and principles." Unless, this situation should lead into "distraction," he continues, "some clew of unity, some principle that makes for simplification, must be found." Dewey found the principle in the scientific method much as Bacon had found experiment and induction as 'helps' for the understanding: "This book represents the conviction that the needed steadying and centralizing factor is found in adopting as the end of endeavor that attitude of mind, that habit of thought, which we call scientific." Moreover, this attitude, according to Dewey, fits hand and glove with the natural proclivities of the child: "[T]he native and unspoiled attitude of childhood, marked by ardent curiosity,

fertile imagination, and love of experimental enquiry, is near, very near, to the attitude of the scientific mind."[49]

How We Think emphasized an education in thinking rightly, away from superstition and a tendency to believe things simply because they are fashionable or interesting or vividly presented. As noted in Chapter 1, he cited Bacon's 'idols of the mind' and Locke's observations of the miscarriages of reason as endemic problems in human thinking. To overcome these shortcomings, Dewey emphasized *reflective thinking* as an aim of education which he defined as an "active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of grounds that support it and the further conclusions to which it tends" and includes "a conscious and voluntary effort to establish belief upon a firm basis of evidence and rationality."[50]

Dewey was writing in changing times in American education. In 1893, when the Committee of Ten published its report, the high school served a small elite. Within a period of thirty years, from 1890 to 1920, high school enrollment rose sevenfold—from 360,000 to 2.5 million.[51] In 1913, the National Education Association appointed yet another committee to examine the school curriculum, aptly named: 'The Commission on the Re-organization of Secondary Education." In 1918 the commission published its report unambiguously stating that secondary education "should be determined by the needs of the society to be served, the character of the individuals to be educated, and

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[49] Dewey, *How We Think,* v.

[50] Ibid., 9.

[51] Sol Cohen, "The Transformation of the School" in *Foundations of Education*, ed. George F. Kneller (New York: Wiley. 1971), 33.

the knowledge of educational theory and practice available."[52] The report overtly rejected what had been taken for granted by the Committee of Ten. It rejected the notion of 'general discipline' along with mastery of subject matter as goals of secondary education. In its stead, the Commission proposed seven 'Cardinal Principles of Education'—Heath, Command of Fundamental Processes, Worthy Home Membership, Vocation, Citizenship, Worthy Use of Leisure, and Ethical Character. [53] As an educational historian observed, "intellectual capacity nor the mastery of secondary-level subject matter was ever mentioned."[54] Education, the report declared, "must be conceived as a process of growth. Only when so conceived and so conducted can it become a preparation for life. In so far as this principle has been ignored, formalism and sterility have resulted."[55] Education along progressive lines had swept the nation—an education that proponents argued should be based on children's needs rather than on the basis of subject matter content. Though Dewey was later to disown much of the excesses he saw in progressive education, Dewey and progressive education were linked and their influence continued well into the latter part of the twentieth century.

As a contemporary philosopher of education notes, it was John Dewey who was the inspiration for the progressive education critical thinking movement in

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[52] National Education Association of the United States, *Cardinal Principles of Secondary Education: A report of the Commission on the Reorganization of Secondary Education* (Washington: Government. Printing Office, 1981), under "The Need for Reorganization," https://archive.org/details/cardinalprincipl00natirich

[53] Cohen, "The Transformation of the School," 34.

[54] Sol Cohen, Ibid., 34.

[55] National Education Association of the United States, *Cardinal Principles of Secondary Education,* 16-17.

education.[56] In the 1930's, the Progressive Education Association's "Eight-Year Study" included tests under such titles as *Application of Principles of Science"* and *Application of Principles of Logical Reasoning."*[57] However, the launching of Sputnik by the Russians led to a reassessment and content knowledge, especially the sciences were once again emphasized, according to Ennis. Support for critical thinking, "suddenly exploded" around 1980; the Commission of Humanities emphasized critical thinking and the College Board, as a body which oversees the SAT, "specified reasoning as one of its six basic academic competencies." Most significantly, in 1983, the California State University System "required that in order to graduate from one of the State University units, a student must have had nine hours of instruction in communication and in critical thinking." Ennis also notes that during this time the "American Philosophical Association's Board of Officers (1985) urged philosophers to help with attempts to test for critical thinking and attempts to include critical thinking in elementary and secondary curricula."[58] The push for critical thinking continues into the twenty first century, Ennis notes, where "emphasis on critical thinking increased in colleges and universities, at least in mission statements."[59]

Most recently, the Common Core, the newly adopted national elementary and middle school standards for English Language Arts and Math, and the most sweeping

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[56] Ennis, "Critical Thinking: Reflection and Perspective Part 1," 5.

[57] Ibid., 6.

[58] Ibid., 7.

[59] Ibid., 8.

curriculum reform in recent memory, stresses critical thinking skills: "Across the English language arts and mathematics standards, skills critical to each content area are emphasized. In particular, problem-solving, collaboration, communication, and critical-thinking skills are interwoven into the standards."[60] The ELA/literacy standards "include critical-thinking skills and the ability to closely and attentively read texts in a way that will help them understand and enjoy complex works of literature. Students will learn to use cogent reasoning and evidence collection skills that are essential for success in college, career, and life."[61]

Over the last three decades, philosophers of education have suggested several conceptions of and programs for critical thinking but moving away from Dewey's emphasis on scientific enquiry. I examine two of these influential conceptions in the first two sections of the present chapter: the conception of critical thinking development by Paul Ennis and the conception developed by Richard Paul.

With the growing influence of Dewey and the tide of progressive education which focused more and more on children's needs to the perceived neglect of worthwhile subject matter came a severe backlash. Progressive education came to be seen as serving only present needs, focusing more on *means* rather than on ends to the detriment of perennial values. And no one expressed this more strongly, in the early 1930's, than Robert Maynard Hutchins. Hutchins was dismayed at what he took to be an erroneous direction in American education. Fundamentally, education for him was

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[60] Common Core: State Standards Initiative, http://www.corestandards.org/about-the-standards/frequently-asked-questions/#faq-2309

[61] Common Core: State Standards Initiative. http://www.corestandards.org/ELA-Literacy/

not about the current needs of children as some progressives had maintained nor was it a specialized education, nor a pre-professional education, nor a utilitarian education. These were all dependent on society and were essentially ephemeral, he argued. He was also critical of the gradual encroachment and increasing influence of the sciences in academia:

> If we are to set about developing the intellectual powers of men through having them acquire knowledge of the most important subjects, we have to begin with the proposition that experimentation and empirical data will only be of limited use to us, contrary to the convictions of many American social scientists, and that philosophy, history, literature, and art give us knowledge, and significant knowledge, on the most significant issues. [62]

A disease had infected US education, according to Hutchins: "Relativism, scientism, skepticism, and anti-intellectualism, the four horsemen of the philosophical apocalypse, have produced that chaos in education which will end in the disintegration of the West." [63] This erroneous and destructive path was laid, in part, according to Hutchins, by none other than William James and John Dewey, representatives of what he took as the new anti-intellectualism infecting education both at the secondary and college level.

Instead, Hutchins argued, education should be conceptualized on the basis of the *function* of man, *qua* man. Men are by nature 'rational animals.' Rational animals "achieve their terrestrial felicity by the use of reason."[64] But this rationality needs to be

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[62] Robert M. Hutchins, "The Basis of Education" in *Readings in the Philosophy of Education*, ed. John Martin Rich (Belmont: Wadsworth Publishing Company, 1966), 19.

[63] Ibid., 19.

[64] Ibid., 21.

educated. And the final goal of education should be understood as the cultivation of the intellect where "[m]aterial prosperity, peace and civil order, justice, and the moral virtues are means to the cultivation of the intellect."[65] Hence, education is to be composed "principally of the permanent studies because these studies draw out the elements of our common human nature, because they connect man with man, because they connect us with the best that man has thought, because they are basic to any further study and to any understanding of the world."[66] What are the permanent studies, according to Hutchins? "They are in the first place those books which have through the centuries attained to the dimensions of classics . . . A classic is a book that is contemporary in every age. That is why it is a classic. The conversations of Socrates raise questions that are as urgent today as they were when Plato wrote."[67]

An ideal university "would consist of three faculties, metaphysics, social science, and natural science. The professors would be those who were thinking about the fundamental problems in these fields. The teaching would be directed to understanding the ideas in these fields, and would have no vocational aim."[68] Post Hutchins, and his sometimes public and lengthy criticism of Dewey and Progressivism, the disciplines were once again back in the debate on how best to educate and how best to cultivate the intellect.

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[65] Hutchins, *The Higher Learning in America*, 67.

[66] Ibid., 77.

[67] Ibid., 78.

[68] Ibid., 116.

It was in the midst of this sometimes acrimonious and contentious debate on the fundamentals of American education which led another president of Harvard, James Bryant Conant, to set up "The Committee on the Objectives of a General Education in a Free Society" in 1943. Two years later, the committee published its full report, *General Education in a Free Society*, and was presented to the Department of State.[69] Noting that a statement on the aims of American education is nothing less than a "philosophy of American education"[70] the Harvard report steered a middle course between Dewey and Hutchins:

> The true task of education is therefore to reconcile the sense of pattern and direction deriving from heritage with the sense of experiment and innovation deriving from science that they may exit fruitfully together . . . Education can therefore be wholly devoted neither to tradition nor to experiment . . . It must uphold at the same time tradition and experiment.[71]

In determining the aims of education, according to the report, a philosophy of education should look both "to the nature of knowledge and to the good of man in society."[72] And the good of man in society is embodied in certain traits and characteristics. The report emphasized four such abilities: "to think effectively, to communicate thought, to make relevant judgments, and to discriminate among values."

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[69] Harvard University, *General Education in a Free Society: Report of the Harvard Committee* (Cambridge, Mass: Harvard University Press, 1945).

[70] Ibid., 42-43.

[71] Ibid., 50-51.

[72] Ibid., 64.

Effective thinking consisted of three phases of thinking, logical, relational, and imaginative. But these were to be developed through the traditional disciplines: "It may be noted that the three phases of effective thinking, logical, relational and imaginative correspond roughly to the three divisions of learning, the natural sciences, the social studies and the humanities."[73] The Harvard Report interpreted the aims of education as effecting a balance: "[L]earning . . . is for the sake of cultivating basic mental abilities; in short to foster the power of reason in man . . . Yet reason while an end is a means as well—a means to the mastery of life. The union of knowledge and reason in the integrated personality—that is the final test of education.[74]

The Harvard Report did not go far enough to members of a new group of philosophers of education in England. And American progressivism, the emphasis on 'critical thinking' along with Dewey's concepts of growth and experience came under severe criticism abroad. Richard Peters, across the Atlantic noted: "There have been many like Dewey who have attacked the notion that education consists in the transmission of a body of knowledge. Stress is placed instead on critical thinking,

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[73] Ibid., 67.

[74] Ibid., 168.

In qualifying and expanding on this view the Harvard Report intimates Plato's division of soul into parts and its internal struggles and invokes Plato's chariot:

> We are not now denying the central position of reason or knowledge as ministering to reason; we are only urging that reason is or must strive to become a master of a highly complex inner kingdom consisting of many and diverse members, all of which go into the making of a complete man . . . While traditionally man has been viewed as primarily a rational animal, recent thinking has called attention to his unconscious desires and sentiments which becloud and sometimes sway his reason. To be sure, classical philosophers recognized the existence of the passions, but they tended to regard the latter as alien intrusions and an unwanted complication. Yet passions, although dangerous because primitive and even savage, are a source of strength if properly guided; they supply the driving forces for achievement . . . According to the ancient myth, reason is the charioteer that directs but it is not the horse that pulls the chariot. In the complete man we look for initiative, zest and interest, strength of resolution, driving power. Ibid 168-9.

individual experimentation and problem solving,".[75] In the early sixties, through the work of Richard. S. Peters, Paul Hirst and Robert Dearden, a rigorous program in analytical philosophy of education began to emerge in the midst of Wittgenstein's philosophy of language that had taken root in England. They were soon joined by Israel Scheffler at Harvard and others. On the basis of a conceptual analysis of education, Peters argued that education cannot be understood in terms of such inner notions as growth and experience nor in terms of general thinking abilities, such as 'critical thinking.' Inner processes require public criteria. What it is to think critically is dependent on public forms of knowledge:

> The emphasis on 'critical thinking' was salutary enough, perhaps, when bodies of knowledge were handed on without any attempt being made to hand on also the public procedures by means of which they had been accumulated, criticized, and revised. But it is equally absurd to foster an abstract skill called 'critical thinking' without handing on anything concrete to be critical about. For there are as many brands of 'critical thinking' as there are disciplines, and in the various disciplines such as history, science, and philosophy, there is great deal to be known before the peculiar nature of the problem is grasped.[76]

The tendency of American Pragmatism and behaviourism, Peters argued, "is to assimilate thinking to doing . . . But an educated man is distinguished not so much by what he does as by what he 'sees' or 'grasps'. . . education involves 'knowing that' as well as 'knowing how.'"[77] In other words, subject matter knowledge is essential. In like

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[75] Peters, "Education as Initiation," 103.

[76] Ibid., 103-104.

[77] Ibid., 100-101.

manner, Peters' colleague and collaborator, Paul Hirst argued that the development of mind, reason and the intellect was not to be gauged by the development of general thinking skills such as for example 'effective thinking' as the Harvard Report had indicated. Mind is defined and understood only in light of and through the public 'forms of knowledge.' Hence, it is these forms of knowledge, namely the traditional disciplines, that ought to characterize education. These public forms of knowledge are forms of understanding human experience. Reason and rationality are to be understood as *initiation* into these forms of knowledge in which assertions are tested and validated. Israel Scheffler, building on Peters and Hirst's program, put it well in his *Reason and Teaching:*

> What unites the several studies [in the collected volume] is not a special method or technique but a common striving to develop forms of critical understanding, to define and progressively test criteria of rational judgment and associated principles of generalization and evaluation. This striving is embodied in the several traditions of thought, each providing a realization of the associated concepts of 'reason' and 'principle' within its sphere. To become rational is to enter into these traditions, to inherit them and to learn to participate in the never ending work of testing, expanding, and altering them for the better.[78]

Rationality through the disciplines, as originally formulated by Peters and Hirst and elaborated by Scheffler, is the subject of the last section of this chapter.

In the present chapter, I closely evaluate the three programs for the cultivation of reason and rationality in education. In my critique, I have been inspired by the

[78] Scheffler, *Reason and Teaching*, 2.

historical philosophical literature on problems of reason and rationality as reviewed in Chapter 1. To my dismay, few philosophers of education today, working in the field of reason and education, make reference to this rich history. I have also been inspired by a recent manuscript by Mansour Morteza on the philosophy of reason where he argues that:

> The idea of reason is not limited to argument and evaluation of argument. The idea of reason includes reason in itself, the use of reason, the problems of reason, contents, reality, the reasoner, their relationships, and other elements. An adequate understanding of the idea of reason needs to take into account these elements and the relationships among them.[79]

This broader idea of reason, has also helped deepen my understanding and appreciation of the philosophical history of reason itself.

My critique of current educational programs is focused on the overriding question of sufficiency. Are these programs *sufficient* for the cultivation of reason and rationality in education given the problems of reason (as documented in Chapter 1) and the desirability of the goal of cultivating reason in education? My analysis is organized around five major questions: What problems of reason in education do these programs acknowledge (if they do)? What goals of education with respect to reason and rationality do they advocate? What methods do they advocate for achieving these goals? What is the implied conception of reason in the goals and in the methods advocated? Are the methods efficacious and adequate for the full cultivation of the intellect in education?

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[79] Monsour Morteza, "Philosophy of Reason" (unpublished manuscript, May 31, 2016), Word file.

Chapter 2.1

Rationality Through Critical Thinking Skills

Introduction

Robert Ennis's early paper in the *Harvard Education Review*, "A Concept of Critical Thinking," published just over half a century ago (1962), was one of the first thorough attempts by a philosopher of education in modern times to define the scope of critical thinking.[80] One critic attributes the popularity of critical thinking in contemporary education to this work.[81] In this early article, Ennis defined critical thinking as "the correct assessing of statements."[82] Over the many years since that publication he has refined his conception and now defines it as "reasonable reflective thinking focused on deciding what to believe or do."[83] According to Ennis, this two-fold conception, emphasizing both belief and action, is inspired by Dewey and somewhat reflects the usage of critical thinking in the critical thinking movement. [84] More importantly, and also according to Ennis, critical thinking, as defined above, should have a definite place in education: "I think that reasonable and reflective thinking focused on what to believe or do should be a very important part of our

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[80] Robert H. Ennis, "A Concept of Critical Thinking," *Harvard Education Review* 32, no. 1 (1962): 81-111.

[81] Michael Roth as mentioned by Ennis. Robert H. Ennis, "Critical Thinking: Reflection and Perspective: Part 1," 6.

[82] Ibid., 9.

[83] Ibid., 10.

[84] Furthermore, the phrase 'reflective thinking' is indebted to Dewey who had argued for 'reflective thinking' as an aim of education.

personal, civic, and vocational lives, and should receive attention in our education system."[85] In what follows, I present and critically analyze Ennis' program for critical thinking in education with respect to goals of critical thinking and methods for achieving these goals. I end with an observation and comment on the overall pedagogy in Ennis' program and a summary of his arguments.

Goals of critical thinking

According to Ennis, critical thinking is "reasonable reflective thinking focused on deciding what to believe or do" and in deciding what to believe or do "one is helped by the employment of a set of critical thinking dispositions and abilities." Hence, it is these dispositions and abilities that "can serve as a set of comprehensive goals for a critical thinking curriculum and its assessment."[86] The dispositions of critical thinkers are as follows:[87]

> 1. Care that their beliefs be true, and that their decisions be justified; that is, care to "get it right" to the extent possible;
>
> 2. Care to understand and present a position honestly and clearly, theirs as well as others';
>
> 3. Care about every person. (This one is an auxiliary, not constitutive, disposition. Although this concern for people is not constitutive, critical thinking can be dangerous without it.)

And critical thinking abilities are as follows:[88]

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[85] Ibid., 10.

[86] Ibid., 15.

[87] Ibid.

[88] Ibid., 16-17.

(Basic Clarification, 1 to 3)

1. Focus on a question

2. Analyze arguments

3. Ask and answer clarification and/or challenge questions

(Two Bases for a Decision: 4 and 5)

4. Judge the credibility of a source

5. Observe, and judge observation reports

(Inference, 6 to 8)

6. Deduce, and judge deduction

7. Make material inferences (roughly “induction”)

8. Make and judge value judgments

(Advanced Clarification, 9 and 10)

9. Define terms and judge definitions, using appropriate criteria

10. Attribute unstated assumptions

(Supposition and Integration, 11 and 12)

11. Consider and reason from premises, reasons, assumptions, positions, and other propositions with which they disagree or about which they are in doubt, without letting the disagreement or doubt interfere with their thinking ("suppositional thinking")

12. Integrate the dispositions and other abilities in making and defending a decision

13. Proceed in an orderly manner appropriate to the situation

14. Be sensitive to the feelings, level of knowledge, and degree of sophistication of others

15. Employ appropriate rhetorical strategies in discussion and presentation (oral and written), including employing and reacting to "fallacy" labels in an appropriate manner.

> Examples of fallacy labels are "circularity," "bandwagon," "post hoc," "equivocation," "non sequitur," and "straw person"

These are then the sub-goals of a curriculum which aid the final goal of "reasonable reflective thinking focused on deciding what to believe or do." Of course, the crucial question from a curricular point of view is how are these sub-goals to be achieved and realized in an educational setting. What are the actual strategies for inculcating/ developing these dispositions and abilities, according to Ennis?[89]

Curricular strategies, methods

Unlike many other philosophers of education, Ennis has developed a detailed critical thinking textbook for use by teachers and students in order to foster critical thinking. We can safely take this textbook as his recommendation of how to cultivate critical thinking dispositions and abilities. This is supported by his statement in his textbook that "[t]he primary purpose of this book is to help you decide in a reasonable way what to believe and what to do."[90] The focus of the curricular methods as presented in the textbook is on identifying, analyzing and assessing arguments. Lest there is any doubt about this focus, Ennis makes it quite clear:

> You depend on your beliefs, whether you are deciding what to do or deciding what to believe. Decisions about belief, then are fundamental. A key feature in decisions about beliefs is often an *argument*. You will be *examining others' argument and developing your own.*[91]

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[89] I am indebted to M. Morteza for the pertinent question of *how* the proposed programs lead to the cultivation of the intellect.

[90] Robert H. Ennis, *Critical Thinking* (Upper Saddle River: Prentice Hall, 1996), 1.

[91] Ibid., 1-2 (emphasis added).

Chapters in Ennis' textbook are organized around the critical thinking abilities listed above. For example, Chapter 1 is entitled 'Introduction: Decision and Argument,' Chapter 2 'Argument Analysis: Identifying Conclusions and Reasons,' Chapter 3 'The Credibility of Sources,' Chapter 4 'Observation,' Chapter 5 'Deduction: Class Logic' and so on until Chapter 14 which is entitled 'Applying Critical Thinking.'

As an overall checklist for critical thinking, Ennis recommends checking for **F**ocus, **R**easons, **I**nference, **S**ituation, **C**larity and **O**verview. The 'FRISCO' approach, in short:

> **Focus:** The first thing to do in approaching any situation is to figure out the main point, the issue, question, or problem. Ask yourself such questions as 'What is going on here?' . . . What is this person trying to prove? . . . In an argument, the focus is ordinarily the conclusion. Consider the argument . . .
>
> > My client is innocent of the charge of murder because she was defending herself against attack.
>
> The conclusion—and the focus—is 'My client is innocent of the charge of murder.'
>
> **Reasons:** You must know the reason(s) offered in support of a conclusion and decide whether the reasons are acceptable before you can make a final judgment about an argument. In the argument we have been considering, there is only one reason given: 'She was defending herself against attack.' It alone is offered in direct support of the conclusion.
>
> **Inference:** Suppose that the reason were true. Would it have been sufficient to establish the conclusion? . . . The question under the *I* in FRISCO is whether the reason, if it is acceptable, would support the conclusion, and how strongly. In the jury situation, it seemed to me that the reason, even though it was not acceptable, would have been sufficient, that is, that the inference is a good one. To say that the inference is a good one is to say that the step from the reason (s) to the conclusion is a reasonable one; in other words, that it is one we are

entitled to make. In still other words, the reasoning (though not necessarily the reason) is acceptable.

Situation: When thinking is focused on belief and decision, it takes place in some broad situation that gives it significance and provides some of the rules. The situation includes the people involved and their purposes, histories, allegiances, knowledge, emotions, prejudices, group memberships, and interests . . . These things are relevant not only to the significance of the thinking activity and some of the rules that guide it, but also to the meaning of what the thinker is doing or judging. A crucial feature of the courtroom situation was that the burden of proof was on the State, not the defense attorney. The State had to prove its case beyond a reasonable doubt. The defense attorney had to show only that his case was a reasonable possibility.

Clarity: When you write and speak, it is important to be clear in what you say. . . The defense attorney's conclusion ('My client is innocent of the charge of murder') and reason ('She was defending herself against attack') seemed clear to me in that situation. But in judging the inference from the reason to the conclusion, it was important to know what he meant by the word attack. If he had meant the word broadly, so that verbal abuse counted as an attack, then I believe that the inference would not have been a good one. That is, the reason, if true, would not have been enough to establish the conclusion . . . On the other hand, if by the word *attack* he meant attempted physical violence, then the inference from reason to conclusion seems to be more plausible . . . A good clarity slogan is "*Say what you mean, mean what you say*, and try to get others to do so as well."

Overview: The sixth element in critical thinking, overview, calls for you to check what you have discovered, decided, considered, learned, and inferred. Put it all together and see whether it all still makes sense.[92]

Each of these elements serves as a broad guideline for reflecting on one's thinking. In Ennis textbook, key concepts and terms are defined, followed by a listing and explanation of criteria for their application and some examples. Each chapter ends with a series of exercises with true or false questions and short, medium and long answer questions where students can apply the concepts discussed. For example, Chapter 2: Argument Analysis: Identifying Conclusions and Reasons, begins with a description of what an argument is and how to identify its elements: "Before you can be confident in your judgment about an argument, you must know what the argument is . . . The first thing to do is to determine the focus (the *F* in *FRISCO*) . . . So the first thing to do is to identity the conclusion. Generally, the second thing to do is to identify the reasons (the 'R') offered in support of the conclusion. In preparation for judging the inference (the 'I'), it is also usually helpful to make a deliberate effort to see how the conclusion and the reason fit together."[93]

The chapter then has a description of a particular courtroom trial that the author was part of with an example of summary arguments. The text then introduces criteria for identifying conclusions, such as 'therefore,' 'hence,' 'thus,' 'so,' 'it follows that,' and 'the following is my conclusion.' This explanation is followed by true/ false questions and short answer questions. The pattern of the rest of the chapters is roughly the same.

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[92] Ibid., 5-8.

[93] Ibid., 17.

The beginning chapters are focused on identifying arguments and the later chapters on appraising arguments. Chapter 2 is basic. Later chapters are much more intricate making lots of fine distinctions and introducing students to numerous criteria for identifying and appraising a variety of arguments, deductive and inductive (inference to the best explanation). This is essentially Ennis's educational program for the development of critical thinking in students. Presumably, the various readings, explanations, examples and exercises are designed to foster the abilities and dispositions of a critical thinker (as outlined by him and listed on pages 47 and 48 above).

Evaluation

Ennis' program for critical thinking has tremendous value. His critical thinking textbook is a vast improvement over traditional logic and critical thinking texts that simply emphasized deductive and inductive arguments and their attendant fallacies.[94] Though early on Ennis began with a very narrow definition of critical thinking as one of "the correct assessing of statements" his current definition, "reasonable, reflective thinking focused on what to believe and do," is much broader and perhaps much more reflective of rationality. Ennis does not directly address what he means by 'reflective thinking' but Dewey, as noted earlier, defined it as "[a]ctive, persistent, and careful consideration of any belief or supposed form of knowledge in the light of grounds that

[94] See for instance, Max Black, *Critical Thinking: An Introduction to Logic and Scientific Method* (New York: Prentice-Hall, 1952).

support it and the further conclusions to which it tends."[95] In Ennis, as noted earlier, we see a definite emphasis on examination of evidence, inferences and conclusions.

We would rightly consider a person rational (at-least in part) if he/she engaged in an appropriate amount of such thinking in the appropriate circumstances. If a person never or seldom engaged in such examination we would rightly call that person irrational. Ennis has rightly added dispositions necessary for calling someone a critical thinker as when he says that critical thinkers 'care that their beliefs be true and that their decisions be justified' for example. If individuals didn't care that their beliefs were true we would be hesitant to consider them critical thinkers or rational thinkers in general, though we might consider them critical and rational in specific circumstances. Furthermore, as far as I know, his is the most detailed account of necessary dispositions and abilities in the critical thinking literature. Each disposition is further broken down into sub-dispositions. Under Disposition 1, for example, 'Care that their beliefs be true and that their decisions be justified' Ennis lists five sub-dispositions:

a) Seek alternative hypotheses, explanations, conclusions, plans, sources, etc.; and be open to them
b) Consider seriously other points of view than their own
c) Try to be well informed
d) Endorse a position to the extent that, but only to the extent that, it is justified by the information that is available.
e) Use their critical thinking abilities.[96]

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[95] Dewey, *How We Think*, 9.

[96] Ennis, "Critical Thinking: Reflection and Perspective: Part 1," 15.

Each ability is further broken down into sub-abilities, and / or criteria as in the ability to 'Observe, and judge observation reports':

a) Minimal inferring involved
b) Short time interval between observation and report
c) Report by the observer, rather than someone else (that is, report is not hearsay)
d) Provision of records
e) Corroboration
f) Possibility of corroboration
g) Good access
h) Competent employment of technology, if technology applies
i) Satisfaction by observer [97]

In addition to dispositions, abilities and criteria, Ennis also rightly includes the necessity of good judgment in applying the criteria: "One cannot expect the application of criteria to yield a result automatically, except in mathematics and deductive logic . . . So good judgment in applying criteria is needed as well." Finally, "[c]riteria used in making a good judgment are generally aided by Sensitivity, Experience, Background Knowledge and Understanding of the Situation that is "SEBKUS."[98] With respect to thoroughness and detail, Ennis' breakdown of critical thinking into dispositions, abilities and criteria is enviable.

[97] Ibid., 16.

[98] Ibid., 9.

A targeted curriculum: efficiency

The project as a whole, that of having a curriculum for the improvement of thinking and reasoning skills through a curriculum that *targets* thinking skills is itself laudatory. If there are indeed general thinking dispositions (e.g. caring that one's beliefs are in general true) and general abilities (e.g. ability to identity arguments and analyze their constituent parts, premises, inferences, conclusions) then it makes eminent sense to target these directly instead of trying to improve them somewhat indirectly and intuitively through a curriculum, say, on the disciplines.[99] If the aim of teaching and learning the disciplines is to improve *general* thinking skills, then it is not at all an efficient method for improving them.[100] Moreover, proceeding somewhat intuitively with regards to what these general skills are and somehow hoping that they will be improved through subject matter runs the great of risk of missing them entirely. Hence targeting them, through a tailor made curriculum seems eminently worthwhile.

Specific and detailed goals hence specific curricula and sharper assessment

The detail in Ennis' account of critical thinking is very helpful, in part. His pain staking work in further analyzing dispositions and abilities makes very clear exactly what it is that is required of true critical thinkers. While it is very helpful to know that critical thinkers "[c]are that their beliefs be true and that their decisions be justified," it's even more important to know what this entails, as Ennis makes clear: that they seek alternative hypotheses and explanations; that they seriously consider other points of

[99] A lively debate surrounds whether there are in fact general thinking skills. For a recent discussion, see Stephen Johnson, Harvey Siegel, and Christopher Winch, *Teaching Thinking Skills*, 2nd ed. (London: Continuum, 2010).

[100] I am indebted to Monsour Morteza for this point.

view than their own and that they only endorse a position to the extent and only to the extent that it is justified by the information available. These further subdivisions can serve as meaningful and specific goals for a curriculum designed to fostering effective, critical, rational, thinking. These detailed breakdowns can also serve as specific assessment criteria for a curriculum geared towards the improvement of thinking. [101]

His criteria are also very helpful. While a critical thinker 'Observes and Judges observation reports' it is helpful to know the criteria for doing this: minimal inferring, short time interval between observation and report, corroboration, etc. Ordinarily, we tend to do evaluate and judge somewhat intuitively. But Ennis has helped to make these intuitions explicit and conscious which again helps to set specific goals for a curriculum and design specific assessment instruments.

Skills in identifying and assessing arguments

Certainly, part of what it means to think critically, rationally, reflectively, effectively, is that one can identify a conclusion in an argument, the reasons for the argument and assess the strength of reasons for the conclusion. Given a paragraph or a conversation or a scholarly work, if a person is not able to organize the ideas in terms of claims and evidence and is not able to ask pertinent questions regarding the warrant of claims, we would be reluctant to call this person a critical, rational thinker. Part of being critical, rational, reflective is to ask questions of evidence. This in itself seems reasonable because claims that have evidence are more likely to be true than claims based on very poor evidence (e.g. hearsay) or no evidence at all (merely personal conviction, biases,

[101] This is not an accident. Ennis' PhD dissertation was on assessment of critical thinking. See Robert Ennis, "Critical Thinking: Reflection and Perspective: Part 1," 6.

distorted observations, mis-readings, rhetoric). Evidence tracks truth hence being able to ask questions regarding evidence is a mark of a rational person and a critical thinker. There is tremendous value in being able to organize information that one receives and that one presents in terms of the schema of an argument: reasons, inferences and conclusions. So much of learning in schools emphasizes understanding and constructing arguments. In a philosophy class it isn't sufficient to know Descartes claimed 'I think therefore I am.' If a student only knew that he would not have learned much philosophy. But it is also important to know and understand *why* Descartes makes that claim, his *reasons* for this claim. In science, it's one thing to know that litmus paper turns blue in acidic conditions but better to know the reasons why. Academic papers in school often emphasize identifying and appraising arguments. This is what is meant, in part, by teachers urging students to write *analytical* papers rather than merely descriptive ones. Having the schema of an argument may also help students organize papers more logically (i.e. here is what I am arguing for and here are my reasons). Skills to evaluate arguments is also useful for lawyers and debaters and in many ways argument evaluation is exemplified in a court of law (hence, Ennis' running example of summary arguments in court). Argument assessment skills are also essential for such tests as the SAT. And it is much better if students have a ready schema, with slots for evidence, conclusions and judgments of strength of inference, so that they can consciously and with ease apply the schema to any given content.

Is a program in argument identification and assessment necessary in the first place?

However, like many other contemporary scholars, Ennis does not outline problems students face in thinking critically. This raises the question of the need of a critical thinking curriculum (as outlined by Ennis). Instead, he says: "Although

everybody is already at least somewhat proficient at critical thinking, the material here should help you improve your abilities, to be reflective about them, and to develop your critical thinking dispositions." No source is provided as to how we know people are already somewhat proficient at critical thinking but, more importantly, no documentation is provided to show to what extent people are *not* proficient in thinking critically and in which specific areas. From a curricular rationale point of view there is a massive step missing here. Without a clear understanding of specific problems students face in reasoning it is virtually impossible to know whether (i) critical thinking (as defined) is at all necessary, and (ii) whether taking a course in critical thinking will make a difference. This state of affairs indicates a prior commitment to the value of a critical thinking course and a prior conviction that it will make a difference. Data can be gathered post facto.

The exclusive focus on arguments

While the goal of critical thinking defined as "reasonable and reflective thinking focused on deciding what to believe or do" is laudable and reflective of rationality, the educational means proposed by Ennis to achieve this goal relies almost exclusively on improving competencies in argumentation. While the various abilities which are said to aid critical thinking are broader in scope than merely argument identification and assessment, such as for example, abilities to focus on a question, ask and answer clarification questions, judge the credibility of a source and others they all appear to be in the *service* of argument identification and assessment. The end goal appears to be evaluation of given claims with respect to their evidence and the provision of appropriate evidence when making claims. Following from these abilities is a textbook curriculum (definitions, explanations, examples and exercises) which essentially teaches

students how to identify premises, inferences, conclusions and provides guidelines for appraising arguments. As noted earlier, Ennis makes the focus on arguments quite clear at the beginning of his textbook: "A key feature in decisions about beliefs is often an argument. You will be examining others' argument and developing your own."[102] This focus is also eminently clear in the FRISCO approach to critical thinking that he suggests which is essentially a checklist for examining arguments: **F**ocus, **R**easons, **I**nference, **S**ituation, **C**larity and **O**verview.

Argument analysis and appraisal is just fine in its own right and has a definite place in education as discussed above. It is also an ingredient in rationality. The key question from the perspective of the present work is, 'Is the focus on argument assessment *sufficient* for the cultivation of rationality, good thinking, reflective thinking, in general?' Would we consider a person rational who could *only* analyze arguments and appraise them? There appears to an enormous gap between the ability to identify and appraise arguments and the abilities and dispositions we would consider constitutive of a fully rational person. A rational person, we might say, is one who actually thinks rather than one who simply goes through the motions or someone who plans before undertaking a task or who is mindful of consequences of courses of action or who proceeds with foresight or one who does not let his passions cloud his judgments. It is not at all clear that all of these ways of being rational are simply ways of competently assessing and presenting arguments, reasons and evidence.

[102] Ennis, *Critical Thinking*, 1-2.

Giving reasons but not reasoning: a problem of reason

With the focus on arguments, the strong implication in Ennis' critical thinking educational program (as presented in his textbook) and indeed in critical thinking programs in general is that problems of reasoning are primarily problems of argument analysis and evaluation. In the previous chapter, several problems of reason were presented. For example, John Locke acutely observed a major 'miscarriage of reason' where the reasoner does not use his reason (instrument, intellect, thinking power) at all but relies on others' reasonings. Two arguments on paper may look exactly the same yet one could simply be the product of parroting someone else's reasoning. The real issue here is not the argument *per se* but the lack of true *engagement*—with the lack of true reasoning on the part of the reasoner despite presenting an argument. Much the same is the case in instances of rationalization. Though one gives reasons, one's reason giving activity is being determined not so much by the facts of the matter but by preconceived conclusions. In neither of these cases would we consider persons rational though the arguments they give may be judged quite reasonable according to criteria of good arguments (as presented by Ennis and others). Exclusive attention to quality of arguments may conceal deeper problems of reason and rationality.

As a further illustration of a lack of true engagement despite giving reasons consider an experiment done on Stanford students. Students who had previously indicated that they either strongly believed capital punishment was a deterrent or that it was worthless as a deterrent were given two putatively authentic studies to read (with methods and results sections) on the effects of capital punishment. One study supported their position and the other was contrary to their position. Each participant was given a 'panel' design study (comparing murder rates before and after adoption of

capital punishment) and a 'concurrent' design study (comparing murder rates during the same time period for states with capital punishment and states without capital punishment). For half the subjects it was the panel design that supported their position and the concurrent design that opposed it. For the other half it was the reverse. Nisbett and Ross present the results:

> Subjects found whichever study supported their own position to be significantly "more convincing" and "better conducted" than the study opposing their position. If it was the panel study that supported their position and the concurrent one that opposed it, the subjects could see clearly the superiority of a panel design . . . over the sloppy technique of the concurrent design . . . If it was the concurrent study that supported their position, the subjects could readily appreciate the wisdom of a design that held time period constant, and found no trouble in exposing the flaws in a design that compared one state with itself. [103]

Nisbett and Ross capture this dire situation in a most appropriate metaphor: "Supporting evidence was handled with kid gloves; opposing evidence was mauled." In the footnote they add a humorous but revealing comment: "Any resemblance between the behavior of subjects in this experiment and that of any professional scientist, living or dead, is purely coincidental."

Nisbett and Ross interpret these findings in terms of the tendency to maintain a theory despite contrary evidence. But from the perspective of the present work, where the interest is in reason and reasoning, and from the perspective of the broader view of

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[103] Richard Nisbett and Lee Ross, *Human Inference: Strategies and Shortcomings of Social Judgment* (Englewood Cliffs: Prentice-Hall, 1980), 170.

Even more disturbingly, Nisbett and Ross report:

> After reading about *both* studies—one that supported their initial position and one that opposed their initial position . . . the subjects were *more* convinced of the correctness of their initial position than they were before reading about *any* evidence. Ibid., 171, (emphasis in the original).

the idea of reason as articulated by Morteza and cited in the introduction to this chapter, where "[t]he idea of reason is not limited to argument and evaluation of argument [but] . . . includes reason in itself, the use of reason, the problems of reason, contents, reality, the reasoner, their relationships, and other elements" we can see something much more.[104] First, these are Stanford students who, we would expect, have rather strong skills in argument identification and argument evaluation. In all likelihood, these skills are reinforced in most of their undergraduate courses where there is likely to be an emphasis on 'analytical' and 'critical thinking.' No doubt, if given a test in informal logic/ critical thinking, most would do very well. However, though in all likelihood proficient in argument identification and assessment, in this case, they clearly have great difficulty in objectively assessing the evidence that is presented to them. Evidence that is in line with their prior belief is accepted and evidence which is contrary to their prior belief is rejected. And even more perniciously, they *think* they are being completely objective and rational in rejecting and accepting evidence as they can clearly "see" faults in the design of the study that happens to be contrary to their beliefs and "see" no faults in the study that happens to conform to their beliefs. Their prior belief is hijacking the evidence presented. No matter what is presented, it is being interpreted only in accordance with their prior belief.

Hence, the problem of reason, in this case, is not a problem of a lack of skills in argument assessment. The problem is the *interference* of a prior belief. Furthermore, and also from the perspective of the broader idea of reason, though it looks like they are reasoning in that they are analyzing studies, giving reasons for accepting and rejecting,

[104] See Introduction in Chapter 2, page 45 and Introduction in Chapter 3, page 123 of the present work.

they are not *truly reasoning*. Their reason giving activities are not on the basis of the evidence they see in front of them, i.e. they are not on the basis of what is actually *there,* in reality, since what is there, in reality, is that they are presented with equal evidence for both views. Rather, it is on the basis of the prior beliefs. In other words, reason is not in control but held hostage to the belief. Hence, though they are giving plenty of reasons, they are not really reasoning but *think* they are where their conclusions are being pre-determined by their prior beliefs.

This situation echoes problems of reason noted by Bacon, (indeed, Nisbett and Ross open their chapter with a quote from Bacon) where he says that once the mind adopts an opinion it will draw all things to support it. Even more specifically, it illustrates Bacon's 'idols of the cave,' where a prior belief in the mind colors what enters the mind: "For everyone (besides the errors common to human nature in general) has a cave or den of his own, which refracts and discolors the light of nature." These are grave problems of reason that seem immune to dosages of argument identification and assessment. In Chapter 3, I show how a closely analogous situation obtains in a cultural context where certain cultural beliefs short-circuit reasoning.

Lacking the right dispositions?

Can the above problem of reason be overcome by having the right kinds of dispositions? Ennis rightly points out that critical thinkers have certain dispositions without which they could not be considered critical thinkers, namely that they (i) 'care their beliefs be true and that their decisions be justified' and (ii) 'care to understand and present a position honestly and clearly, theirs as well as others.'' Perhaps having these dispositions may help in overcoming the grip of prior beliefs? But there is nothing in the situation, as described by Nisbett and Ross, to suggest that these Stanford students

don't care that their beliefs be true. In all likelihood, if this experiment were to be repeated, say, in other universities and with other students, we would probably get similar results and it would be a gross generalization to suggest that participants in all these experiments simply didn't care.

Ennis further subdivides the first disposition 'care their beliefs be true and that their decisions be justified' into a) seek alternative hypotheses, explanations, conclusions, plans, sources, etc. and be open to them, b) consider seriously other points of view than their own, c) try to be well informed, d) endorse a position to the extent that, but only to the extent that, it is justified by the information that is available. Unless the criteria for "seek," "consider" and "endorse" are tied to successful outcomes (in which case no one really seeks, considers and endorses unless he gets it right), what is really meant here is that individuals who care that their beliefs be true will "try to seek alternate hypotheses," "try to consider other points of view," "try endorse a position to the extent that, but only to the extent that, it is justified by the information that is available."

Once again, there is nothing in the situation to suggest that Stanford students are not trying to seek alternative hypotheses and explanations, and trying to consider seriously other points of view. From all appearances, it seems they are indeed trying since they are not simply rejecting evidence that is contrary to their beliefs but providing putatively legitimate reasons for their rejection, namely that the methods by which the evidence was collected was faulty. This state of affairs suggests that, at-least to themselves, they have good reasons to reject evidence that happens to be contrary to their beliefs. In short, there is nothing in the situation to suggest that their reasonings are not sincere. Rather, the real difficulty lies elsewhere, deep within themselves—a

difficulty that they are not even aware of but which taints their interpretations despite their best intentions.[105]

Dispositions: how are they developed?

The dispositions (i) 'care their beliefs be true and that their decisions be justified' and (ii) 'care to understand and present a position honestly and clearly, theirs as well as others'' are, of course, laudable. And since these dispositions are part of the ultimate goals of a critical thinking curriculum, another curricular question arises: 'How are these dispositions to be cultivated? As pointed out above, Ennis' critical thinking curriculum (with respect to the methods) essentially involves identifying and appraising arguments. Can these dispositions be developed by identifying and appraising arguments? To care that one's beliefs be true, if one doesn't care already, seems to involve a massive transformation of a person's entire outlook and being. And similarly with considering seriously other points of view than just one's own. These dispositions seem to require humility, empathy, imagination, willingness, autonomy and scrutinizing to the nth degree one's own convictions and worldviews. If a person does not already have these attitudes and character traits, is the cure a good dose of argument analysis and evaluation?

Here, I am alluding to the overlooked gap between *knowing how* and *wanting to*. For example, we don't normally think knowing how to lose weight generates a

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[105] Average scores, of course, may hide deeper interactions. Is it possible that within the group of experimental subjects those who care that their beliefs be true tend to interpret findings objectively and those who don't care interpret them in light of their prior beliefs? This is possible but perhaps unlikely. In any case, a refined experiment could be constructed by introducing a second variable, namely 'disposition' (those who care vs. those who don't care). Results could then be examined for the interaction between 'disposition' (those who care vs. those who don't care) and 'interpretation' (objective vs. tainted) to see of those who care interpreted evidence objectively.

disposition to want to lose weight and live a healthy lifestyle. Those who join weight loss classes are those who already want to lose weight. Something more is required to want to lose weight than merely knowing how to lose weight. To learn how to stop smoking is something altogether different than not wanting to smoke. In summary, knowing how to assess arguments is insufficient for cultivating the critical thinking dispositions outlined by Ennis. I return to this difficulty in the next section where Richard Paul's critical thinking program hinges on the cultivation of appropriate dispositions.

More than knowing how: for the right reasons, at the right time, in the right manner

The critical thinking curriculum as outlined by Ennis (argument identification and analysis) appears to be insufficient for rationality for other reasons as well. Aristotle, in his *Nicomachean Ethics,* in the context of a discussion of practical wisdom, notes that moral virtue is concerned with passions (fear, confidence, desire, anger, pity, pleasure, pain) and actions and in these there is excess, defect and the intermediate. And the mark of virtue is "to feel them at the right times, with reference to the right objects, towards the right people, with the right motive, and in the right way [Nicomachean Ethics, 1106b]."[106]Without taking on board Aristotle's theory of the mean, there is an important point being made here with respect to rationality.

In Ennis' critical thinking textbook we are given situations (e.g. courtroom proceedings) and arguments (e.g. defense attorney's arguments) to analyze. Let's assume that after a thorough course in identifying and analyzing arguments we leave

[106] Richard McKeon, ed. *The Basic Works of Aristotle* (New York: Modern Library, 2011).

the confines of the lecture room and enter the real world. In daily life, we come across lots of different arguments, by lots of different people, in lots of different circumstances, but there is no textbook note to say focus on *this* argument and not that one. A person who analyzed every argument that came his way during the day, from one given by a vagrant to work, one given in a commercial on the radio (buy this product and you will get the girl), one given by a student, one given by a spouse (if you come late, we won't have time), one given by a grandmother (treat your wife well if you want to keep her) would be considered irrational, almost mad. The disposition to care for truth, if unchecked, may, in fact, make matters worse. Taking a clue from Aristotle, we might say, what is desirable from the point of view of rationality, is not just the ability and the disposition to evaluate arguments but do so at the right time, towards the right arguments, with the right motive, in the right manner and many other 'rights.' And what is required in achieving this (reasonable action overall) is an inquiry into which argument, what time, in what manner, with what kind of motive and the like. This might seem like a philosopher's quibble in that, of course, what is required is some common sense inquiry. But the quibble illustrates an important point. Unless we make these judgments unthinkingly, which also would be irrational, the inquiry into these matters (of appropriateness) is of an entirely different order than an inquiry into the merits of an argument. It implies a broader notion of the *use* of reason than just one of assessing reasons.

As mentioned earlier, Ennis recognizes that critical thinking takes place in specific situations and it is these situations that provide the rules: "When thinking is focused on belief and decision, it takes place in some broad situation that gives it significance and provides some of the rules." For example, Ennis points out: "A crucial

feature of the courtroom situation was that the burden of proof was on the State, not the defense attorney. The State had to prove its case beyond a reasonable doubt. The defense attorney had to show only that his case was a reasonable possibility."[107] The courtroom situation provided the rules for how arguments are to be evaluated. But herein is the difference. In the courtroom case, the rules are *provided*. In daily life, the rules are not always provided but have to be *discovered* through inquiry. And this process of discovery is not a process of evaluation of arguments but it is nonetheless a process of reasoning. Furthermore, the discovery begins with an inquiry—an inquiry into which is not one of merely giving reasons. Reasoning is more than giving reasons.

Overall pedagogy

A final note on the overall teaching approach in Ennis' program. The pedagogy in each of the chapters begins with an introduction to the chapter, followed by definition of key terms and concepts and /or presentation of and explanation of criteria, then a summary of the chapter. After the end of the chapter, students are encouraged to do a series of exercises so that they can practice their newly learnt skills. These exercises are in the form of true/ false, and short, medium and long answer format. Here are some examples from Chapters 1, 2 and 3:

True / False:

> 1:15: When examining an argument, it is generally a good idea to try and identify the conclusion right away.

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[107] Ennis, *Critical Thinking*, 7.

1:17: Asking whether the reasons are themselves believable is generally confusing and a waste of time.

1:21: In deciding whether to believe a conclusion, the primary issue is whether the reasons are acceptable.

Short answer exercises:

For each of the following items, apply one or more of these labels [A-E] (remember that in applying the label you are not committed to calling the item a fallacy)

A. Transfer
B. Appeal to authority
C. Testimonial
D. Personal-attack argument
E. No reason for thinking that it is any of the above

3:20: A friend says, "The early-morning Amtrack train is the best way to get to Chicago, all things considered."

3:21: Another friend says, "My sister, who should know because she sometimes rides that train, tells me that the early morning train is not the best way to get to Chicago."

3:22: The first friend says. "Don't pay any attention to her---she is prejudiced."

Medium length answer exercises:

1:24: Suppose that the defense attorney had been using the word *attack* to mean the giving of either verbal or physical abuse, and that he had shown that the victim was calling the defendant nasty names. How would that affect your judgment as a juror about whether the reason was sufficient to establish the innocence? Why?

Longer answer exercises:

2:113: Find an argument in a short editorial, a "Dear Abby" selection, or a letter to an editor.

a. Underline the final conclusion twice

b. Bracket the propositions and assign letters to them.

c. Represent the argument pictorially in an arrow diagram.

Several observations can be made on this pedagogy. Ennis' textbook itself is about four hundred pages and the organization and size is quite typical of American textbooks which focus on skills and provide numerous exercises for practicing skills. As a comparative note, Japanese textbooks on the other hand tend to be very slim emphasizing key principles and not details. Stigler and Heibert note, for example, that American teachers, in the context of mathematics, emphasize skills whereas Japanese teachers emphasize seeing relationships between ideas. [108] Hence, is it possible that merely cultural elements have driven the very design of a textbook on 'critical thinking' that urges the examination of one beliefs and assumptions? But perhaps the textbook is well suited for an American audience?

More importantly, there is the question of need raised at the beginning of this chapter. For example, how many students would get the following question wrong?

> 1:17: Asking whether the reasons are themselves believable is generally confusing and a waste of time.

And the same for many of the explanations and exercises in the text. Perhaps some aspects of critical thinking, out of the many aspects outlined by Ennis, may not need to be taught at all as students may already be well versed in them. What would be useful is a study of areas of need. Where precisely do students have difficulty? Is it in

[108] James W. Stigler and James Hiebert, "Teaching is a Cultural Activity," *American Educator* Winter 1998, 2.

organizing material, in making certain kinds of inferences or in assessing reasons? If the latter, what about assessing reasons is difficult? A study along these lines could provide a rationale for the inclusion of specific subject matter in a course on critical thinking. Finally, do we know whether these exercises are efficacious? How useful is it for a student learning to ignore non-relevant comments to learn to *label* them, as when the textbook exercise asks students to label, A, B, C, or D (as above) the following statement:

> 3:22 The first friend says. "Don't pay any attention to her---she is prejudiced."

Does labelling help one learn to avoid errors? The design of the textbook and hence the educational program appears to be based more on the elements of critical thinking (as defined) rather than on a careful examination of what is needed and what will actually make a difference in students' learning.

In summary

Ennis' treatment of critical thinking, as mentioned towards the beginning of the chapter, is perhaps the most detailed analysis of critical thinking in contemporary philosophy of education. Critical thinking, according Ennis is "reasonable reflective thinking focused on deciding what to believe or do." This ideal is aided by certain abilities and dispositions, extensively outlined by Ennis, which can serve as goals for a critical thinking curriculum. His own textbook is a suggested program for cultivating these abilities and dispositions. The focus and overriding emphasis in the textbook is the development of skills in argument identification and assessment. Argument analysis and assessment is an essential aspect of rationality and is especially valuable for academic learning. Having an explicit schema for identifying and assessing

arguments facilitates comprehension of academic subject matter and certainly the writing of academic papers.

While the overall ideal of critical thinking is laudable and reflective of rationality, it is unclear how an educational program dedicated to the development of abilities in argument identification and evaluation leads to 'reasonable and reflective thinking focused on what to believe and do.' Reasonable and reflective thinking is not exhausted by these abilities. Considering arguments themselves, reasonable thinking seems to demand inquiry into, for example, 'which arguments' and in 'what manner' but these are not inquiries into argument evaluation.

Furthermore, for example, Stanford students purportedly are assessing evidence. But though they are giving reasons and defending their critique of studies, something seems to be drastically amiss as their reason giving activities are not actually based on the merits of the evidence but on prior belief. Hence, from another, wider perspective of reason and its uses, a perspective that includes in its conception such elements as the reasoner, reason, reality, uses of reason and contents, Stanford students aren't really reasoning at all, as their reason giving activities are hijacked by their prior beliefs—their reason is not in charge and their evaluations are not based on what is there, in reality, but on what is merely in their minds.

Finally, there appears to be a major gap between a program in argument assessment and the cultivation of laudable dispositions such as caring that one's beliefs be true. The latter requires deep transformation of the self if one does not have such dispositions already. It is unclear how dispositions can develop out of exercises in argument identification and evaluation. Though Ennis, over the course of a few years, has refined his conception of critical thinking from one confined to 'the correct assessing

of statements' to 'reasonable and reflective thinking focused on deciding what to believe or do,' the underlying approach, the suggested educational program for critical thinking is very much focused on just that, assessment of statements. This approach unduly limits the scope of true reflective thinking, reasonableness, reasoning and rationality. In the next section of the chapter, I present an educational program in critical thinking which recognizes some of the problems of critical thinking mentioned here and attempts to overcome them through a slightly different program.

Chapter 2.2

Rationality Through Fairminded Critical Thinking

Introduction

Concerned that critical thinking, as it was being defined in the literature, emphasized mastery of arguments, which could then be used to simply reinforce existing preconceptions, Richard Paul set out to provide a broader view of critical thinking, 'fair-minded critical thinking'— a sophisticated and intricate proposal for cultivating critical thinking that seeks to overcomes self-centered perspectives. In this section of the chapter, I begin by noting problems in thinking and reasoning that Paul notes which provide a rationale for his conception. I then move to a critical analysis of his conception of critical thinking and the suggested educational program/methods for cultivating fairminded critical thinking. In my assessment, I question whether he in fact transcends the argument emphasis in critical thinking, whether the educational program he suggests is necessary, in the first place, and whether the program leads to the cultivation of rationality in education.

Problems of reason

While Ennis, in the previous section, claimed "everybody is already at least somewhat proficient at critical thinking," Richard Paul begins by stating grave problems in thinking:

> The mind doesn't naturally grasp the truth. *We don't naturally see things as they are.* We don't automatically sense what is reasonable and what is unreasonable. Our thought is often biased by our agendas, interests, and values. We *typically see things as we want to*. We twist reality to fit our preconceived ideas . . . In addition, much of our perspective is unconscious

> and uncritical and has been influenced by many forces—including social, political, economic, biological, and psychological influences. Selfishness and narrow-mindedness are deeply influential in the lives of most people.[109]

Paul forthrightly states, for example, that though everyone thinks and it is in our nature to do so, "much of our thinking, left to itself, is biased, distorted, partial, uninformed, or down-right prejudiced."[110] As briefly mentioned in Chapter 1, Paul categorizes problems in thinking into problems of 'egocentric thinking' and 'sociocentric thinking':

> Egocentric thinking results from the unfortunate fact that humans do not naturally consider the rights and needs of others. We do not naturally appreciate the point of view of others nor the limitations in our own view . . . We do not naturally recognize our egocentric assumptions, ways we use information, the egocentric ways we interpret data, the source of our egocentric concepts and ideas, the implications of our egocentric thought. We do not naturally recognize our self-serving perspective.[111]

Sociocentric thinking results from individuals uncritically internalizing "the dominant prejudices of their society or culture." This is the state of being "culture bound" and includes such problems as: "The uncritical tendency to place one's culture, nation, religion above all others . . . The uncritical tendency to select self-serving positive descriptions of ourselves and negative descriptions of those who think differently from us . . . The uncritical tendency to internalize group norms and beliefs, take on group

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[109] Linda Elder and Richard Paul, *Guide to Critical Thinking* (Tomales: Foundation for Critical Thinking Press, 2009), inside cover (emphasis in the original).

[110] Richard Paul and Linda Elder, *The Miniature Guide to Critical Thinking Concepts and Tools*, 2.

[111] Ibid., 21

identities, and act as we are expected to act—without the least sense that what we are doing might reasonably be questioned . . . The tendency to blindly conform to group restrictions (many of which are arbitrary or coercive) . . . The failure to think beyond the traditional prejudices of one's culture."[112] In summary, we use 'psychological standards' in our thinking instead of intellectual ones such as "it's true because I believe it," "it's true because we believe it," "it's true because I want to believe it," "it's true because I have always believed it" and "it's true because it is in my selfish interest to believe it."[113]

This is an impressive list of problems in thinking most of which could seriously jeopardize good reasoning and thinking. It is an open question whether his list of problems is exhaustive or representative of problems surrounding reason. For example, he fails to note what Locke noted, the tendency of individuals not to think/reason at all. Nonetheless, Paul is on the mark with respect to his overall approach in beginning with problems. Very few other philosophers of education begin with problems. Starting with problems sets the stage for Paul (and for us) for a rationale for an *education* in reasoning: "thinking *left to itself* is biased, distorted, partial, uninformed or downright prejudiced." Hence, "[e]xcellence in thought . . . must be systematically cultivated."[114] We now have at-least some rationale for a program in education for cultivating good thinking/ reasoning. We also have some potential outcomes as measures for the success of the educational program, namely, individuals who go through the program will be less

[112] Ibid., 21

[113] Ibid.

[114] Ibid., 2 (emphasis added).

egocentric and less socio-centric in their thinking in that they will be more likely to think beyond their own prejudices and beyond of their cultures' prejudices. Starting with problems has the virtue of providing a focus to the educational program where the program ideally targets known problems in thinking.

Goals: Fairminded critical thinking

Given problems in thinking and reasoning, the goal, according to Paul, is "critical thinking." Critical thinking is:

> self-directed, self-disciplined, self-monitored, and self-corrective thinking. It requires rigorous standards of excellence and mindful command of their use. It entails effective communication and problem solving abilities and a commitment to overcoming our native egocentricism and sociocentricism. [115]

This view of critical thinking is exemplified by fairminded critical thinkers who are to be distinguished from other kinds of thinkers, namely the 'naïve thinker' and 'the selfish critical thinker.' Naïve thinkers "don't see why it is important to work on their thinking. They don't want to be bothered with developing their minds." Selfish critical thinkers "are people who use their thinking to get what they want, without considering how their actions might affect other people. They are good at thinking, and they know it. But they are also very selfish. They may be greedy and unkind as well." In contrast, "[f]airminded critical thinkers work to improve their thinking whenever they can. They want things for themselves, but they aren't selfish. They want to help other people. They want to help make the world better for everyone. They are willing to give things

[115] Paul and Elder, *The Miniature Guide Critical Thinking Concepts and Tools*, 2.

up to help others (when it makes sense to). They don't always have the right answers, but they work to improve their thinking (and action) over time."[116]

As is clear from the above description of thinkers, critical thinking is linked to certain character traits. Paul makes these character traits explicit and calls them 'intellectual habits or traits' and they form an integral part of his conception of fairminded critical thinkers. It is the development of these character traits that appear to be the final goals of fairminded critical thinking. According to Paul, there are eight such desirable character traits: 'intellectual humility,' 'intellectual autonomy,' 'intellectual integrity,' 'intellectual courage,' 'intellectual,' 'perseverance,' 'confidence in reason,' 'intellectual empathy,' and 'fairmindedness.' The trait of intellectual autonomy, for instance, is:

> Having rational control of one's beliefs, values, and inferences. The ideal of critical thinking is to learn to think for oneself, to gain command over one's thought processes. It entails a commitment to analyzing and evaluating beliefs on the basis of reason and evidence, to question when it is rational to question, to believe when it is rational to believe, and to conform when it is rational to conform.

And fairmindedness, one of the most important character traits in Paul's scheme, is:

> Having a consciousness of the need to treat all viewpoints alike, without reference to one's own feelings or vested interests, or the feelings or vested interests of one's friends, community or nation; it implies adherence to intellectual standards without reference to one's own advantage or the advantage of one's group.[117]

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[116] Elder and Paul, *Guide to Critical Thinking*, 4-6.

[117] Paul and Elder, *The Miniature Guide Critical Thinking Concepts and Tools,* 14-15.

Paul's conception of critical thinking and critical thinkers with their character traits provide an impressive and thorough picture of ideal rational thinkers. Even if thinkers only had rational control over their beliefs, values and inferences it would take them a long way towards becoming first-rate thinkers.

Of course, the all-important question from an educational point of view is 'How do we get there?' How can we cultivate such fairminded critical thinkers? In their *Guide to Critical Thinking*, Linda Elder and Richard Paul state: "This guide focuses on the essence of critical thinking concepts. For teachers it provides a shared concept of critical thinking. For students it introduces critical thinking and provides strategies for developing one's own critical thinking." Hence, we can take the strategies outlined in this guide (and their other related guides) as their prescriptions for the cultivation of critical thinking and, by extension, critical thinkers.

Strategies / educational program to achieve the goals of critical thinking

The fundamentals of Paul's strategies/educational program are built on what he calls 'elements of thought in reasoning.' According to Paul, every case of reasoning can be broken down into eight elements of thought consisting of:

1. Purpose (goals, objectives)
2. Question at issue (problem, issue)
3. Information (data, facts, reasons, observations, experiences, evidence)
4. Interpretation & inference (conclusions, solutions)
5. Concepts (theories, definitions, laws, principles, models)
6. Assumptions (presuppositions, axioms, taking for granted)
7. Implications & consequences

8. Points of view (frames of reference, perspectives, orientations) [118]

These elements lay the foundation for an education in critical thinking. Critical thinking is realized by applying what Paul calls 'universal intellectual standards' to these eight elements of thought. On Paul's view, there are eight intellectual standards:

1. Clarity
2. Accuracy
3. Precision
4. Relevance
5. Depth
6. Logic
7. Significance
8. Fairness

These intellectual standards, according to Paul, "are standards which should be applied to thinking to ensure its quality." They must be taught, and students should be encouraged to apply them to their thinking with the ultimate aim that they become "infused in the thinking of students, forming part of their inner voice, guiding them to reason better."[119] Appling these standards to elements of thought results in a rough checklist of criteria which can be applied to any reasoning situation [next page]:

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[118] Ibid., 3.

[119] Ibid., 8.

Checklist: Criteria for evaluating reasoning (elements of thought)

1. Purpose: What is the purpose of the reasoner? Is the purpose clearly stated or clearly implied? Is it justifiable?

2. Question: Is the question at issue well-stated? Is it clear and unbiased? Does the expression of the question do justice to the complexity of the matter at issue? Are the question and purpose directly relevant to the each other?

3. Information: Does the writer cite relevant evidence, experiences, and /or information essential to the issue? Is the information accurate? Does the writer address the complexities of the situation?

4. Concepts: Does the writer clarify key concepts when necessary? Are the concepts used justifiably?

5. Assumptions: Does the writer show a sensitivity to what he or she is taking for granted or assuming? (Insofar as those assumptions might reasonably be questioned?) Does the writer use questionable assumptions without addressing problems which might be inherent in those assumptions?

6. Inferences: Does the writer develop a line of reasoning explaining well how s/he is arriving at her or his main conclusions?

7. Point of View: Does the writer show a sensitivity to alternative relevant points of view or lines of reasoning? Does s/he consider and respond to objections framed from other relevant points of view?

8. Implications: Does the writer show a sensitivity to the implications and consequences of the position s/he is taking? [120]

[120] Ibid., 12.

Bringing it all together, Paul represents his educational program for cultivating critical thinking as follows:

The Standards	
Clarity	Precision
Accuracy	Significance
Relevance	Completeness
Logicalness	Fairness
Breath	Depth

Standards must be applied to the 'elements of thought' (below)

The Elements	
Purposes	Inferences
Questions	Concepts
Points of View	Implications
Information	Assumptions

As we learn to develop 'intellectual traits' (below)

Intellectual Traits	
Intellectual Humility	Intellectual Perseverance
Intellectual Autonomy	Confidence in Reason
Intellectual Integrity	Intellectual Empathy
Intellectual Courage	Fairmindedness

In summary, standards are applied to elements of thought which then results in intellectual traits. The ultimate goal is the full realization of these traits whose exercise results in fairminded critical thinking.[121]

Evaluation

Paul, unlike many other philosophers of education, is acutely conscious of shortcomings in reasoning and presents them prior to presenting his program. Unlike Ennis' program this gives his program a firm rationale. Humans are egocentric and sociocentric in their thinking. Hence what is called for is 'fairminded' critical thinking. Paul also provides a full picture of the ultimate goals of critical thinking, namely, the intellectual virtues. These are outlined clearly and also seem to capture what we would consider constitutive characteristics of rational persons. What sets him apart from other philosophers of education and others who have constructed curricula for critical thinking is his fresh starting point. He does not start with arguments but rather with 'elements of thought.' Thought is a much more general category providing a wider, more panoramic view of the terrain of the objects of reasoning.

Paul's program also has structural appeal in that he provides a logical, well connected *system* for critical thinking with 'elements of thought,' 'intellectual standards' and 'intellectual virtues' as the key components and where standards are applied to elements leading to the virtues. Metaphorically, I see his system for critical thinking as one where all thought (elements) is to be put through a mill (rigorous standards) which separates the chaff from the kernels (good thinking) eventually leading us to become good millers (we develop intellectual virtues). This makes his program very teachable,

[121] Ibid., 19.

in contrast to the massive amount of detail and overwhelming lists in Ennis' educational program. The program is also completely portable. It's no surprise that many of his works are in the form of booklets and miniature guides. The formula fits in a pocketbook. The system he lays out is also very general and, hence, applicable to many areas but especially to school/academic learning. Students can apply the system to evaluate and critique academic material and to organize the presentation of their own ideas.

Still in the grip of argument and evaluation?

Paul's project starts with an analysis of thought. As mentioned earlier, this is a move in the right direction as critical thinking ought to be more than just production and analysis of argument. If successful, this way of proceeding could substantially expand the realm of critical thinking. However, though Paul starts with this fresh and unique perspective, in presenting his elements of thought and their analyses, it appears that he may still be operating under the grip of argument. Most of his elements of thought/ reasoning can be seen as perfect elements of an *argument* namely premises, inferences and conclusions. Element 3 ('Information') are essentially premises, Element 6 ('Assumptions') are the implicit premises, Element 5 ('Concepts') are further premises or what premises are composed of, Element 4 ('Interpretation & Inference') are the inferences and conclusions. The argument is motivated by Element 1 ('Purpose') and Element 2 ('Question at Issue'). So perhaps argument still haunts in the background. What seems to be somewhat unique is the addition that these elements may reflect narrow perspectives, egocentric and socio-entric thinking, [Element 8 (Point of View)] and that the elements may have 'Implications and Consequences' (Element 7). Elements 7 and 8 are not usually dealt with explicitly in programs that emphasize argument

identification and assessment. Nonetheless, in the final analysis, the underlying organizational schema appears to be that of argument.

Is the recommended educational program needed in the first place?

Paul's educational program essentially consists in specifying for students the elements of thought/ reasoning then encouraging them to apply the suggested intellectual standards on them. For example, after having raised a question (an element of thought) in their reasoning, and after having gathered information (another element of thought), students are encouraged to ask the following questions regarding these elements:

1. Question: Is the question at issue well-stated? Is it clear and unbiased? Does the expression of the question do justice to the complexity of the matter at issue? Are the question and purpose directly relevant to the each other?

2. Information: Does the writer cite relevant evidence, experiences, and /or information essential to the issue? Is the information accurate? Does the writer address the complexities of the situation?

And the same for the rest of the six elements of reasoning. This is essentially the remedy suggested for thinking critically. But we might ask, 'Is there a problem in these areas in the first place?' Do we know whether students have trouble formulating, clear, unbiased, relevant, sophisticated questions? Do we know whether students have trouble citing relevant evidence, experiences, and doing this accurately and appropriately fitting the complexity of situations? If so, no problems *of this sort* have been documented by Paul as part of the rationale for an entire curriculum on evaluating elements of thought. The problems of reasoning documented by Paul are problems to do with egocentricism and sociocentricism. Perhaps students have absolutely no problems formulating good questions and providing sound information. In which case,

entire chunks of the program may be redundant. If so, these suggested remedies are a bit like taking vitamins when we may not really need them. But vitamins are cheap. Education is costly. This, I believe, reveals a larger problem in the very method of designing instruction in critical thinking and in other educational endeavors more generally—the design of educational materials appears to be based primarily on an analysis of the subject matter in question rather than on an inquiry into which aspects of this subject matter in fact needs an educational program for their realization.

Evaluation: sufficient for rationality?

As shown above, what Paul's program calls for is an *evaluation* of elements of thought. For the element of "Information" he recommends asking such questions as "Does the writer cite relevant evidence, experiences, and /or information essential to the issue? Is the information accurate? Does the writer address the complexities of the situation? While evaluation is an important aspect of rationality does it encapsulate all of rationality? Even if we take rationality to be defined by the intellectual virtues Paul himself outlines, *the virtues are much more extensive than the abilities and propensities to evaluate*. For example, the virtue of "having rational control of one's own beliefs, values and inferences" seems to involve so much more than merely evaluating. It seems to involve an exercise of the will, self-control, vigilance, strength and awareness. Having "a consciousness of the need to treat all viewpoints alike, without reference to one's own feelings or vested interests" seems to imply more than acts of evaluation. It seems to involve ethics, concern for others and detachment none of which are acts of evaluation.

In Paul's system for cultivating critical thinking we seem to have a major gap between the recommended educational program (evaluation of elements of thought

according to intellectual standards) and the ideals of rationality. There seems to be an enormous gulf between *skills of evaluation* and the eventual goals of acquiring the virtues. [This is related to the gap between learning evaluation skills and developing dispositions in Ennis' account]. The implication throughout Paul's program is that it is through this evaluation process, that we develop and realize the intellectual virtues. No argument is presented as to how this gulf is to be bridged. It appears to have been assumed that engaging in acts of evaluation according to the intellectual standards will lead to the intellectual traits.

In my mind, this is an illicit assumption. As mentioned in the last section, it is like saying that by learning how to lose weight one will develop the willingness to lose weight. Learning how to swim (ability to evaluate) and learning to want to swim regularly, say for good health (learning to develop a rational character), are different kinds of learnings and it is not clear at all that one seamlessly and readily leads to the other. The first is a matter of skill and the second is a matter of a change in one's outlook and aspirations, which may come about through appreciation of values of health, conviction that swimming leads to health, reordering of one's priorities in life, struggling to overcome counter desires, steadfastness, and perhaps several other things.

Consider an experiment by Ross, Lepper and Hubbard that speaks to the difficulty in realizing intellectual virtues such as intellectual autonomy defined by Paul as 'having rational control of one's beliefs.' In their experiment, participants were presented with the task of distinguishing authentic suicide notes from inauthentic suicide notes. Following these tasks participants were provided with false feedback from the experimenter indicating that they were either below average level, average level or above average level in distinguishing these notes. They were then later told that

the feedback from the experimenter (that they were below average, average or above average in their performance) was actually completely random and had no connection to how they had actually performed. They were also shown the experimenter's instruction sheet which had already pre-assigned them to one of three feedback levels. After this debriefing, subjects were asked to estimate their own actual level of performance in the task, to predict how they might perform on related future tasks and to estimate their abilities at distinguishing authentic from in authentic suicide notes.

Nisbett and Ross report that results "revealed a remarkable degree of postdebriefing perseverance." Even after a thorough debriefing participants who had been assigned to the above average condition "continued to rate their performance and abilities far more favorably" than subjects assigned to the average condition. And subjects assigned to the below average condition "showed the opposite pattern of results, continuing to rate themselves as unsuccessful and lacking ability for the experimental task and for other, similar ones." Nisbett and Ross interpret these results as indicating belief perseverance despite debriefing.[122]

How might we interpret this study from the perspective of the present study, specifically, in light of the question of developing the intellectual virtues? We see here that the participants' own judgments regarding their abilities, are not based on their own estimation of their abilities at all. Rather, they are based on the experimenter's estimation. Why is it that we see this phenomena? In the absence of the experimenter's judgment participants would estimate their abilities based on their own judgments. But

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[122] Richard Nisbett and Lee Ross, *Human Inference: Strategies and Shortcomings of Social Judgment* (Englewood Cliffs: Prentice-Hall Inc., 1980), 176-77.

having inserted the experimenter's judgment in their minds, they can no longer make their own estimation and own judgment. From the perspective of the broader idea of reason mentioned and explicated earlier,[123] the belief implanted by the experimenter is *blocking* their own investigation into the matter—it is blocking their *own reasoning* into their true abilities. Their own reason is now enslaved to the experimenter's. They are not reasoning. They are not using their *own reason* but going by that of the experimenter's. Instead of exploring for themselves their own abilities and seeing what they make of them, they "see" their own abilities through the lenses of the experimenter. Even more disturbingly, they *think* they are reasoning all the while and basing their judgments on their *own* estimations. The real power of lenses lies in their invisibility. The participants are indeed *evaluating* in that they are asking questions regarding their abilities. But unbeknownst to them they are not truly reasoning.

And nothing here turns on whether they happen to hit upon a true estimation of their abilities. Through a process of 'evaluation' they may arrive at a true belief regarding their abilities. But if this evaluation is undertaken under the grips of the belief implanted by the experimenter, it would not count as a belief arrived at by a process of reasoning. Something more needs to be in place before acts of evaluation can be considered true acts of reasoning. Namely, a true engagement of one's own reason. The broader idea of reason includes within it the notion of the instrument of reason and also the reasoner. In this case the reasoner is not truly engaged; he is not truly using his reason. This state of affairs is reminiscent of Plato's succinct remark that we are pulled by cords and strings. And this speaks to the enormous difficulty of realizing the

[123] See above, page 45 and below, page 123 of the present work for the broader view of reason.

intellectual virtues. In the above case, the participants (in the particular case of judging suicide notes) are not in any way intellectually autonomous in that they do not have 'rational control of over their own beliefs.' It's the experimenter who has control over their beliefs.

Now the question remains "*How* do we become intellectually autonomous?" The route prescribed by Ennis and strongly implied by Paul is through critical thinking. And critical thinking according to both is fundamentally an exercise in evaluation of arguments, reasons, questions, and other elements. In fact, Paul, in describing intellectual autonomy continues: "It entails a commitment to analyzing and evaluating beliefs on the basis of reason and evidence." But we see here that it is not a lack of commitment 'to analyzing and evaluating beliefs' on the part of the participants. The participants seem very much committed to giving reasons for their beliefs. Indeed, they think they are doing just that. The problem lies in their *difficulty* in removing the stranglehold of the experimenter on their minds once a belief has been implanted. Moreover, they are not even aware of this difficulty—of the stranglehold on their minds. The remedy does not seem to be more evaluation but a method for bringing awareness of this dire state of affairs and removing the stranglehold. Developing intellectual autonomy is no small matter and evaluation seems to be an insufficient means.

Conflating skills to evaluate elements of thought with skills to generate elements of thought?

In an early and influential publication on critical thinking, Max Black compared the qualities of a good reasoner with the qualities of good critic.[124] Just as a good critic is able to judge a piece of music or fine cuisine and is able to spell out the criteria by which he judges, a good reasoner evaluates a piece of reasoning and spells out his criteria. Good reasoning, according to Black, is analogous to critiquing well. This wonderful analogy, of course, conceals the all-important point that good reasoning does not just consist in evaluating reasoning but also in *generating* it as well. In line with the broader view of reason explicated earlier, a view which does not limit the use of reason to argumentation and evaluation, we would not consider someone a good reasoner who could only evaluate reasoning but not able to generate his own. In this sense, a good reasoner is not like a critic but rather like a first rate musician or a first rate chef.[125] And the skills required of a musician and a chef are vastly different from the ones required of a critic of music and a critic of cuisine. Critiquing cuisine will not eventually make

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[124] Black makes the analogy clear:

> A well-trained critic of music 'understands what it is all about.' He is in a position to appreciate what the performer was trying to achieve, how successful he was in overcoming the particular limitations and difficulties of the instrument, and so on. The critic's judgment of the value of the piece of music (or omelet, or a piece of reasoning) is grounded in knowledge of principles and standards appropriate to the subject matter. Max Black, *Critical Thinking: An Introduction to Logic and Scientific Method* (New York: Prentice-Hall, 1952) 7.

A good critic of music is able to give reasons for his judgments. Most importantly, these judgments are grounded in knowledge of appropriate *principles and standards.* Similarly,

> To be in a position to improve reasoning means to be in a position to distinguish good reasoning from bad. A man who judges cattle has some specifications before him (often in a precise form) of what constitutes a good specimen of the breed he is judging. A thinker who tries to improve his thinking must, likewise, have in mind some standard for discriminating good thinking from bad. To put the matter in another way, the art of logic, like all arts, involves the use of ideals. Ibid., 7-8.

[125] I am indebted to M. Morteza for the potent analogy of the reasoner as a first rate musician.

one a fine chef and critiquing music will not eventually make one a concert pianist. A quality controller is not an engineer and does not become one from doing more quality controlling. A vast chasm separates the two kinds of skills involved. The best critic may make the worse music and the worse meal. Paul's and Ennis' educational path for critical thinking resembles the path of a critic not the path of a practitioner or producer. This unduly restricts the range and scope of reasoning and worse, it forces the straightjacket of evaluation and critique on all forms of reasoning. Good reasoning is more than a critique of reasoning.

This important fact is amply demonstrated by none other than the paragon of rationality. Susan Langer, in her underappreciated *Philosophy in a New Key*, shows how the real genius of a great philosophy lies in the formulation of new questions and problems. A new philosophy's questions "make the frame in which its picture of facts is plotted . . . they give the angle of perspective, the palette, the style in which the picture is drawn."[126] Nothing exemplifies this better than Socrates' profound questions:

> Socrates did not continue and complete Ionian thought; he cared very little about the speculative physics that was the very breath of life to the nature-philosophers, and his lifework did not further that ancient enterprise by even a step. He had not new answers, but new questions, and therewith he brought a new conceptual framework, an entirely different perspective, into Greek philosophy . . . [N]ot "Which answer is true?" but: "What is Truth?" "What is Knowledge, and why do we want to acquire it?" His questions were disconcerting because they contained the new principle of explanation, the notion of *value*. Not to describe the motion and matter of a thing, but to see its purpose . . . From this conception a host of

[126] Susan Langer, *Philosophy in a New Key: A Study in the Symbolism of Reason, Rite and Art* (New York: New American Library, 1948), 2

> new inquiries were born. What is the highest good of man? Of the universe? What are the proper principles of art, education, government, medicine? To what purpose do planets and heavens revolve, animals procreate, empires rise? Wherefore does man have hands and eyes and the gift of language? [127]

It is unlikely that this new frame in philosophy, an entirely new palette, was born from Socrates' gift in evaluating elements in reasoning. A whole world is implicated in a profound question and its asking requires deep thought, perspicuity, and prescience—skills that far surpass *evaluation* of elements in reasoning.

Though Paul begins with a more inclusive framework for conceptualizing critical thinking when he begins with elements of thought as opposed to argument, what ultimately emerges from his program are methods for evaluating reasoning. This is, of course, welcome especially as it is a program that seeks to evaluate more general elements of thought such as purposes, points of view and implications, rather just than merely evaluation of arguments. But it is unclear how learning and applying skills of evaluation develop the intellectual virtues integral to rationality such as intellectual autonomy. To simply gain 'rational control over one's beliefs' is no small task.

Though Paul rightly begins with documenting acute problems in thinking and reasoning, in all likelihood, Paul has not appreciated how deep egocentric and socio-centric thinking really goes or has overestimated the power of his evaluation tools. Furthermore, perhaps Paul makes the illicit assumption that skills to evaluate are similar in kind to skills for producing or that that leaning and applying the former lead to the latter. But a world separates the two kinds of skills.

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[127] Ibid., 4-5.

But Paul's program is well suited for school learning. What emerges from the actual suggested educational program is a method for critiquing and learning academic subject matter. That the underlying focus of the educational program is on academic subject matter is reinforced by comments such as "[f]or students it is a critical thinking supplement to any textbook for any course. Students can use it to improve their learning in any content area. Its generic skills apply to all subjects . . . When this guide is used as a supplement to the textbook in multiple courses, students begin to perceive the usefulness of critical thinking in every domain of learning."[128] But good reasoning surpasses academic learning where students are, on the whole, mainly consumers rather than producers and where learning is confined to the acquisition of knowledge more than the transformation of the quality of ones thinking. Lastly, the pedagogy, like Ennis,' relies on telling, urging and encouraging students to evaluate (according to a number of standards). Whether this pedagogy is effective is an area that needs investigation. Its efficacy has been unwittingly assumed.

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[128] Paul and Elder, *The Miniature Guide Critical Thinking Concepts and Tools*, front cover.

Chapter 2.3

Rationality Through Initiation into the Disciplines

Introduction

As noted in the introduction to this chapter, critical thinking, especially as conceptualized and influenced by John Dewey, came under severe criticism across the Atlantic. In their newly formed philosophy of education program at the University of London, Richard Peters and Paul Hirst argued for a return to a liberal education (along Greek lines) focused on knowledge of the disciplines in lieu of education along progressive lines and in contrast to the development of critical thinking skills. More recently, John McPeck, an arch critic of the critical thinking movement, argues along the lines of Peters and Hirst in his emphasis on the disciplines and criticism of generalizable critical thinking skills.[129] Israel Scheffler in the United States built on the work of Peters

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[129] John McPeck makes his view of critical thinking quite clear:

> [T]he arguments in each of these essays are pieces, or subplots, of a more general point of view about critical thinking. That general view is, briefly, that specific subject content determines the required ingredients for thinking critically in each case. One of the more unwelcome consequences of this view is that the notion of "general critical thinking skills" is largely meaningless. Therefore, the great bulk of critical thinking programs which exist today are seriously misguided, in my view.

John McPeck, *Teaching Critical Thinking* (Routledge: New York, 1990), xiv.

He also argues for subject matter knowledge along the lines indicated by R. S. Peters:

> [A]t the moment, however, I see no competitive substitute for a liberal education. In particular, I am talking about the rational perspective which comes from an informed study of natural and social sciences, together with history, mathematics, literature, and art. We have yet to devise any comparable package which can yield the same breath of cognitive perspective. Whether by design or by folly, our education system has been more or less on the right track. In its own stumbling, bumbling, bureaucratic way, it may after all be trying to do the right thing. Its failures should not blind us to the potential for success. This point of view about education is hardly new. I refer you to the work of R. S. Peters, Paul Hirst, and perhaps Jerome Bruner for a sustained defense of it. Ibid., 16.

and Hirst and argued for the cultivation of rationality through the traditional disciplines. [130]

In this section of the chapter, I present the educational program for the cultivation of rationality through the disciplines as originally conceived by Israel Scheffler. According to Scheffler, "[r]ationality is . . . the ability to participate in critical and open evaluation of the rules and principles in any area of life. To initiate the child into the rational life is to engage him in critical dialogues that relate to every area of civilization: to science and art, morality, and philosophy, history and government."[131] I begin with the question of problems in thinking and reasoning that such an education program seeks to overcome. I then outline Scheffler's program, then evaluate its merits. His program, I argue, highlights an important aspect of rationality. But it is too narrow. His view of rationality and its close connection to the disciplines leads to some counter intuitive conclusions regarding reason, rationality and their cultivation.

Problems of reason

Scheffler does not mention any problems in thinking and reasoning hence it is unclear what lacuna will be overcome through an education in rationality. However, in the background, I believe, Scheffler has in mind an implied problem of reason (and a deep one at that). In the context of his discussion of the nature of teaching, Scheffler quotes from R. S. Peters' inaugural lecture, *Education as Initiation*, delivered at the

[130] Harvey Siegel, in developing his notion of critical thinking, draws inspiration from Scheffler's notion of rationality. See Harvey Siegel, *Educating Reason: Rationality, Critical Thinking and Education* (New York, Routledge, 1988). Siegel's emphasis is on a defense of a conception of critical thinking inspired by Scheffler. Siegel may or may not endorse Scheffler's educational program as presented here.

[131] Scheffler, *Reason and Teaching*, 62.

University of London in 1963. Behind Scheffler's notion of rationality through initiation is Peters' views on the aims of education articulated in this lecture. It is in this lecture that Peters criticizes Dewey, critical thinking, reflective thinking and progressive education in the US and proposes an alternate conception of what it means to be an educated person. It is here that we see a problem of reason. As briefly mentioned in Chapter 1, in his lecture, Peters remarks:

> No man is born with a mind; for the development of mind marks a series of individual and racial achievements. A child is born with an awareness not as yet differentiated into beliefs, wants and feelings. All such specific modes of consciousness, which are internally related to types of objects in the public world, develop later *pari passu* with the pointing out of paradigm objects . . . Gradually the child comes to want things which are means of obtaining instead of threshing round beset by unruly and unrealistic wishes . . . He learns to name objects, to locate his experience in a spatio-temporal framework . . . In the beginning it was not at all like this. Such an embryonic mind is the product of initiation into public traditions enshrined in a public language, which it took remote ancestors centuries to develop. [132]

Peters reinforces the implications for education of this view of the mind:

> Further differentiation develops as the boy becomes initiated more deeply into distinctive forms of knowledge such as science, history, mathematics, religious and esthetic appreciation, and into the practical types of knowledge involved in moral, prudential and technical forms of thought and action. Such differentiation is alien to the mind of a child and primitive man—indeed to that of a pre-seventeenth-century man. To have a mind is not to enjoy a private picture show or to exercise some inner diaphanous organ; it is to have an

[132] Peters, "Education as Initiation," 102-3.

> awareness differentiated in accordance with the canons implicit in all these inherited traditions. 'Education' marks out the processes by means of which the individual is initiated into them.[133]

Man is born with an awareness but not a mind as this awareness is not yet differentiated, according to Peters. To have a mind is essentially to have a differentiated consciousness in accordance with public criteria. Further differentiation of consciousness develops through an initiation into 'forms of knowledge' such as science and history for example, hence, the necessity of an education into the disciplines. This (radical) view emerges out of the then current philosophical air. The move away from inner processes of mind and the emphasis instead on public criteria are indebted to Wittgenstein, especially as he was interpreted by Gilbert Ryle, in his enormously influential *Concept of Mind*—a work that Peters and Scheffler both reference. Gilbert Ryle had argued that talk of inner processes of the mind likened one to talking about a 'ghost in the machine.' Processes of the mind are to be understood not as private, inner, inaccessible happenings but by (external) public and shared criteria.

Peters view of education also emerges in reaction to progressive philosophies of education that had taken root in the United States. In the same lecture, Peters notes, for example, that "[t]here have been many like Dewey who have attacked the notion that education consists in the transmission of a body of knowledge. Stress is placed instead on critical thinking, individual experimentation and problem-solving." He continues by remarking how he saw lessons in America where critical thinking was slavishly applied—where a teacher used poetry simply for the purposes of critical thinking. Lost

[133] Ibid., 103.

in this process, according to Peters, was an appreciation of poetry itself along with history itself when they were used simply as a means for teaching critical thinking: "The notion that poetry should be listened to, or that one has to be, to a certain extent, a historian in order to understand a historical problem, was an alien one."[134]

Furthermore, Peters cast doubt on whether there might be any generalizable critical thinking skills at all and thereby making a case for the indispensability of the disciplines:

> The emphasis on 'critical thinking' was salutary enough, perhaps, when bodies of knowledge were handed on without any attempt being made to hand also the public procedures by means of which they had been accumulated, criticized, and revised. But it is equally absurd to foster an abstract skill called 'critical thinking' without handing on anything concrete to be critical about. For there are as many brands of 'critical thinking' as there are disciplines, and in the various disciplines such as history, science, and philosophy, there is a great deal to be known before the peculiar nature of the problem is grasped.[135]

This, together with the view noted above regarding the mind as initially undeveloped and the role of civilization in forming the mind, Peters states his philosophy of education bluntly:

> [Children] start off in the position of the barbarian outside of the gates. The problem is to get them inside the citadel of civilization so that they will understand and love what they see when they get there.[136]

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134 Ibid., 103.

135 Ibid., 103-4.

136 Ibid., 107.

Returning to Scheffler, as stated earlier, he does not mention problems of mind, reason and rationality but in the background he may have R. S. Peters' notion of children lacking minds in the full sense and hence lacking rationality.

The educational program for the cultivation of rationality

Scheffler's education program for the cultivation of rationality builds on Peters' notion of mind and civilization. He begins by defining rationality:

> It seems to me, moreover, that the concept of *rationality* is even broader than that of intelligence, involving simply the capacity to grasp principles and purposes, and to evaluate them critically in the light of reasons that might be put forward in public discussion. Rationality is thus, as I view it, the ability to participate in critical and open evaluation of the rules and principles in any area of life.[137]

Note his emphasis on "public discussion," a concept indebted to Wittgenstein and Ryle. In explicating his philosophy of education with respect to rationality, we see traces of Peters' notion of education as initiation in the disciplines argued for in his inaugural lecture:

> To initiate the child into the rational life is to engage him in critical dialogues that relate to every area of civilization: to science and art, morality, and philosophy, history and government. It is to nourish his curiosity and critical judgment as well his responsibility for choices of belief and conduct. Such a conception goes far beyond the notion of academic mastery of factual subject matter, and far beyond the transmission model.[138]

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[137] Scheffler, *Reason and Teaching*, 62 (emphasis in the original).

[138] Ibid., 62.

> Scholarship in history is subject to an analogous interpretation [to that of science, discussed in an earlier passage], for beyond the formal demands of reason, in the sense of consistency, there is a concrete tradition of technique and methodology defining the historian's procedure and his assessment of reasons for or against particular historical accounts. To teach rationality in history is, in effect, here also to introduce the student to a live tradition of historical scholarship. Similar remarks might be made also with respect to other areas, e.g., law, philosophy, and the politics of democratic society. The fundamental point is that rationality cannot be taken simply as an abstract and general ideal. It is embodied in *multiple evolving traditions*, in which the basic condition holds that issues are resolved by reference to *reasons*, themselves defined by *principles* purporting to be impartial and universal. These traditions should, I believe, provide an important focus for teaching.[139]

If clarity is a virtue, then Scheffler has certainly exemplified it. To initiate a child into the rational life is to initiate him into the live and evolving traditions of science, history, law and the like. Rationality is not simply an abstract and general idea but it is 'embodied' in multiple and evolving traditions where the basic condition holds that 'issues are resolved by reference to *reasons*, themselves defined by *principles* purporting to be impartial and universal.' The ultimate aim of the educational program is to foster rationality defined as 'the ability to participate in critical and open evaluation of the rules and principles in any area of life.' In this notion of the cultivation of rationality in education, Scheffler makes clear that it is not just rational abilities that are important but also a character that embodies rational dispositions.[140] Hence the "[t]he job of education

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[139] Ibid., 79.

[140] This point is made clear in the following passage:

> Rationality has just been characterized as a precious instrument for assessing truth and for gauging the trustworthiness of courses of action. It must, however, also be conceived as an autonomous

is to develop character in the broadest sense, that is, principled thought and action, in which the dignity of man is manifest."[141]

Evaluation

There is tremendous merit in Scheffler's educational program for the fostering of rationality. First, with regards to the eventual goal, we would not call a person rational if he did not have the ability to evaluate rules and principles in life, whatever they may be. If he had tremendous difficulty evaluating beliefs, principles, courses of action we would certainly see something amiss with respect to his reason and rationality. And if this difficulty is endemic and generalized and leads to him hold rules and principles without evaluating them, we would certainly not be unjustified in calling him somewhat irrational. Conversely, if we did find someone who displayed the ability to evaluate rules and principles, we would rightly say of this person that he was really able to think and reason. So Scheffler is quite right to characterize rationality (at-least) in terms of "the ability to . . . participate in critical and open evaluation of the rules and principles in any area of life."

Scheffler's educational program, the means through which rationality is to be fostered, also has merit. Since rationality (at-least) consists in the ability to evaluate principles, rules and reasons and if students do not have this ability to begin with, it seems reasonable that students should be given opportunities to give reasons, and evaluate rules and principles in an educational context. Furthermore, providing this

character trait. That is to say, that it is not just a tool used by a developed ego to solve its problems in the world . . . If rationality is an instrument, it can be regularly used only by those whose characters embody rational dispositions. Ibid., 28.

141 Ibid., 77.

opportunity in the context of the disciplines has the advantage of introducing students to various areas of human civilization, science, law, history, and the like. This introduction no doubt widens their outlook, expands their horizons, helps them appreciate achievements and struggles in these areas and introduces them to possible avenues of further pursuit. And in the context of reasoning, if they were to reason, for example, on aspects of law, they would have some content knowledge and some principles and some rules to go by in their activities of evaluation. They would also have some appreciation of the challenges, problems, questions and goals within these areas, which, no doubt, would further stimulate their reasonings in these areas. One who did not have this background would find it difficult to get started. And the same for the rest of the areas of civilization. Hence, in Sheffler's educational program, en route to learning how to evaluate (reasons, principles, and rules), students also gain specific knowledge of principles, rules, and reasons in addition to a factual base within the disciplines.

The question of necessity of the educational program

But if rationality is fundamentally "an ability to participate in critical and open evaluation of the rules and principles in any area of life," do we not have this ability to begin with or will it not emerge through a process of maturation? This point also pertains to R. S. Peters' notion of children not really having minds until they are brought into the 'citadel of civilization.'

To take a very simple example, we often hear kids at a very young age, say: 'That is not fair.' This is clearly an instance of giving reasons on the basis of principles (in this case, no less than on the ethical principle of fairness!). Harold Garfinkel makes an acute observation in the area of sociology. Social actors, on Garfinkel's view, are always

giving reasons and engaging in justifications. Indeed, it is part and parcel of being a social actor that one engages in activities of justification and it is this very activity that partly defines ethnomethodological studies which "analyze everyday activities as members' methods for making those same activities visibly-rational-reportable-for-all-practical-purposes, i.e., "accountable," as organizations of commonplace everyday activities."[142]

Has this ability to give and evaluate reasons on the basis of principles been learned in schools? There is quite a bit of anthropological evidence showing non-literate societies and societies with no formal education whatsoever routinely engaging in reason giving practices. Evans-Pritchard, to name just one anthropologist, famously showed how the Azande give reasons and explanations for certain happenings on the basis of principles, namely, consulting the poison oracle where poison is administered first to one chicken, then to another for confirmation. Evans-Pritchard once remarked how he found the Azande system quite self-consistent and somewhat livable, even for an English man: "I found it strange at first to live among Azande and listen to naive explanations of misfortunes which, to our minds, have apparent causes, but after a while I learnt the idiom of their thought and applied notions of witchcraft as spontaneously as themselves in situations where the concept was relevant."[143]

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[142] Harold Garfinkel, *Studies in Ethnomethodology* (Englewood Cliffs: Prentice-Hall, 1967), vii.

[143] E. E. Evans-Pritchard, *Witchcraft, Oracles and Magic Among the Azande* (Oxford: Clarendon Press, 1937) 19.

Unless we wish to *define* legitimate reasons, rules, and principles as those learned in the context of a liberal education in schools, the ability to give reasons and the propensity to determine them, verify them, validate them on the basis of principles is wide spread around the world in cultures that have no formal schooling and education as numerous ethnographies would attest. This raises the question 'Why should an *education* be concerned with the goal of developing rationality conceptualized as "an ability to participate in critical and open evaluation of the rules and principles in any area of life"? Remedies are better justified when there is an illness.

Does the justification hang on the phrase "critical and open" with the implication that it is an education in the disciplines and in schools that makes one "critical and open" but not when enculturated in a culture without formal education in the disciplines? A stronger justification seems in order, especially because "critical and open" evaluation may itself be in short supply, anywhere. I return to this point later in the chapter.

Rationality as an instrument for assessing truth and rationality as embodied

Scheffler makes some perplexing remarks regarding rationality perhaps resulting from a deep confusion surrounding reason. On the one hand, Scheffler says "[r]ationality has just been characterized as a precious instrument for assessing truth and for gauging the trustworthiness of courses of action."[144] In another place he says: "But I am, after all, not suggesting that it [rationality] belongs to a special faculty of mind called *Reason* . . . Rationality, as I see it, is a matter of *reasons*, and to take it as a fundamental educational ideal is to make as pervasive as possible the free and critical

[144] Scheffler, *Reason and Teaching*, 28.

quest of reasons, in all realms of study."[145] It's not quite clear what he means when he says reason is an instrument, but it is not Reason. If there is an acknowledgement of such an instrument why not call it Reason or simply reason? Perhaps it is simply unfashionable today to talk of an 'instrument' since it alludes to what is pejoratively described as 'faculty psychology'? He also says, as noted earlier:

> The fundamental point is that rationality cannot be taken simply as an abstract and general ideal. It is embodied in *multiple evolving traditions*, in which the basic condition holds that issues are resolved by reference to *reasons*, themselves defined by *principles* purporting to be impartial and universal. These traditions should, I believe, provide an important focus for teaching.[146]

According to this passage, rationality is 'embodied' in the evolving traditions, hence the call for an education in the various disciplinary traditions. However, it is unclear how an instrument is *embodied* in something else let al.one in traditions of enquiry. How is a hammer, as an instrument, embodied in the nails or in the house framing which is being nailed? But perhaps Scheffler does not mean that reason is literally an instrument. His ambivalence was noted above. So perhaps what he means is that the *activity* of giving reasons and evaluating them is embodied in the different traditions, in that we give reasons primarily *in* a discipline. But even this is not quite right. Reason giving seems to be a general activity far transcending the disciplines which, at times, and by some people, and after a certain historical period, is applied to disciplinary subject matter. We give reasons and justifications in daily life, in the family,

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[145] Ibid., 62 (emphasis in the original).

[146] Ibid., 79 (emphasis in the original).

at work, in social and civic contexts where there might not be any connections to particular disciplines. Courts of law, where matters are ideally decided with an appeal to reasons and principles, are not disciplines. There were forms of conflict resolution in cultures and societies much prior to the formation of the disciplines. Is it not more natural to say that the ability and propensity to evaluate reasons on the basis of rules and principles is *applied* to the disciplines? And hence, reason is *applied* to various areas of life as opposed to being *embodied* in certain traditions?

Besides the possibility of incorrect nomenclature, there are more serious educational problems stemming from this confusion. Where exactly in the disciplines is rationality embodied and how much of the learning in the disciplines is necessary to be educated in rationality? In giving examples of the disciplines, Scheffler lists science, history, and law, and others. But science can be further divided into physics and biology, biology into neurology and physiology and further down. When is an education in the disciplines sufficient? Is it enough to have some experience in validating claims in biology but not in physics? If physics is not necessary, why is history necessary? And so on. Historiography is a second order discipline reflecting on historians and the writing of history. In historiography one often detects blinders of particular historians especially when different historians' accounts on the same period are compared with each other. It is a common historiographical insight, for instance, that historians project concerns of their own times onto the past and that their social, theoretical lenses color what they see in history. From the perspective of an education in rationality, one would think, historiography is better suited. Aren't history of science and philosophy of science better suited than science? Historians of science are more acutely aware of the machinations of scientists in messaging the data to fit a strongly

held theory than are practicing scientists. How much is necessary? If the final objective is an appreciation of reasons and their evaluation, say in science, wouldn't one intensive course in science be sufficient? Do we need 12 years of history to know how historians given and defend reasons?[147]

Problematic notion of rationality in a particular field

Scheffler argues in terms of rationality in specific areas:

> Rationality in natural inquiry is embodied in the relatively young tradition of science, which defines and redefines those principles by means of which evidence is to be interpreted and meshed with theory. Rational judgment in the realm of science is, consequently, judgment that accords with such principles, as crystallized at the time in question. To teach rationality in science is to interiorize these principles in the student, and furthermore, to introduce him the live and evolving *tradition* of natural science, which forms their significant context of development and purpose.[148]

So teaching and learning rationality in science means to interiorize principles (which determine how evidence is to be meshed with theory) which have been developed in the course of the history of the discipline. This means that rationality consist in learning the principles which are said to determine how evidence is to mesh with theory. This implies that a person cannot be rational in science unless he learns these principles, and not rational in history unless he learns those principles which are said to be unique to history. Since principles are unique to disciplines, does this not mean that a person can

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[147] I am indebted to M. Morteza for the points in this paragraph regarding the second order disciplines and amount of time necessary.

[148] Ibid., 79 (emphasis in the original).

never be considered rational in general, but only rational in science, history, art and government?

Furthermore, science is a composite of numerous disciplines: astronomy, physics, chemistry, neurology, psychology, etc. Supposedly, the said principles are different in each of these sub-disciplines as they have very different developmental trajectories. So a person can be rational in chemistry but not in physics. Physics itself has many braches: particle physics, general physics and other subdivisions. Principles that hold for large bodies don't hold for small bodies. So one can be rational in general physics but not in particle physics?

Scheffler implies that principles are developed over time and may change over time (e.g. '*evolving* tradition of natural science'). If a student were to learn the principles of say, astronomy, that were current a thousand years ago and used those to mesh evidence with theory, he would not be considered rational since this is not how evidence is meshed with theory today. This would imply that an astronomer, living a thousand years ago, is no longer rational, but was very rational at the time! [149]

I believe Scheffler is led into these counter intuitive and contradictory position because of his pre-existing loyalties to the disciplines together with a limited notion of reason and rationality. One the one, hand he argues for a general, non-relative, notion

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[149] One could accept the logic and eventual conclusion and take a relativistic view of truth and rationality. But rationality, on Scheffler's account (as presented in one place), is nothing less than an instrument that leads to truth: "Rationality has just been characterized as a precious instrument for assessing truth and for gauging the trustworthiness of courses of action." Ibid., 28.

In the context of a critique of activism Scheffler remarks: "Without rational thought, we can have no reason to suppose that our guiding beliefs are true and so trustworthy." There is no indication that by truth he means relative truth. Indeed, a major aspect of Scheffler's project in *Reason and Teaching* and indeed in other works is to argue against forms of relativism. Ibid., 27.

of rationality as the ability to evaluate reasons based on principles. The whole tenor of Scheffler's work with respect to rationality is towards generalizability, universality and against relativism. But to justify initiation into the disciplines he links rationality to the specificities of the disciplines. Is Scheffler a victim of a deeply held cultural belief in the value of the disciplines? The nearly ninety eminent men of the Committee of Ten, starting with a firm belief in the value of the disciplines, subsequently justified them in terms of 'mental training.' Peters justified them in terms of 'development of mind,' Hirst in terms of 'development of reason' and Scheffler in terms of 'rationality.'

Idealization of the disciplines and the disciplines as disciplining

Perhaps the most serious oversight on the part of Scheffler and others who call for an education in the disciplines for the inculcation of rationality is the smuggling of a sanitized conception of the disciplines in which 'open and free' assessment of reasons supposedly takes place. When I was doing my master's degree in philosophy of education we read Dewey but not Tagore and not Rousseau, nor Mary Wollstonecraft. We studied epistemology and education, ethics and education but not reason and education. It's unclear how open and free my education was. I ended up writing my dissertation on ethics and objectivity advocating a Wittgensteinian perspective on ethics. The Wittgensteinian perspective was no genius of mine. My advisor was an avid Wittgensteinian. There were Wittgensteinians everywhere. Talk of Platonic essences was suspect, inner processes required public criteria, philosophy entailed analyzing language, there were no real problems in philosophy only confusions of language. The business of philosophy was to show the fly the way out of the bottle. At the time, I simply thought I was seeing the light. It took me several years to see how blind I had actually become and through a first rate education to boot.

Academia and practices within the disciplines, when viewed from the perspective of the real world, the world of real practitioners, scholars, professors, researchers, and sources of funding, the actual world in which students are to be initiated and not an idealized world where "the basic condition holds that issues are resolved by reference to *reasons*, themselves defined by *principles* purporting to be impartial and universal" is fraught with selectivity, partial perspectives, staunchly held views, pet theories, egos, defensive maneuvers, fights, fashions, parades (conferences), insults and ideologies. One does not simply learn to give reasons and evaluate them. One learns to give them as a Marxist, Weberian, a Durkheimian, and Parsonian. Wearing Marxist lenses one sees revolutions everywhere, as Popper so rightfully remarked. Weberians see meanings everywhere. Kuhn observed early on how science textbooks induct students into a *way* of seeing the world— in a word, into a *dogma*. Experiments in textbooks play the role of demonstration rather than genuine tests. When school laboratory results don't pan out as predicted, something is wrong with the experiment or the procedures, not the theory—since the theory is now the 'truth' just as Newtonian mechanics, the heliocentric universe and the four elements were taught as truths at one time.[150] It was Aristotle's logic, accepted for centuries, and taught in the best educational institutions of the day, that Bacon complained about and referred to as *idols of the theatre* which, according to Bacon, later come to resemble fables: "And in the plays of this philosophical theatre you may observe the same thing which is found in

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[150] Thomas Kuhn, *The Structure of Scientific Revolutions,* 2nd ed. (Chicago: University of Chicago Press, 1970).

the theatre of the poets, that stories invented for the stage are more compact and elegant, and more as one would wish them to be, than true stories out of history."[151]

Reason giving, evaluation of evidence, production of evidence within the disciplines are done within a world view and which, after a certain time, is held somewhat dogmatically resulting in irrationality. Far from removing ideologies, disciplines are often the most efficient ways for students to become more encrusted in them and with a good dose of critical thinking, they can defend them too. It's a mammoth task removing the shackles of disciplinary effects of the disciplines and requires a mammoth use of reason and in so many different ways than simply giving reasons.

Rationality and the 'free and critical' quest of reasons

"'Rationality,' Scheffler notes, "is a matter of *reasons*, and to take it as a fundamental educational ideal is to make as pervasive as possible the free and critical quest for reasons, in all realms of study."[152] A much earlier writer than Scheffler said something very similar. William Sumner wrote:

> The critical faculty is a product of education and training . . . Education is good just so far as it produces well-developed critical faculty . . . A teacher of any subject, who insists on accuracy and a rational control of all processes and methods, and who holds everything

[151] Spedding, Ellis, and Robertson. *The Philosophical Works of Francis Bacon*. Aphorism LXII.

[152] Scheffler, *Reason and Teaching*, 62.

> open to unlimited verification and revision, is cultivating that method as a habit in the pupils.[153]

Notice, "make as pervasive as possible the free and critical quest of reasons, in all realms of study" in Scheffler and "holds everything open to unlimited verification and revision" in Sumner. These calls have an aura of nobleness about them. What can be more rational than the injunction to seek verification of all of ones' beliefs? If there are criteria of rationality, surely, this is one of them. But as argued in the previous section something larger is missing from this account. Is the route away from dogmatism (irrationality) 'free and critical quest of reasons, in all realms of study' and 'unlimited verification and revision'? Should a student question *everything* he has ever learned in science, history, geography and mathematics from first grade to graduate school? How many arguments and reasons has he been exposed to and how many has he 'uncritically accepted' and how many has he uncritically rejected and how many has he ignored? Something more in the area of rationality is required than the disposition and ability to seek reasons and critically evaluate them.

Rational principles: judging by and abiding by

In the previous two sections we noted a chasm between learning critical skills of evaluation and developing appropriate dispositions and character traits that was overlooked by both Ennis and Paul. Scheffler too seems to be unaware of the great gulf. Consider Scheffler's implied sense of principles in this passage on rationality:

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153 William Graham Sumner, *Folkways: A Study of the Sociological Importance of Usages, Manners, Customs, Mores, and Morals*. William Lyon Phelps and Albert Galloway Keller eds. (New York: Ginn and Company, 1940), 632-33, quoted in Richard Paul, Linda Elder, and Ted Bartlett [Principal Investigators] *California Teacher Preparation for Instruction in Critical Thinking: Research Findings and Policy Recommendations* (Sacramento: California Commission on Teacher Credentialing, 1997), 10.

> The whole concept of argument, moreover, rests upon the ideal of rationality—of discussion not in order to move or persuade, but rather to test assumptions critically by a review of *reasons* logically pertinent to them.[154]

From his remarks throughout his text, we know that reasons are to be evaluated by principles. Now consider another passage:

> A rational man is one who is consistent in thought and in action, abiding by impartial and generalizable principles freely chosen as binding upon himself.[155]

Here we have two senses of principle (one implied, one explicit) but considered as one in Scheffler's text. The original source is Kant.[156] To evaluate on the basis of a principle in order to determine warrant is one thing. To abide by principles in one's actions seems to be something altogether different. They are not both rational in the same sense.[157] A first rate (rational) scientist of the highest caliber may unflinchingly make judgments in his field on the basis of reasons and principles pertinent in his area of scholarship. However, with respect to his actions outside of the laboratory, in family, social and civic life he could be acting out of self-interest. To abide by principles in the realm of action

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154 Scheffler, *Reason and Teaching*, 22.

155 Ibid., 77.

156 This is how Scheffler expresses his debt to Kant:

> In the work of the great eighteenth-century philosopher, Immanuel Kant, we find a clear conception of rationality as the basis not only of the intellectual but also of the moral life. Rationality, for Kant, means impartiality and fairness of judgment; the conforming of one's actions to general rules which one has freely accepted for oneself. Ibid., 63.

> For Kant, the primary philosophical emphasis is on reason, and reason is always a matter of abiding by general rules or principles. Reason stands always in contrast with inconsistency and with expediency, in the judgment of particular issues. In the cognitive realm, reason is a kind of justice to the evidence, a fair treatment of the merits of the case, in the interests of truth. Ibid., 76.

157 Scheffler registers this difference in one place where he calls one cognitive and the other moral. But the distinction is glossed over and moreover there is a strong tendency to see both as essentially the same.

implies, not acting out of convenience, or expediency, or desire, or temporary gain, or weakness, or temptation but to remain steadfast and resolute and to *act only* out of principle. Are the abilities to judge from principles and abilities to act from principles in the realm of action one and the same kind of abilities? Does the one lead to the other? There is a strong implication in Scheffler and in many other theorists that an initiation into the disciplines which are characterized as places for the free and open quest of reasons based on principles makes one a *principled person*. A vast gulf separates the two virtues.

Scheffler's account of rationality through an initiation into the disciplines suffers from these numerous problems because of faulty starting points and an erroneous notion of reason tied to the disciplines and defined only as the practice of giving and seeking reasons based on principles. In his account, Scheffler, as indicated earlier, does not mention problems of reason that can be overcome through an education in the disciplines. But he cites R. S. Peters who, as we have seen, holds the view that children essentially have no minds until they are inducted into the achievements of civilization. This view seems patently mistaken as argued above and combined with an allegiance to the disciplines interpreted in idealized ways, results in some very counter intuitive conclusions such as that we have an instrument of reason but we don't, we can be rational in physics but not in particle physics, a historical personality was rational but is no longer, children are not rational until inducted in the disciplines, a man who judges on the basis of principles in science is rational in the same sense as a man who acts of out principle in action and many other conclusions. On the other hand, having an expanded notion of the idea of reason, which includes the reasoner, reason, content and reality and their dynamic relationships with each other could alleviate some of these

problems. The instrument (reason) may or may not be *applied* to a discipline (content), the reasoner may or may not be engaged and instead might be going by someone else's reasoning (closed instead of 'open and critical') and even though the reasoner is giving reasons he may not be reasoning (under the spell of dogma). This suggests the necessity of a much broader idea of reason than just evaluation of reasons and principles.

Chapter 2

Conclusion

Current educational endeavors in the area of the cultivation of reason, whether through critical thinking or through the disciplines, are commendable with respect to their goals. Ennis defines the goal as 'reasonable, reflective thinking on what to believe and what to do,' Paul as 'self-directed, self-disciplined, self-monitored, and self-corrective thinking' and Scheffler defines it as 'the ability to participate in critical and open evaluation of the rules and principles in any area of life.' These are all marks of a rational person. However, with respect to their educational programs, the educational means and strategies for achieving rationality, they focus exclusively on issues of *evaluation*—Ennis on evaluation of arguments, Paul on evaluation of 'elements of thought' and Scheffler on evaluation of reasons based on principles. From the perspective of the broader idea of reason, as articulated by Morteza, where "[t]he idea of reason is not limited to argument and evaluation of argument" but "includes reason in itself, the use of reason, the problems of reason, contents, reality, the reasoner, their relationships, and other elements"[158] we can see that a focus on evaluation is much too narrow. This narrow focus presents numerous difficulties with respect to the full cultivation of reason in education. In this chapter I have indicated some of these difficulties.

While it is worthwhile to know how to evaluate arguments, what is also required from the perspective of rationality is to exercise one's reason in coming to understand which arguments are important to analyze and assess, when it is appropriate, and in

[158] Monsour Morteza, "Philosophy of Reason" (unpublished manuscript, May 31, 2016), Word file.

what manner. A person who did not discriminate but analyzed every argument, far from being rational, would be considered mad. Exercising one's reason in this way is not a matter only of evaluating arguments.

For all three educational endeavors, I noted the gulf between the lofty but admirable dispositions and virtues that each program calls for and their educational program. It is one thing to know how to analyze arguments with respect to truth and reasonableness and quite another to have the disposition to care for truth (Ennis), have the intellectual traits of autonomy, confidence in reason and fairmindedness (Paul) and have a principled character (Scheffler). I have tried to show that an illicit assumption has been made that learning to evaluate arguments (Ennis), learning to evaluate 'elements of thought' (Paul) and giving and seeking reasons based on principles (Scheffler) will lead to these noble character traits.

I pointed out a distinction between evaluation and construction. It is not at all obvious that the abilities of the former are sufficient for abilities for the latter. A competent reasoner is not like a critic of music but more like a competent concert pianist and has many other abilities than simply judging the quality of music. To be rational is also to construct and produce and not just to evaluate. Furthermore, it is not just about producing good arguments. Socrates' genius, which is held as mark of rationality, lies not only in his ability to evaluate and produce good arguments only but to introduce a new way of thinking altogether. The latter is not simply a function of evaluating arguments.

The narrowness of the conception of reason can also be seen through two examples mentioned in the chapter—Stanford students who are asked to evaluate evidence regarding the efficacy of capital punishment and participants who are asked to

estimate their abilities in distinguishing true from false suicide notes. Though participants were evaluating evidence and giving plenty of reasons it was clear that there was something drastically amiss in their reasonings. This suggests that a conception of reason that only highlights reason giving and evaluation is inadequate. In order to fully understand a situation such as this, we ought to include, in our conception, the reasoner, his reason, uses of reason, contents of reasoning, problems of reason and reality in the equation. Including these in the conception of reason we can say, though they were giving reasons they were not reasoning (uses of reason), their reason was not engaged, they were not in control of their reason, they were not really giving reasons on the basis of what was in front of them (reality) rather on the basis of their own beliefs (problems with the reasoner). The wider view of reason helps explain many of the anomalies faced by the narrow conception.

In the next chapter, I explore reasoning in a cultural context to demonstrate the wider view of reason mentioned in this chapter. Consider for a moment if we were to give the following premises to members in different cultures: 'All men are mortal,' and 'Socrates is a man.' Members in all cultures would have no trouble concluding that 'Socrates is mortal.' They would be able to see the premises for *what they are* and be able to conclude rightly on the *basis* of these premises. In short, cultural actors everywhere are competent at, at-least, simple argument analysis and assessment. Given a critical thinking course in each culture, it is quite likely that many members in each culture would master argument analysis and evaluation. But now consider asking them to reason about deeply cultural matters—to reason on the basis of culturally pregnant premises. Would they all conclude the same? Differences in their conclusions suggests that something else besides competencies in arguments needs to be taken into account

in explaining differences in their conclusions, for they will all conclude in a similar way given a syllogism of the kind mentioned above. What is going on in the reasoning process of individuals when they are reasoning about cultural matters but not when they are reasoning about culturally neutral matters like Socrates and his mortality? This is the driving question in the next chapter.

Chapter 3

Culture and Reasoning: The Role of Cultural Lenses

Introduction

In Chapter 2, I noted several merits in three prominent educational programs for the cultivation of reason in education. Alongside these merits, I also noted what I take to me a major shortcoming, namely limiting the use of reason to evaluation. Furthermore, I showed that problems of reason are not confined to problems of argument and evidence. In conclusion, I pointed out, that the three contemporary programs for the cultivation of reason in education, given their restrictive view of the idea of reason and other problems are insufficient for the full cultivation of reason in education.

In this chapter, I begin with the broader idea of reason introduced in Chapter 2, namely, that the idea of reason includes amongst other things reason, the use of reason, the reasoner, problems of reason, contents and reality and their relationships. Through an investigation of two empirical case studies in the area of culture and education, I exemplify this broader idea of reason. Most particularly, I explore the relationships between culture and reasoning. For my analysis of this relationship, I have found aspects of Morteza's insights into culture and reason (articulated in his manuscript on the philosophy of reason), namely "culture as a lens, culture as a barrier, and culture as grips in reasoning"[159] extremely illuminating, opening for me fresh vistas in which to see the workings of culture on the reasoning process. Most particularly, I have come to

[159] Monsour Morteza, "Philosophy of Reason" (unpublished manuscript, May 31, 2016), Word file.

appreciate from his philosophy how cultural lenses, at times, may inhibit and block reasoning all together. Through these insights, I have also come to see fruitful connections between culture and scientific theories and reasonings especially as the they have been studied in recent social studies of science and technology.

In my view, approaching areas of reasoning with the broader idea of reason and the role of culture mentioned above widens our horizons of rationality as well as deepens our appreciation of subtle but real problems in reasoning; problems which educators will need to wrestle with, along with many other problems, in constructing programs and philosophies for the full cultivation of reason in education.

In this chapter, I begin with an exploration of reasoning in the context of cultural notions surrounding mathematics education, most particularly what Stevenson and Stigler call "effort" vs. "ability" emphasis in the United States and in Japan and China. Here I explore how these notions impact parents', teachers' and students' reasonings regarding mathematical competencies and educational practices. For my second case study, I explore reasonings in the context of cultural differences in views of preschool ideals and practices in Japan, US and China as documented in Tobin, Wu, and Davidson's *Preschool in Three Cultures*. Here, I explore, for example, reasonings surrounding explanations of misbehavior in a classroom, notions of ideal class size, educational goals of preschool and views of fighting in young children. Stevenson and Stigler and Tobin, Wu, and Davidson, in their respective studies, do not schematize students,' parents,' and teachers' reasoning (though at times they imply them). Their interests are in cultural differences in belief and their impact on practice, not necessarily on reasoning. In the present study, I use the results of their studies to throw light on the

question of the role of culture in reasoning especially its role in short-circuiting reasoning.

In the following, I use the word 'culture' to mean generally beliefs and values that participants have acquired as a process of enculturation. But cultures are not monolith entities—some have more diversity within them than others. Perhaps there is more diversity in certain beliefs than others. In this study, I am relying on salient cultural notions, beliefs and values identified by educational anthropologists. But, in the last analysis, the examples used illustrate a larger point namely, the utility of a broader idea of reason. This study does not hinge on any specific beliefs and values which may not be generally shared within a particular culture.

Chapter 3.1

Case Study I:
Reasoning about Competencies in Mathematics:
United States, Japan and China

In an early and landmark study of cultural notions surrounding mathematics achievement in elementary schools, Harold Stevenson and James Stigler noted drastic differences in student achievement in mathematics between students in the US, on the one hand, and students in China and Japan on the other.[160] They compared several schools in each of the metropolitan cities of Beijing (China), Sendai (Japan), Taipei (Taiwan) and Chicago (USA) in the first grade and also in the fifth grade. Results were dramatic. In the first grade, average scores of American schools somewhat overlap with those of their counter parts in Japan and China. However, by the fifth grade, dramatic differences begin to appear. The *highest achieving* American school scored lower than the *lowest achieving* Japanese and Chinese schools. To check for the possibility that perhaps some American students may be scoring very high despite the low overall average, Stevenson and Stigler analyzed the scores of the top one hundred highest scoring students. What they found was equally striking. Of these one hundred top scoring students, only one was from the US, eleven were from Taiwan and eight-eight were from Japan. And these mathematical achievement tests did not just test for say, low level computation abilities but for a variety of competencies including mathematical operations, ability to apply knowledge to solve meaningful problems, facility with number concepts, interpretations of graphs and tables, estimation and measurement

[160] Harold W. Stevenson and James W. Stigler, *The Learning Gap: Why our Schools are Failing and What we Can Learn from Japanese and Chinese Education* (New York: Summit Books, 1992).

skills and spatial reasoning. In nearly every category, the mean score of American students was the lowest. What was also striking was the range of scores in each of these countries. There was a marked difference between the highest performing American student and the lowest performing American student. In contrast, in China and Japan the range was much less, where many more students performed at a higher level. These achievement patterns continue to the present day. The most recent results from the well-known *Trends in International Mathematics and Science Study* (TIMSS: 2011) show that the Asian countries of Singapore, Republic of Korea, Hong Kong, Chinese Taipei, and Japan all scored significantly higher than all other countries including the US.[161] Of course, our interest in this work is not the scores nor the disparities themselves but the wider cultural contexts within which these achievements *and* shortfalls are realized. More specifically, it is the impact of wider cultural beliefs on the reasoning of students, teachers and parents within a culture and, perhaps most importantly, how these cultural beliefs and values determine a nation's philosophy of education itself.

Stevenson and Stigler note marked differences in beliefs with respect to children's abilities between Americans, on the one hand, and the Japanese and Chinese, on the other: "We and others have found that American children, teachers, and parents emphasize innate abilities as a component of success more strongly than their Chinese and Japanese counterparts do. All three societies acknowledge that accomplishment cannot occur without work, but they differ in their beliefs about what people can achieve by work alone."[162] Stevenson and Stigler's acute observations of the tendency

[161] Data from TIMMS, https://nces.ed.gov/TIMSS/table11_2.asp.

[162] Stevenson and Stigler, *The Learning Gap,* 94-95.

to emphasize innate abilities in America versus a tendency to emphasize effort or struggle in Asian cultures have recently been corroborated by Jan Li of Brown University. Li has been recording and analyzing conversations between American mothers and their children and Taiwanese mothers and their children. Her work, along with Stigler's were the subject of a recent story on National Public Radio (NPR) where some of these recordings were aired.[163] Li's recordings are revealing with respect to deep cultural beliefs. Below are some relevant excerpts with Alix Spiegel as the NPR correspondent:

> CHILD [Excerpts of a Recording]: Guess what? We had a Harriet Tubman book.
> MOTHER [Excerpts of a Recording]: You really like Harriet Tubman, too, huh?
>
> CHILD: Mm-hmm.
>
> ALIX SPIEGEL [NPR Presenter]: This is one of [Professor] Li's recordings. In it, an American mother talks to her eight-year-old son about school. The son is a great student who loves to learn. He tells his mother that he and his friends talk about books even during recess. And the mother responds with this.
>
> MOTHER: Do you know that that's what smart people do - smart grown-ups?
> CHILD: I know.
>
> MOTHER: They just keep...
> CHILD: Talk about books.
>
> MOTHER: Yeah. So that's a pretty smart thing to do, to talk about a book.
> CHILD: And yeah...

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[163] "Why Eastern and Western Cultures Tackle Learning Differently": http://www.npr.org/2013/09/02/218067142/why-eastern-and-western-cultures-tackle-learning-differently.

SPIEGEL: It is a small exchange, a moment. But in this drop of conversation, there is a whole world of cultural assumptions and beliefs. Essentially, the American mother, Li says, is communicating to her son that the cause of her son's success in school is his intelligence - he is smart - which, Li says, is a very common American view.

JIN LI: The idea of intelligence is believed, in the West as a cause. She is telling him there's something in him, in his mind that enables him to do what he does.

SPIEGEL: But most people in Asian cultures, she says, don't think this way. Academic success is not as much about whether a student is smart. Academic success is about whether a student is willing to work and to struggle.

LI: It resides in what they do, but not who they are.

'A smart thing to do' and 'something in his mind' as opposed to something arising out of 'hard work and struggle.' What might be the effects of these beliefs on the mother's reasoning? And on the child's reasoning (through inescapable enculturation)? On a schools' reasoning? On a nation's philosophy of education? Let's continue with the NPR story:

CHILD 2: [Excerpt of recording: Foreign language spoken]

MOTHER 2: [Excerpt of recording: Foreign language spoken]

SPIEGEL: This is another conversation, this time between a Taiwanese mother and her nine-year-old son. They are talking about the piano. The boy won first place in a competition and the mother is trying to explain to him why.

MOTHER 2: [Excerpt: Foreign language spoken]

SPIEGEL: You practiced and practiced with lots of energy, she tells him. It really got hard, but you made great effort. You insisted on practicing yourself.

PROFESSOR LI: So the focus is on the process of persisting through it, despite the challenges, not giving up, and that leads to the success.

> SPIEGEL: So all this is important because the way that you conceptualize the act of struggling with something profoundly affects your actual behavior. Obviously, if struggle indicates weakness to you - for example, a lack of intelligence - it makes you feel bad. So you're less likely to put up with it. But if struggle indicates strength - the ability to face down challenge - you are much more willing to accept it.

Stevenson and Stigler refer to these major differences between these cultures as an emphasis on 'ability' versus an emphasis on 'effort.' And they note some insidious consequences of an over emphasis on ability. Children who believe they have high abilities have little reason to work hard and worse, children who believe they have low abilities and doubt the efficacy of hard work also have little reason to persevere.[164]

Under these cultural notions, Stevenson and Stigler note: "A student who is 'bright' is just expected to 'get it' and duller students are assumed to lack the requisite abilities to ever master certain kinds of material."[165] We might add here whether the recent rise in the US of categorizing students as 'gifted,' at one extreme and the rise in categorizing students as having 'disabilities' of some kind, especially Attention Deficit Hyperactivity Disorder (ADHD), at the other extreme, are manifestations of this same cultural phenomena namely, either you have it or you don't. Recent data from the Center for Disease Control and Prevention's (CDC) indicate that by 2011 more than 1 in 10 (11%) of US school-aged children had received an ADHD diagnosis by a health care provider.

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[164] Stevenson and Stigler, *The Learning Gap,* 95.

[165] Ibid., 102.

And diagnosis of ADHD by a health care provider increased by 42% between 2003 and 2011.[166]

Ian Hacking, philosopher and historian of science, points out a 'looping effect' of what he calls 'human kinds' as opposed to 'natural kinds.' Human kinds are human categories which are 'interactive'—they not only describe the world but, once created, interact with individuals that are so categorized. Individuals begin to see themselves in terms of these categories with further profound consequences to these individuals.[167] McDermott and Herve, in discussing the incessant practice of categorizing and of labeling students as disabled, aptly entitled their article "Culture as Disability."[168]

In contrast, according to Stevenson and Stigler, Asian students are confident that their efforts will pay off and work long hours at academic mastery: "[R]egardless of one's current level of performance, opportunities for advancement are always believed to be available through more effort."[169] Stevenson and Stigler asked fifth graders in Sendai, Taipei, and Minneapolis to rate how much they agreed or disagreed with the statement "The tests you can take show how much or how little natural ability you

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[166] Key Findings: Trends in the Parent-Report of Health Care Provider-Diagnosis and Medication Treatment for ADHD, http://www.cdc.gov/ncbddd/adhd/features/key-findings-adhd72013.html.

[167] Ian. Hacking, "Taking Bad Arguments Seriously," *London Review of Books* 21, August (1997): 14-16.

[168] Ray McDermott, and Varenne Hervé, "Culture 'as' Disability," *Anthropology and Education Quarterly* 26, no. 3 (1995): 324-48. Labelling and the effects of labelling is reminiscent of Bacon's observation on reason and language noted in chapter 1:

> [M]en believe that their reason governs words; but it is also true that words react on the understanding (LIX) . . . [The menace of words on the understanding is of two kinds] . . . names of things which do not exist . . . which result from fantastic suppositions and to which nothing in reality corresponds . . .names of things which exist, but yet confused and ill-defined, and hastily and irregularly derived from realities. [Aphorisms LIX, LX]

[169] Stevenson and Stigler, *The Learning Gap*, 95.

have." Given deep cultural differences, results were not surprising. Students in Sendai and Taipei, were more likely to disagree with this statement than students in Minneapolis, revealing that Chinese and Japanese children were less likely than American children to believe that tests reveal natural ability.[170]

How do these differences enter into the reasoning process? The impact of these radically different conceptions of native intelligence vs. effort on reasoning are foreshadowed in the NPR commentary presented above. A simple piece of reasoning in the child's mind (with profound consequences) when working on an academic problem at school, might go something like this:

[Reasoner's mind]

> "Success is about having intelligence . . ." [Unvoiced background belief, deep within the individual's mind, perhaps even unconscious]
>
> [Child working on a problem …]
> [Child then facing difficulty…]
>
> "This is really hard . . ."
> "I don't know how long I ought to work on this . . . Perhaps I am just not smart enough."
>
> _____
> "I think it's time I stopped working on it."

Faced with the same situation we can readily imagine an individual reasoning with a different cultural belief/assumption:

> "Success has a lot to do with hard work . . ." [Unvoiced background belief, deep within the individual's mind, perhaps even unconscious]
>
> [Child working on a problem …]

[170] Ibid., 99.

[Child then facing difficulty…]

"This is really hard . . ."
"I'll need to put more effort into this . . . If others can do it, I can do it."

———————

"I'll put in a little more time . . . I should be able to solve it soon . . ."

An individual who places more emphasis on native intelligence reasons that he need not spend too much time on a task if it seems very difficult ('If I have the ability I will get it') while the individual who believes it's a matter of hard work reasons that he needs to spend more time. Stigler observed just this outcome with respect to time spent on a difficult task in the two cultures:

STIGLER: We did a study many years ago with first grade students. We decided to go out and give the students an impossible math problem to work on. And then we would measure how long they worked on it before they gave up.

SPIEGEL: So the American first graders that Stigler studied...

STIGLER: Worked on it less than 30 seconds on average and then they basically looked at us and said, we haven't had this.

SPIEGEL: But the Japanese students?

STIGLER: Every one of them worked for the entire hour on the impossible problem and finally we had to stop the session because the hour was up.

Hence, we have a young American reasoner in the grips of a cultural belief of inherent limitations in his intelligence who reasons that he needn't spend much time on the problem because if he had it in him he would have got it by now. If he does not get it soon, he reasons that he won't. We have a Japanese reasoner in the grip of his belief in the efficacy of effort, who reasons that he ought to keep working on the problem until it is solved since it's just a matter of effort.

Stepping back from both cultures, and noting the impact of their beliefs or "lenses" on their reasonings and eventual actions, could we ask: 'But how should they reason?' The relevance and appropriateness of the question, I believe, can be appreciated if we consider the reasonings of American and Japanese parents and teachers. Their reasonings are far more consequential than the reasoning of a student since parents are in a position of influencing an entire generation and teachers in a position of influencing hundreds of students, if not thousands, over the length of their careers. The relevance of the question can also be appreciated, I believe, through a closer analysis of their reasonings from a wider notion of reason.

Stevenson and Stigler asked mothers in Sendai, Taipei, and Minneapolis to weigh the importance of effort vs. ability vs. difficulty of task vs. luck. The results were not surprising given the foregoing discussion. "All three groups of mothers gave the greatest number of points to effort, but Asian mothers gave more points to effort than did American mothers. When it came to assigning points to ability, American mothers assigned significantly more points than did the Chinese and Japanese mothers."[171] We can construct a possible 'American teacher reasoning situation' given the above cultural beliefs:

> "Success has a lot to do with effort but ability is quite important too . . ." [Unvoiced background belief, deep within the American teacher's mind, perhaps even unconscious]
>
> [Student working on a problem …]
> [Then student facing difficulty…]
>
> STUDENT: "This is really hard . . ."
> TEACHER: "Try a little harder . . ."

[171] Stevenson and Stigler, *The Learning Gap*, 99.

CHILD [after a lapse of sometime]: "I don't know how long I ought to work on this . . . Perhaps I am just not smart enough."

TEACHER: [Begins to suspect child may not have 'ability.']

———————

TEACHER: "Here, try this one. It's a little easier."

We can extrapolate the (severe) consequences. Teachers' beliefs begin to reinforce students' proclivities. Vast differences in achievement within one school begin to appear [as clearly indicated in Stevenson and Stigler's data on US students' performance on comparative math tests] and labels are ready at hand: gifted, average ability, student with disability, special needs, etc. From microcosmic reasonings' of individual teachers, together with consistent institutional norms and practices which reinforce teachers' practices, tracking begins its menace on the education system. The pervasiveness of tracking in American schools has been extensively documented in educational scholarship.[172] Conversely we can construct a possible 'Japanese teacher reasoning situation' given Japanese cultural beliefs:

"Although ability plays a part, success has a lot to do with effort . . . " [Unvoiced background belief, deep within the Japanese teacher's mind, perhaps even unconscious]

[Student working on a problem …]
[Student then facing difficulty…]

STUDENT: "This is really hard . . ."
TEACHER: "Try a little harder . . ."

STUDENT: "I'll put in a little more time . . . I should be able to solve it soon . . ."
TEACHER: [Encourages student to try other ways of solving the problem. Does not let the student off the hook].

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172 Jeannie Oakes, *Keeping Track: How Schools Structure Inequality*. 2nd ed. (New Haven: Yale University Press, 2005).

Teacher continues to insist on more effort until student gets it. [173]

We already have a glimpse of the consequences and they are dramatic. Many more students achieve at a higher level and differences between high and low achievers is reduced dramatically.

Now, a closer examination of these 'reasonings.' In the foregoing exposition, I have characterized students', teachers' and parents' thinking on these matters as cases of reasoning. But from a broader idea of reason introduced earlier, namely, an idea of reason that includes, reason, the reasoner, content, reality and their relationships and other uses of reason besides just evaluating arguments, we can ask whether, in the above situations, the Japanese and American participants *are truly reasoning though they are giving plenty of reasons and arguments.*

Recall for a moment the Stanford student case, as presented and analyzed in the previous chapter, where participants' prior beliefs regarding the efficacy of capital

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[173] Stigler and Heibert note cultural beliefs about mathematics itself and how these also influence what teachers do:

> The U.S. lesson is consistent with the belief that school mathematics is a set of procedures. Although teachers may believe that there are other things that must be added to these procedures to get the complete definition of mathematics, many *act* as if it is a subject that is useful for students, in the end, as a set of procedures for solving problems. As noted in the accompanying article, we asked teachers who participated in the videotape study to identify the "main thing" they wanted students to learn from the lesson. Sixty-one percent of U.S. teachers described *skills:* They wanted the students to be able to perform a procedure, solve a particular kind of problem, and so on . . .
>
> Japanese lessons appear to be generated by different beliefs about the subject. Teachers act as if mathematics is a set of relationships between concepts, facts, and procedures. These relationships are revealed by developing methods to solve problems, studying the methods, working toward increasingly efficient methods, and talking explicitly about the relationships of interest . . . In response to the same question, 73 percent of Japanese teachers said the main thing they wanted their students to learn from the lesson was to think about things in a new way, such as seeing new relationships between mathematical ideas . . . The teachers also encourage students to keep struggling in the face of difficulty, sometimes offering hints to support students' progress. Rarely do teachers show students, midway through the lesson, how to solve the problem.

James W. Stigler and James Hiebert, "Teaching is a Cultural Activity," *American Educator,* Winter 1998: 2-4.

punishment as a deterrent for violent crimes ('it is effective' vs. 'it is useless') prevented them from examining fresh evidence presented to them by the experimenters. Whatever evidence was presented was interpreted by the participants in accordance with their prior belief rather than on the merits of the evidence—the evidence that was actually in front of them. In other words, from the perspective of the broader idea of reason, the belief prevented the participants from truly *reasoning* on the matter at hand; the belief hijacked their reasoning. Equally disturbingly, all the while, the participants thought they were reasoning and being very rational as they were clearly able to 'diagnose' faults with the designs of studies that happened to be contrary to their beliefs and thereby able to 'rationally' reject the evidence.[174]

From the perspective of the broader idea of reason, and on its basis, I want to suggest that the American and Japanese participants are in an analogous situation—they are not truly reasoning though it seems they are. Neither the Japanese nor the American teachers are genuinely asking "What are the *actual* competencies of the student"? Rather, no sooner does the student face a difficulty, the American teacher latches on to a culturally available 'solution' to the problem that "he might not have it in him" and no sooner does a Japanese teacher see a student face difficultly, she latches on to a 'solution' floating and readily available in her culture that "he just needs to put in more effort." This phenomenon shows, I believe, that neither teacher is really *reasoning*, in that, neither is examining, investigating, even questioning, what is the real issue is

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[174] In the face of seemingly recalcitrant evidence, one can rationally reject the conclusion by introducing auxiliary hypotheses i.e. in this case, the methods were faulty, hence results are not believable. I revisit these kinds of 'rational' maneuvers in science and in daily life in maintaining pre-established world views later in the chapter. This is reminiscent of Bacon who said that the intellect despises . what comes next in order to safe guard earlier opinions.

with the child. Rather, prior cultural beliefs, "lenses" (ability vs. effort), unexamined for the most part, determine the solution to the child's difficulties rather than an examination of the real causes of the child's difficulties. Just like the Stanford students, the American and Japanese participants too are in the grip of their beliefs which prevent them from inquiring into the matter before them. This illustrates Morteza's insights into the relation of culture and reason noted earlier: "culture as a lens, culture as a barrier, and culture as grips in reasoning."[175]

In both cases, a more rationale course of action would have been to ask, afresh, 'What are in fact the true abilities of the student?' And 'How can we determined them, what are possible measures?' Just as in the Stanford students' case, the rational course of action would have been to examine, afresh, 'What does the evidence itself that is before me suggest?' And one would embark on this investigation with open eyes, without preconceptions. It is this crucial piece of reasoning, that is missing from both parties above. This piece of reasoning is not just a matter of giving reasons; rather, it is a matter of engaging one's reason and truly enquiring.

The gravity of the situation is clear from the point of view of the consequences for education. Because neither is reasoning, on account of deep enculturation, it forecloses in the minds of teachers and parents in *both* cultures explorations into numerous other alternative explanations—perhaps it truly is primarily an issue of ability or perhaps it truly is primarily a lack of effort, or perhaps it's primarily motivation, or upbringing, or the effect of prior experience, or the design of materials, or teacher methods, or parental influence or a combination of them or other countless

[175] See page 131 above.

causes. Ready-made cultural lenses ('it's about ability,' 'it's about effort') limit the horizon of possible explanations, causes, diagnoses and goals. And this, not just on the part of students but also on the part of parents, teachers, policy makers and even on the part of philosophers of education within each culture.

Bringing into play a broader idea of reason enable us to see that, in these kinds of cases, i. the real problem of reason is not a lack of skills in argument identification and evaluation ii. the real issue is the problem of lenses that block participants from truly engaging into the matter at hand, iii. the desired engagement requires a different use of reason than merely giving arguments, iv. though participants are giving arguments they are not truly reasoning and, v. most importantly, because of a lack of reasoning, participants may have a distorted view of reality gleaned through these lenses. With respect to the cultivation of the intellect in education, since this particular 'problem of lenses' is not a problem of a lack of skills in argument identification and evaluation, the efficacy of critical thinking courses (which focus on argument identification and evaluation) in overcoming these kinds of problems would seem doubtful.

Chapter 3.2

Case Study II:

Reasoning about Preschool Ideals and Practices: Japan, China and the United States.

Consider, for starters, the behavior of a child in Komatsudani, a Japanese preschool on the outskirts of Kyoto documented in Tobin, Wu and Davidson's *Preschool in Three Cultures: Japan, China and the United States*:

> On a day we videotaped at Komatsudani, Hiroki started things off with a flourish by pulling his penis out from under the legs of his shorts and waving it at the class during the morning welcome song. During the workbook session that followed, Hiroki called out answers to every question the teacher asked and to many she did not ask. When not volunteering answers, Hiroki gave a loud running commentary on his workbook progress ("now I am coloring the badger, now the pig . . .") as he worked rapidly and deftly on his assignment. He alternated his play-by-play announcing with occasional songs, entertaining the class with loud, accurate renditions of their favorite cartoon themes, complete with accompanying dancing, gestures, and occasional flourishes. Despite the demands of his singing and announcing schedule, Hiroki managed to complete his workbook pages before most of the other children . . .
>
> Work completed, Hiroki threw his energies wholeheartedly into his comedy routine, holding various colored crayons up to the front of his shorts and announcing that he had a blue, then a green, and finally a black penis . . . As the children lined up to have Fukui-sensei (Hiroki's teacher) check their completed work, Hiroki fired a barrage of pokes, pushes, and little punches at the back of the boy in front of him, who took it all rather well. In general, as Hiroki punched and wrestled his way through the day with various of his male classmates, they reacted by seeming to enjoy his attentions, becoming irritated but not

> actually angry, or, most commonly, by shrugging them off with a "That's Hiroki for you" sort of expression. The reaction of Satoshi, who cried when Hiroki hit him and stepped on his hand, was the exception to this rule.[176]

As part of their 'multivocal ethnography' Tobin, Wu and Davidson recorded a typical day in each of the three preschools in Kyoto, Dong-feng (in rural southwest China) and Honolulu then had teachers, parents and administrators in each of these three cites, react to all three recordings. This method facilitated 'insiders' views of goings-on as well as of 'outsiders.' From the perspective of the present work, the different views presented by Tobin and his colleagues, on the very same events, brings into full view the generally invisible but enormously consequential lenses through which each culture sees itself and others—lenses which open new vistas and worlds but which can also limit, blur, and block perceptions and reasonings about the social world including educational matters. In this section of the chapter, I build upon the foundations laid in the previous section on the relationship between culture and reason but I also extend my treatment to the impact of culture on perception of problems, acceptable explanations, definitions of terms and observations. To do this, I present descriptions of

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[176] Joseph Jay Tobin, David Y. H. Wu, and Dana H. Davidson, *Preschool in three cultures: Japan, China, and the United States* (New Haven: Yale University Press, 1989), 18.

Most of the quotes in this chapter are from the above work. Fifteen years after his original field work, Joseph Tobin returned back to the field leading to the publication of *Preschool in Three Cultures Revisited. See* Joseph Jay Tobin, Yeh Hsueh, and Mayumi Karasawa, *Preschool in Three Cultures Revisited: China, Japan, and the United States* (Chicago: The University of Chicago Press, 2009).

With respect to off color jokes Tobin et al. note:

> We should perhaps mention at this point that penis and butt jokes were immensely popular with four-year-old children in nearly every school we visited in all three countries. The only noticeable difference was that such humor was most openly exhibited in Japan, where the teachers generally said nothing and sometimes even smiled, whereas American teachers tended to say something like "We'd rather not hear that kind of talk during group time," and in China such joking appeared to have been driven largely underground, out of adult view. Tobin, Wu and Davidson, *Preschool in Three Cultures*, 18.

Hiroki's behavior in the classroom and his teacher's (Fukui-sensei's) responses and their interpretations from the perspective of the three cultures, Japanese, Chinese and American, as a running example—hence the extensive quotes regarding Hiroki's behavior. Tobin, Wu and Davidson continue their description of Hiroki and his teacher's intervention (or non-intervention):

> During the singing of the prelaunch song, Hiroki, who was one of the four daily lunch monitors, abandoned his post in front of the organ to wrestle with a boy seated nearby. While eating, Hiroki regaled his classmates with more songs and jokes. Finishing his lunch as quickly as he had his workbook, Hiroki joined other fast diners on the balcony, where he roughhoused with some other boys and then disrupted a game by throwing flash cards over the railing to the ground below . . . A few minutes later Fukui-sensei walked out to the balcony, looked over the railing, and said, "So that's where the cards are going". . . Soon several of the children, with the conspicuous exception of Hiroki, ran down the steps to retrieve the fallen cards. This proved to be a losing battle as Hiroki continued to rain cards down upon them. It was now that Hiroki (purposely) stepped on Satoshi's hand, which made him cry . . .
>
> Lunch over and the room cleaned up, Fukui-sensei returned to the balcony where, faced with the sight of Hiroki and another boy involved in a fight (which consisted mostly of the other boy's being pushed down and climbed on by Hiroki) she said neutrally, "Are you still fighting?" Then she added, a minute later, in the same neutral tone, "Why are you fighting anyway?" and told everyone still on the balcony, "Hurry up and clean up [the flash cards]. Lunchtime is over. Hurry, hurry." Hiroki was by now disrupting the card clean-up by rolling on the cards and putting them in his mouth, but when he tried to enter the classroom Fukui-sensei put her hand firmly on his back and ushered him outside again. Fukui-sensei, who by now was doing the greatest share of the card picking-up, several times blocked

> Hiroki from leaving the scene of his crime, and she playfully spanked him on the behind when he continued to roll on the cards.
>
> The rest of the day wound down for Hiroki in similar fashion . . . During the free playground period that ends the day, Hiroki played gently with a toddler and more roughly with some of the older boys. He was finally picked up shortly before 6:00 by his father, making him one of the last children to go home.[177]

Perceptions and explanations of misbehavior

What did Japanese, Chinese and American teachers, parents and administrators 'see' when they saw Hiroki? How did they explain Hiroki's behavior and the teacher's role? What was their reasoning? When the tape was shown to Fukui-sensei and her supervisors at Komatsudani, the ethnographers themselves, Tobin, Wu and Davidson, were curious to know how Fukui-sensei (Hiroki's teacher) would react—whether she would be defensive regarding her seemingly not dealing with Hiroki's misbehavior. To the contrary, say Tobin and his colleagues: "Both Fukui-sensei and her supervisors told us they were very satisfied with the film and felt that it adequately captured what they are about. Indeed, they said, the way Fukui-sensei dealt with Hiroki in the film, including ignoring his most provocatively aggressive and exhibitionistic actions, reflected not negligence but just the opposite, a strategy worked out over the course of countless meetings and much trial and error."[178]

Nothing remarkable at all from the perspective of Japanese insiders at Komatsudani, on the contrary, a worked out "strategy" and nothing to explain! For

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[177] Tobin, Wu, and Davidson, *Preschool in Three Cultures,* 18, 21.

[178] Ibid., 22.

insiders at Komatsudani no serious problem is perceived in Hiroki's behavior. Is it the case then that cultural factors are determining the very perception of a problem? And if so, is culture impacting thinking, reasoning and rationality at the most basic level of the very detection of a problem?

What did Chinese parents, teachers and administrators see? Tobin and his colleagues report that Chinese preschool administrators and teachers who viewed their tape were "outraged" by Hiroki's behavior. A third of their Chinese informants considered Hiroki's fighting as the worse thing they had seen in their tapes. A Chinese teacher wrote in her response: "What a selfish boy! What a bully! He is obviously used to completely getting his own way at home, to having everything he wants, to being a little king. He is so spoiled he has no consideration for others. He thinks the world revolves around him."[179]

The authors note that Chinese teachers, parents and administrators worry a great deal about children being spoiled:

> Many preschool administrators and teachers complained that children in China have become *tai jiao*—too delicate, too dependent, too fussy, too bourgeois. The character *jiao* contains the radical for "horse" and thus etymologically the phrase *tai jiao* carries with it a connotation close to the English *headstrong* or *unreined*. Tai jiao is caused by parents' foolishly giving their children free rein, and it is corrected by teachers' wisely tightening the reins.[180]

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[179] Tobin, Wu, and Davidson, *Preschool in Three Cultures*, 88.

[180] Tobin, Wu, and Davidson, *Preschool in Three Cultures*, 90.

Early, pre-revolutionary Chinese child-rearing texts "warned of the dangers of *ni-ai*, of 'drowning a [child] in love.'"[181] Furthermore, according to Tobin et al., concerns over spoiling are exasperated by what are perceived to be the effects of the one child policy, where four grandparents and two parents shower their love onto the one child (4-2-1 phenomena). One Chinese administrator had no trouble detecting this very phenomena in Hiroki: "He behaves like the worst kind of spoiled single child. I would bet he has no siblings. Do most Japanese families these days have only one child?"[182] And parents are the ones to blame for spoiling and the resultant behaviors. Here is a quote from an article by Chinese authors Tao and Chiu entitled "Psychological Ramifications of the One Child Family Policy":

> Many parents look upon their only child as their great treasure and place all their hope on him or her. They try their best to provide the best nutrition so that the child will be healthy. They do their best to grant the child's various demands (including unreasonable ones) in order to make him or her happy. They try to protect the child from difficulty or danger. They have all sorts of fears and are overly anxious about whatever concerns their child. Thus, they spoil and indulge the child for fear of losing their only treasure. The child senses this and takes advantage of it and will threaten parents in order to fulfill unreasonable demands.[183]

The above quote is from observations and comments from a research article. Are the conclusions based on an *inquiry* or do they echo cultural notions? The concept of

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[181] Ibid., 90.

[182] Ibid., 88.

[183] Ibid., 90.

'spoiled' serves as an explanatory framework for numerous ills as is so clear to Principal Hua:

> Some spoiled children are very stubborn, wild, and aggressive, like the Japanese boy in your tape. These children need to be treated with a firm hand and brought under control before it is too late. But more commonly, spoiled children are weak, soft, fussy, delicate. They don't play with enthusiasm. They don't eat with a hearty appetite, but instead leave food on their plates. The say, "It doesn't taste like the way my mother cooks it." They whine, "The beds at school are too hard. The teachers are too mean. They scold me." They are angry when other children won't yield to their demands.[184]

Bacon noted a major problem of the intellect where the intellect "distorts and discolors the nature of things by mingling its own nature with it." Is it the case here that there has been an inquiry and an investigation into various kinds of misbehaviors such that it has now been discovered, through a thorough and rational inquiry, that very different kinds of traits and behavior (stubborn, aggressive, weak, fussy) are the result of spoiling? Have Chinese parents, teachers, administrators and researchers 'discovered' spoiling as the cause of these traits and misbehaviors? Or is it the case that the concept of spoiled is so readily available as an overarching explanatory framework in the culture that it is readily *projected* on to all kinds of undesirable but very disparate behaviors: 'selfish,' 'bully,' 'used to getting his way,' 'no consideration for others,' 'thinks the world revolves around him,' 'too delicate,' 'too fussy,' 'too bourgeois,' 'stubborn,' 'wild,' 'aggressive,' 'weak,' 'soft,' 'fussy,' 'delicate,' 'won't play with enthusiasm,' 'doesn't eat with a hearty appetite,' 'gets angry when other children won't

[184] Ibid.,

yield to his demands' and countless others? Is it the case here that the intellect is distorting and discoloring 'the nature of things by mingling its own nature with it'? Wither reasoning into the real causes of misbehavior?[185]

And once a problem is diagnosed the cure is not too far either. Principal Hua can readily see the solution to this problem: "These children need to be treated with a firm hand and brought under control before it is too late." As mentioned earlier, *tai jiao*, the tendency to be too delicate, dependent, fussy, bourgeois, in short spoiled, "is to be

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[185] One wonders whether diagnoses of ADHD in the US share a similar mechanism. Note the variety of symptoms coming under it and note how they perfectly describe behaviors 'disruptive' in a US classroom. DSM-5 Criteria for ADHD:

Inattention:

Often fails to give close attention to details or makes careless mistakes in schoolwork, at work, or with other activities.
Often has trouble holding attention on tasks or play activities.
Often does not seem to listen when spoken to directly.
Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (e.g., loses focus, side-tracked).
Often has trouble organizing tasks and activities.
Often avoids, dislikes, or is reluctant to do tasks that require mental effort over a long period of time (such as schoolwork or homework).
Often loses things necessary for tasks and activities (e.g. school materials, pencils, books, tools, wallets, keys, paperwork, eyeglasses, mobile telephones).
Is often easily distracted
Is often forgetful in daily activities.

Hyperactivity and Impulsivity:

Often fidgets with or taps hands or feet, or squirms in seat.
Often leaves seat in situations when remaining seated is expected.
Often runs about or climbs in situations where it is not appropriate (adolescents or adults may be limited to feeling restless).
Often unable to play or take part in leisure activities quietly.
Is often "on the go" acting as if "driven by a motor".
Often talks excessively.
Often blurts out an answer before a question has been completed.
Often has trouble waiting his/her turn.
Often interrupts or intrudes on others (e.g., butts into conversations or games)

Source: Centers for Disease Control and Prevention,

http://www.cdc.gov/ncbddd/adhd/diagnosis.html

corrected by teachers' wisely tightening the reins." Furthermore, as noted earlier, "tai jiao carries with it a connotation close to the English headstrong or unrefined." Notice here how unreined is *written into* the concept of being spoiled. If spoiled means unreined the cure becomes obvious. Spoiled children must be reined-in.

Teacher roles

Tobin and his colleagues continue: "Viewing spoiling as the most serious problem presented by the single-child family policy, Chinese look to preschools as a solution. Preschools provide single children with the chance to interact with other children and with teachers trained to correct the errors of single-child parents."[186]

Spoiling is corrected through *guam*: "The word used most frequently in China to refer to teachers' control and regimentation of children is *guam*—literally 'to govern' . . . When Ms. Xiang told the children to eat their lunch in silence and finish every bite, that was guam. When Ms. Wang got all twenty-six children to squat at once in the bathroom, that was guam.[187] When Ms. Wang criticized one child for squirming and smiling while praising another for sitting straight with her hands behind her back and a serious expression on her face, that, too, was guam . . . *Guam* has a very positive connotation. It can mean 'to care for' or even 'to love' as well as 'to govern' . . . To govern children well is hard work. Chinese believe that preschool children are well behaved not because they

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[186] Tobin, Wu, and Davidson, *Preschool in Three Cultures*, 90.

[187] Ibid., 78-79. Children in this particular school go to a communal bathroom at break time and all altogether.

are born that way but because teachers work long and hard to bring them under firm control."[188]

Spoiling and the need for its correction partly determine teachers' roles. Here is principal Hua again: "Teachers must take charge in the classroom. Teachers must provide structure and order. That's their responsibility. That's what they are there for."[189] Here is a Chinese administrator: "A preschool teacher should never waste time. Unstructured time leads to trouble. We do not have much of the kind of 'free time' in our school that we saw in your tapes of schools in Japan and the United States because we believe it is important for teachers to organize their students' time, to govern (*guam*) the class so children do not have a chance to become wild or aimless."[190] Notice the descriptions "wild," stubborn," "aggressive,"—just like an unreined horse!" Hence, it is no surprise how a Beijing teacher viewed Hiroki and her teacher:

> I think it's terrible that the teacher just stood there while the children fought. If you let a child behave that way in preschool, they will think that it is acceptable to be that way, and he will develop a bad character that may last his whole life. When children misbehave, teachers must correct their misbehavior immediately and make it clear to the children that their behavior is not acceptable."[191]

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[188] Ibid., 93.

[189] Ibid., 94

[190] Ibid.

[191] Ibid., 95

Tobin and his colleagues note that the "Child Development Center of China . . . has a mandate to raise the quality of Chinese parenting and preschool education by coaching teachers and parents in nutrition, education, and 'how not to spoil their single children.'"[192]

Emerging here is nothing less than a philosophy of education whose core foundation seems to be numerous cultural notions rather than systematic inquiry. If children are spoiled and are unreined they clearly need to be treated with a firm hand and reined-in before it is too late. Since well-behaved children are not born that way, teachers need to work long and hard to 'govern' them and thereby correct the spoiling indulged in by parents and grandparents at home. This 'philosophy' also determines how teachers are to correct spoiling and the ensuing classroom environment. Teachers must govern the class so children do not have a chance to become 'wild' or 'aimless,' hence no free time. The need to correct spoiling also determines the focus of teacher education as the mandate of the Child Development Center of China amply indicates.

Thomas Kuhn used the word paradigm.[193] I think it is suggestive and highlights certain notions with respect to the goals of the present study. A paradigm, he argued, is a consensus among practitioners (during the phase of normal science) on such fundamentals things as the ultimate entities in the world, fundamental problems, acceptable and reasonable explanations, acceptable solutions and definitions, amongst other things. The paradigm, to practitioners, is not seen *as a view* on the world. To

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[192] Ibid., 91

[193] Kuhn, *The Structure of Scientific Revolutions*.

practitioners, this is how things really are. Reasoning then occurs within the confines of the boundaries of the paradigm. The boundaries are not seen and never questioned. On the contrary they seem completely obvious to its practitioners. From the perspective of the present dissertation, the force of the paradigm, in this case in the form of deep cultural commitments, forbids a true, rational inquiry into the matter.

Japanese teachers, parents and administrators have their own alternate worldviews and ready explanations. Here is Higashino-sensei, a teacher at Komatsudani:

> I suppose you could say in a sense that Hiroki is spoiled, but we believe that his problem is really the opposite. To me spoiling implies getting too much care and attention, and Hiroki's problem is that he hasn't really received enough of the right kind of attention and doesn't know how to receive care and attention . . . He wants attention and to be cared for [amae], but he asks for it in the wrong way.[194]

He hasn't 'received enough of the right kind of attention' and 'doesn't know how to receive care and attention.' In Japanese eyes, according Tobin and colleagues, Hiroki suffers from an 'inability to be dependent' a disorder of *amae*. Tobin and colleagues note that teachers at Komatsudani "often diffuse children's anger and overcome their stubbornness by assuming that behavior problems such as these are at the heart problems of amae [an inability to be dependent] and responding with concern and sympathy rather than anger or criticism."[195] Furthermore, amae, dependency, is not considered innate but something that "must be learned and developed, and thus

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[194] Tobin, Wu, and Davidson, *Preschool in Three Cultures*, 27.

[195] Ibid., 28.

something that must be taught." Hence, someone diagnosed with "being awkward in the ways of amae, must be given help to overcome this problem."[196] Far from being spoiled, Hiroki is desperately in need of care and attention but finds it awkward to seek for them in the right way. He finds it hard to be dependent and needs be gently taught.

Both views cannot have a foundation in rationality as they are contradictory—but they could have a foundation in culture; in the ready availability of explanatory concepts, spoiled vs. inability to be dependent. From the point of view of a narrow conception of reason, namely argument identification and assessment, members in both cultures are reasoning since they are giving plenty of (good) reasons; there are no shortage of reasons. However, from the perspective of a broader view of the idea of reason—one which includes the reasoner and reason—we see that in some ways members in neither culture are actually reasoning since they are not truly enquiring, investigating the true causes of Hiroki's misbehavior. Rather, they are at the mercy of the culturally available explanations that come readily to mind. Hence, in many ways, they are victims of the power of culture and lenses over their minds. They do not have 'rational control' over their reasonings and hence are not 'rationally autonomous' as Richard Paul might put it.

Psychologies of learning

'Needs to be gently taught' vs. 'reined-in.' A contrary pedagogy accompanies these lenses. And their consequences for educational practice are not insignificant. In total contrast to the Chinese, where the teacher needs to take firm control and 'govern' and rein-in children, the staff at Komatsudani believe "that children best learn to

[196] Ibid., 27.

control their behavior when the impetus to change comes spontaneously through interactions with their peers rather than from above. Thus, Hiroki's best chance to learn self-control lies not in encounters with his teachers but in play with his classmates." Teachers' directives only go so far in Japanese eyes in contrast to Chinese perceptions. Children playing with classmates, interacting with others, learning to solve their own problems, is center stage. Here is an exchange between Fukui-sensei and Tobin, the lead author:

> Fukui: I told Midori and other children that if they felt it was a problem, then they should deal with Hiroki's throwing the cards. If I tell Hiroki to stop, it doesn't mean much to him, but if his classmates tell him, it affects him.
>
> Tobin: But he kept throwing the cards even after Midori told him to stop.
>
> Fukui: Because he is so proud. He won't ever change his behavior if someone orders him to. He'll always do the opposite in the short run. But in the long run, his classmates' disapproval has a great effect on him.[197]

Explanations are ready at hand and though it might not look like the remedy is effective now, 'in the long run' it will have its intended effects. Just like in the Chinese classrooms, though teachers taking firm control may seem harsh now, 'in the long run' it will pay off. 'In the long run' can save many a (cultural) theory from refutation. This is perhaps one of many mechanisms that sustain theories and cultural worldviews.

[197] Ibid., 28.

Goals of preschool

In tandem with pedagogical solutions 'learning best from learning to play with others' and 'his classmates disapproval has a great effect on him' come values and traits that define ideal encounters with teachers and students in a classroom. In a survey of Japanese teachers, cited in Tobin et al.., traits most highly valued in children, were found to be *omoiyari* (empathy), *yasahii* (gentleness), *shakaisie* (social consciousness), *shinsetu* (kindness), and *kyochosei* (cooperativeness).[198]

Tobin and colleagues asked Chinese, Japanese and American parents, teachers, administrators and child development specialists "What are the most important things to learn in preschool?" 80% of the Japanese ranked 'Sympathy /Empathy / Concern for others' as their top three compared to 20% of their Chinese counterparts.[199] They asked, "What are the most important characteristics of a good preschool teacher?" 63% of the Japanese ranked 'Tolerant' as their top three compared to 2% of the Chinese. On the other hand, 35% of the Chinese ranked 'Good at making children study hard (a firm taskmaster)' as their top three compared to none, (0%) of the Japanese.[200] They asked "Why should a society have preschools?" 70% of Japanese ranked 'To give children a chance to play with other children' as their top three compared to 25% of the Chinese.

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[198] Ibid., 31.

[199] Ibid., 190.

[200] Ibid., 213.

And 61% of the Japanese ranked 'To give children experience being a member of a group' as their first choice compared to 12% of the Chinese.[201]

From only the questions and responses cited above, we can see vast differences in values. These differences, no doubt, translate into vastly different practices and perhaps even vastly different student outcomes. Yet, from the perspective of reasoning, members' reasonings about educational matters within a particular culture, for the most part, is undertaken within the confines of these given values. The values themselves are not generally the subject of inquiry. Inquiries are undertaken to determine whether programs and policies are in-line with these given values—but the values themselves are sacrosanct. If at all questioned, they appear obvious to insiders: "Of course it's important to give children experience being part of a group. They are part of a group!" a Japanese teacher might say.

That children need to learn to be a member of a group and learn to be appropriately dependent will sound odd to American ears. Through American eyes, children are *naturally* dependent in the early years but dependency is something that needs to be overcome towards independence and self-sufficiency. A disorder on the dependent-independent scale, in the American context, would mean a tendency to remain overly *dependent* and an inability to become independent. This is reflected in the canonical (Western?) *Diagnostic and Statistical Manual of Disorders* [DSM-5 301.6 (F60.7)] and is unambiguously labeled "Dependent Personality Disorder Syndrome." I did not find any disorder in this manual surrounding being *too independent* and an inability to be appropriately *dependent*. Cultural lenses go deep down. They seem to determine

[201] Ibid., 192.

illnesses themselves. What would a diagnostic manual of mental disorders look like if it had its origin in Japan?

Independence, individualism, individuality rather than groupism are center stage in the US. as Tobin and colleagues note: "It is in their commitment to treating children as individuals that the staff of St. Timothy's differ most significantly from their counterparts in China and Japan . . . Our interviews suggest that Americans hold a profound belief in the essential un-likeness of same-age children in temperament, interests, rate of development, attention span, and intelligence. And with this belief comes an equally strong belief in the right of every child to a preschool curriculum appropriate to his or her unique abilities and needs."[202]

Tobin and his colleagues' interviews with Japanese teachers gave them a very different picture: "Japanese preschool teachers are very reluctant to discuss individual differences in ability among the children in their care and believe that it is their responsibility to see that all children in their care are treated equally" whereas "teachers at St. Timothy's [the US school] speak without hesitation of individual differences among the children and stress the importance of tailoring the curriculum to each child's unique temperament, needs, interests, and abilities."[203]

Here is Cheryl talking about her role at St. Tomothy's:

> As a teacher my job is to work with each child in my class wherever he is at. If a child is ready to read, then my job with that child is to be a reading teacher. Many of our children

[202] Ibid., 145.

[203] Ibid.

> aren't quite ready to read. So my job with these kids is to work with them wherever they are on the skills they need. Some children like Kerry need a lot of work on their problem-solving skills and self-control. I have to give Kerry a lot more individual attention and work more with him than I do with some other children right now. Kerry is a little younger than most of the others and he has a little more trouble with his self-control. But he is getting there.[204]

"Unique" temperaments, needs, interests, abilities, multiple learning styles and many other "uniques" dictates to a large extent, the role of the teacher in US classrooms. That everyone is unique and deserves to be treated as individuals appears so self-evident that it is never questioned; it's never *reasoned about*. What is reasoned about is whether school organization and teacher pedagogy foster this individuality and uniqueness of individuals. Extensive 'reasonings' are conducted within these staunchly held values—if at all questioned they seem patently obvious just as the importance of children coming to see themselves much like others is obvious in Japanese eyes. Though in one sense cultural actors are reasoning, in another sense, when under the grip of values, cultural actors aren't reasoning at all though they are giving plenty of reasons. This state of affairs is reminiscent of Locke's 'miscarriage' of reason where individuals "seldom reason at all but do and think according to the example of others, whether parents, neighbors, ministers, or who else they are pleased to make choice of to have an implicit faith in, for the saving of themselves the pains and trouble of thinking and examining for themselves."[205]

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[204] Ibid.

[205] Francis. W. Garforth, ed. *John Locke's Of the Conduct of the Understanding*, (New York: Teachers College Press), 33.

Class size

With individuality and individual differences comes the value of small classes. And armed with these values comes a 'detection' of a problem with large classes. One American teacher could easily 'diagnose' the trouble in Japanese classrooms: "No wonder there is so much wildness and fighting. It's a wonder there's not more with that many kids in the class." And another: "The worst thing [about Komatsudani] by far is the ratios. 30/1! That's is way, way, too high."[206]

Is it too high? When the ethnographers asked Japanese teachers and administrators whether they would like to have smaller classes they almost always replied yes. While watching a tape of an American preschool with a student / teacher ratio of about eight to one, a Japanese teacher in Kyoto commented: "It must be great to teach in America. Such small classes!" However, when they followed up asking the same teacher: "So you think it would be better to have a class size of ten or twelve instead of twenty-five or thirty?" Yano-sensei responded: "No, I wouldn't say better. Well, maybe you could say better for the teacher, *but not better for the children*. Children need to have the experience of being in a large group in order to learn to relate to lots of kinds of children in lots of kinds of situations."[207] Furthermore, teaching is not like parenting, as another Japanese teacher explains:

> I envy the way the American teachers, with such small classes and such low student/ teacher ratios, have time to play so affectionately with each child. That's how I like to play with my nieces and nephews. That's a good way for aunts and uncles and parents to play

[206] Tobin, Wu, and Davidson, *Preschool in Three Cultures*, 36.

[207] Ibid., 36-37, (emphasis added).

> with their children. But I don't think that's necessarily the best way for a teacher to relate to children. Teaching is different from being a parent or aunt or family friend to a child . . . What I am trying to say is that a teacher should relate to the class as a whole rather than to each student, *even* if this is a little harder or even a little bit sad for the teacher sometimes.[208]

'A teacher should relate to the class as a whole.' Needless to say, we have here radically opposed notions of ideal teachers. Nothing could be better for children than individual teacher attention in American eyes and nothing could be worse in Japanese eyes. Is it an enquiry, an investigation and a deep study that has determined these contrary but very steadfastly held views to the extent that they dictate entire learning and teaching philosophies or is it the case that members in both cultures are seeing the world through their colored lenses but not seeing their lenses?

Tobin and his colleagues elaborate: "As we have noted, Japanese teachers believe in a large ratio of students to teachers to keep teachers from being too readily available to children, for they fear that an overly available and charismatic teacher, whatever her other merits, will tend to discourage children from forming friendships and reacting primarily to one another rather than, as at home, primarily to an adult."[209]

From the perspective of Japanese teachers and administrators, all is well with having lots of children in one class. Indeed, it is desirable! On the contrary, what is really problematic is a low student / teacher ratio and individual teacher attention. Tobin et al. continue: "In the eyes of the Japanese preschool teachers and administrators, then, very small classes and low student / teacher ratios produce a

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[208] Ibid., 37.

[209] Ibid., 38.

classroom atmosphere that emphasizes teacher-student over student-student interactions and fails to provide children with adequate opportunities to learn to function as members of a group." A teacher in Tokyo comments, after watching a tape of an American preschool: "A class that size seems kind of sad and unpopulated." Another Tokyo teacher wonders: "In a class that size wouldn't a child's world be too narrow?" Yago-sensei of Senzen Yochien in Kyoto questions small classes:

> I understand how this kind of small class size can help young children become very self-reliant and independent. But I can't help feeling that there is something kind of sad or lonely about a class that size. Don't American teachers worry that children may become too independent? I wonder how you teach a child to become a member of a group in a class that small?[210]

As mentioned earlier, in American eyes, there are no illnesses linked to becoming too independent only becoming too dependent. Hence, that children may become too independent is not even on the radar. Center stage for the Japanese teacher on the other hand is being a member of the group and being in a large classroom is a way of becoming one.

Reasoning and the 'Goldilocks' effect

Tobin and his colleagues make an astute observation that speaks directly to the purposes of the present study. They noticed what they call a 'Goldilocks' effect when American respondents compared St. Timothy's (a US school) with Komatsudani and Dong-feng:

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[210] Ibid.

> Americans who viewed our three tapes generally found the Chinese preschool "too controlled," the Japanese preschool "too uncontrolled," and the American preschool "just right." On the items [in a survey conducted after watching the tapes] "teachers set limits and controlled children's behavior" and "teachers directed children's activities and play," our American respondents rated Dong-feng as directing and controlling "too much," Komatsudani "too little," and St. Timothy's "just right." On the items asking about the children's mood and activity level, Chinese children were rated as "too controlled," "passive," and "subdued," Japanese children were rated as "too wild and chaotic," and the American children at St. Timothy's as "just right."[211]

Why consider and reason about alternatives when you right? We have here yet another world view with its own windows, diagnoses, causes, and solutions. Reasoning about matters, especially very consequential matters, such as the direction of educational efforts seem to be based on unexamined lenses as noted earlier but worse, these very same lenses are used to *reject all other alternatives*. Instead of holding in check, say, American values and asking afresh 'What about those other alternatives?', 'Is there any merit to them?', participants are here allowing their values (lenses) to kick in as standards no sooner that they consider the other alternatives. In other words, just like the participants in the last section who go by their cultural notions ('effort' or 'ability') these participants are not really reasoning. And just like the Stanford students in the last chapter, reason is held captive by prior (cultural) beliefs and commitments.

From a narrow view of reason, that of participants giving reasons based on evidence where the Chinese give reasons about how and why children are spoiled and the need to rein them in, where Japanese give reasons about difficulties in learning to be

[211] Ibid., 142.

dependent and allowing children to learn to be dependent by playing with others and where Americans emphasize independence and individuality and where each child has a right to a curriculum appropriate to him are reasoning, they are all reasoning. But given the prior, invisible for the most part, lenses *on the basis of which* they give reasons—from the perspective of the broader idea of reason, they are not fully reasoning. The lenses at once prevent them from considering numerous other alternatives and blur their view of reality. As Richard Paul puts it in noting problems of reason: "Most people do not understand the degree to which they have uncritically internalized the dominant prejudices of their society or culture. Sociologists and anthropologists identify this as the state of being 'culture bound'. . . the uncritical tendency to place one's culture, nation, religion above all others."[212]

Virtues of fighting

Most Americans who watched the tape of "A Day at Komatsudani" with Hiroki misbehaving were very disturbed. An American teacher remarked:

> I think it was a mistake for Hiroki's teacher to let him get that far out of control. Children always are testing the limits of what they can get away with. A kid like that is testing you all the time, looking for a consistent response. His teacher looks like she's just ignoring him. It is hard to bring a child like that back under control once he has been allowed to get so out of control. The key is not to let things get so out of control in the first place.[213]

A parent from Chicago remarked:

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[212] Ibid., 21-22.

[213] Ibid., 133-34.

> The way that boy is allowed to behave is bad for the whole class. One child should not be allowed to infringe on the other children's rights. Children should be able to go to school without having to worry about constantly pounded on by other children. They have a right to a calm, secure, atmosphere in the classroom.[214]

The American teachers are, of course, referring to Hiroki hitting and punching through most of the day. Before commenting on this, notice the language that is used. Neither the Japanese nor Chinese educators described the situation as anything to do with rights. Rights talk is quintessentially American. The American teacher above described Hiroki at-least twice as 'out of control' but none of the Chinese or Japanese participants used this phrase. Americans frequently diagnose children as 'out of control' and for a whole host of different reasons: hitting, not standing in line, speaking out of turn, yelling, and screaming. Cheryl, the American teacher quoted above characterized Kerry, twice in a paragraph, as having trouble with 'self-control.' The American 'Goldilocks' phenomena is couched in the language of control (Dong-feng as directing and controlling "too much," Komatsudani "too little," and St. Timothy's "just right"). Moreover, the generally operative theory is that such behavior needs to be controlled early or there will be far worse consequences later: 'nip it in the bud' metaphor.

And something that really needs to be taken care of immediately, in American schools, is hitting not only for the sake of the hitter but more and more so for the sake of other children. Safety of and harm to others have become, of recent, paramount concern to parents, teachers and administrators. Fights are seen as inherently harmful and hence their immediate crackdown. American teachers and parents spend an enormous

[214] Ibid., 144.

amount of time and energy thinking of, reasoning on and figuring out mechanisms to avoid conflicts, prevent fights, finding alternative ways to resolve conflicts ('you need resolve by words'), how to stop fights, debating on appropriate punishments (time-outs), restraints on children, and the like. This is nicely exemplified at St. Timothy's:

> [W]e recorded many examples of children being encouraged to use words for what the staff members call "problem solving." The approach Cheryl used to break up a fight in the block corner is a good example: "Mike, can you tell Stu with words what you want instead of grabbing? . . . Stu, when Mike took the block from you, how did you feel? Did you tell him that made you angry? Did it make you angry?
>
> Cheryl explained her strategy to us when we watched the tape together: "What I am trying to do there is to get them to use words instead of their hands to express their feelings. With kids this age, as soon as they get angry or frustrated their first reaction is to hit someone. I try to get them to realize what they are feeling and to express it verbally."[215]

Children hitting other children is inherently harmful and hence has no place in school in American schools. What could be more obvious than that it's really bad for children to be hitting other children? What better alternative strategy to deal with conflicts than words? And what more effective mechanism than the full involvement and intervention of the teacher at the slightest hint of a fight? Here are some Japanese reactions to Cheryl's interventions:

> Yagi: Wow, that's amazing! Talking directly with such young children about their feelings.
>
> Taniguchi: The Teacher really gets right in there and deals with the problem.

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[215] Ibid., 152.

> Tanaka: Talking with children about disagreements like that . . . it seems a bit heavy, doesn't it? It reminds me of marriage counseling.[216]

What is absolutely ideal in an American classroom appears to be a 'bit heavy' and reminiscent of 'marriage counseling" to Japanese teachers! Tobin et al. report that most Japanese teachers and administrators they talked with reported that fighting is natural and "has a *place* in the informal preschool curriculum" [emphasis added]:

> Our informants were careful to explain to us that fighting, especially among boys, is inevitable and even (within bounds) desirable, as it represents a display of age-appropriate behavior that is part of the human condition and thus part of the developmental curriculum of the childlike child.[217]

When Tobin and his colleagues asked Fukui-sensei why she had not made more of an attempt to break up Hiroki's fights she responded:

> Of course there are times I do intervene, depending in part on whom Hiroki is fighting and under what circumstances, but in general I let them fight because it is natural for boys of that age to fight and its good for them to have the experience while they are young of what it feels like to be in a fight.[218]

And here is Yoshizawa's, the administrator's, point of view:

> If there were no fights among four-year-old children, that would be a real problem. We don't encourage children to fight, but children need to fight when they are young if they are

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[216] Ibid.

[217] Ibid., 32.

[218] Ibid.

> to develop into complete human beings . . . When children are preschool age they naturally fight if given the chance, and it is by fighting and experiencing what it feels like to hit someone and hurt them and to be hit and be hurt that they learn to control this urge to fight, that they learn the dangers of fighting and get it out of their system.[219]

In complete contrast to the American teachers, according to Fukui-sensei and Yoshizawa, it's good for children to fight and have the experience while they are young of what it feels like to be in a fight. Does it not make eminent sense then that kids should be allowed to fight in schools when they are young?

But what about the harm to others? Tobin et al. : "We asked Fukui, Higashino, and Yoshizawa, Komatsudani's director, if it was not a problem for the other children that Hiroki causes so much chaos in the classroom and uses up a disproportion amount of staff time and energy":

> Yoshizawa: No, I'd say it's just the opposite. The children in that class are lucky to have Hiroki there. [Laughing] He makes things interesting.
>
> Higashimi: Its hard on Fukui-sensei, but I wouldn't say it's hard on the other children. By having to learn how to deal with a child like Hiroki, they learn to be more complete human beings.[220]

By learning to deal with conflicts, including fighting, 'children learn to be more complete human beings'! Moreover, it is precisely by fighting that they learn the dangers of fighting and 'get it out of their system.' Notice here an entirely different metaphor of the cure: something is pent up and needs to be released—keeping it pent-

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[219] Ibid., 33.

[220] Ibid., 30.

up (i.e. learning to controlling it) will only make it worse. Just the opposite to the American metaphor cited earlier—nip it in the bud before it gets too late.

Far from harmful, fighting (within bounds) is desirable, age-appropriate, part of the human condition, natural, good for kids to have the experience, helps kids develop into complete human beings, gives kids opportunities to know what it feels like to hit and be hurt and helps them get it out of their system. We have here nothing less than an elaborate theory of the virtues of fighting. Moreover, it is seamlessly connected to other theories, 'better to learn by experience' and 'better to learn from others rather than being told by the teacher.' These principles dictate other practices in preschool: lots of time to interact with children and minimal teacher intervention.

As we can see, numerous and plentiful reasons are given in support the harmful effects of fighting or the virtues of fighting. Is it the case that effects of fighting have been studied, investigated, evaluated and then determined to be harmful or beneficial? What seems more likely is that these notions, through a process of enculturation, are projected onto situations. The situations are being read in terms of them. This raises the fundamental question whether participants are really reasoning in these kind of cases. If we simply take arguments as our focus of reasoning the essential problem remains invisible. From the perspective of the broader idea of reason, we can see that the problem lies not in skills in giving arguments, rather the problem lies in the *reasoner*. Without taking the reasoner and the question of the true engagement of his reason into account we would not be able to detect the real problems in reasoning in these cases.

Perhaps Hiroki is intellectually gifted

Dana Davidson, one of the co-authors of *Preschool in Three Cultures* hypothesized that perhaps Hiroki's misbehavior might be related to him being 'intellectually gifted

and easily bored.' Hence, she suggested to Fukui-sensei and Higashino-sensei that "Hiroki might be quicker and smarter than the other children and that this 'giftedness' (which proved to be very difficult concept for us to express in Japanese) might provide at least a partial explanation for Hiroki's behavior in the classroom." To this suggestion, Tobin and colleagues point out, Fukui and Higashino "looked a bit confused and even taken aback by this suggestion." Here is the exchange:

> Higashino: Hiroki's intelligence is about average, about the same as most other children, I would say.
>
> Davidson: But he finishes his work so quickly. And he looks like he knows the words to so many songs. He just seems bright, gifted.
>
> Higashino: What do you mean by "gifted"?
>
> Davidson: Well, by "gifted" in the United States we mean someone who is exceptionally talented in some area, like intelligence. Like Hiroki who seems so smart, so quick. He has such a bright look in his eyes. We would say that a boy like this has a lot of energy and is so bright that he is quickly bored by school. To me, it seems that his incidents of misbehavior occur when he has finished his work before the other children. He provokes his teacher and other children in an attempt to make things more exciting, better matched to the pace and level of stimulation he needs.
>
> Higashino: It seems to me that Hiroki doesn't necessarily finish his work because he is smarter than the other children. Speed isn't the same as intelligence. And his entertaining the other children by singing all those songs is a reflection not so much of intelligence as it is of his great need for attention.[221]

[221] Ibid., 24.

These different perspectives, Tobin et al. comment, "suggest important cultural differences between Americans and Japanese, not only in definitions of and attitudes toward intelligence, but also in views of character, behavior, and inborn dispositions and abilities." Perhaps 'Higashimo's insistence that Hiroki is only of average intelligence might lie in the great value Japanese teachers and contemporary Japanese society place on equality and on the notion that children's success and failure and their potential to become successful versus failed adults has more to do with effort and character and thus with what can be learned and taught in school than with raw inborn ability."[222]

This value, of course, fits in neatly with the goals of education: "Japanese society in general and teachers in particular view the role of education and perhaps especially of primary and preschool education as to even out rather than sort out or further accentuate these ability differences." Hence, to Japanese eyes, the mention of gifted brings to mind those left behind: "Thus one Japanese preschool teacher responded to our description of programs for gifted children in American preschools by saying, 'How sad that by age of three or four a child might already be labeled as having less chance for success than some of this classmates.'"[223]

Being a member of the group trumps individual achievement. Teachers encourage "children to see themselves as like others in fundamental ways. This includes an effort by teachers to speed up and encourage slower learners and at times to slow down more talented members of the class. Teachers do not view as a disservice this

[222] Ibid.

[223] Ibid., 25.

holding back and slowing down of the more capable students because they believe that students benefit in the long run by developing an increased sensitivity to the needs of seemingly homogeneous group."[224] Once again, to American ears, this will sound discordant with values of individuality and individual achievement in the foreground.

But is Hiroki intelligent? According to Tobin and colleagues and citing the work of LeVine and White (1986) the Japanese rarely view "intelligence" as a neutral, value-free trait. Instead, Japanese view intelligence "as closely linked to moral action and associate the terms *oriko* (smart) and *atama ga ii* (intelligent), when applied to young children, with traits such as *kashikoi* (obedient, well behaved), *eria* (praiseworthy), *ki ga tsuku* (sensitive to others) and *wakareru* (understanding)."

In America, however: "Intelligence or smartness in a child is just as likely to be associated with asocial (naughty) as with desirable behaviors, as can be seen in such expressions as "smart-alec," "too smart for his own good," and "don't get smart with me, young man." But in Japan misbehavior is more likely to be associated with being *not smart enough* (lacking understanding) . . .These linguistic and cultural factors make it difficult for Hiroki's teachers to think of him as especially intelligent. Their reasoning would go, "If he is so smart, why doesn't he understand better? If he understood better, he would behave better."[225]

[224] Ibid., 25-26.

[225] Ibid., 26.

Culture and reasoning

These cultural differences surrounding the question of Hiroki's intelligence highlights yet another way in which culture impacts reasoning. Karl Popper noted how observations are theory laden. I want to suggest here that cultural lenses act as theories—and hence that observations are, in some sense, culture-laden. But theory ladeness and hence culture ladeness can be interpreted in two different ways—the second, more pernicious and more subtle than the first. On the first interpretation, theory/cultural lens highlight certain observations which would go unnoticed were it not for the theory/cultural lens and hence makes them available for reasoning. This is theory ladeness in terms of theory acting as a flashlight—it brings to light certain observations. In this sense, cultural notions bring to light certain observations in the absence of which the observations would not have been noticed. On the second interpretation, theory/cultural notions are *read into* the observations. This would be theory/culture ladeness where the flashlight, instead of having a clear lens has a colored lens and thereby it not only highlights certain observations but colors them as well in accordance with the hue of the lens in the flashlight.

In making a case whether Hiroki is intelligent or not, numerous observations are cited in support of the hypothesis by Dana Davidson and by Higashino. But notice the very *different* kinds of observations highlighted from the American and Japanese perspectives in order to make the case yea or nay: American: 'he knows the words to many songs,' 'misbehavior occurs when he finishes his work,' 'he has a lot of energy' etc. Japanese: 'his intelligence is average,' 'he does not have a mother,' 'he has not received the right kind of attention.' Given the theory/cultural lens of 'acting out because he is intelligent and hence bored' observations pertaining to intelligence and

boredom ('he knows the words to many songs,' 'misbehavior occurs when he finishes his work') become salient in the visual field. Here, theory/cultural lens highlights certain observations. These observations can then be used as evidence in one's reasoning.

But theory can impact observations in a different way—they can color the observations made (rather than merely highlight them). Consider the following 'evidence' cited by Dana Davidson and invoked to make the case that Hiroki is intelligent: 'He provokes his teacher and other children in an attempt to make things more exciting, better matched to the pace and level of stimulation he needs' and 'He has a bright look in this eyes.' Are these pure observations, descriptions of actual behavior? Do we really *see* Hiroki *provoking in order* to make things more exciting, better matched to what he needs? What we actually see is that he is poking and hitting. But we don't see him 'provoking' and we don't see him doing this 'in order to make things more exciting better matched to the pace and level of stimulation he needs.' The latter, it seems, are simply projections of the theory / cultural lens that is being argued for. Do we really see Hiroki having a 'bright look in his eyes'? Clearly not. But given the theory / cultural lens that he is acting out because he is bright, his eyes appear bright. To put it in different words, these supposed observations and evidence presented in support of the theory are projections of the very theory /cultural notion that is being supported; the theory is *read into* the supposed observations. The Japanese case does not fare any better. Consider the observation: "He has not received enough of the right kind of attention." Is this an observation? It looks more like the theory itself namely that he has a dependency disorder. The flashlight of culture is coloring what is observed. Prior cultural notions are already coloring the very evidence that is brought in support of the

cultural notions. This fact severely limits the scope of genuine reasonings and objective inquiries into the matter in question as the evidence itself is tainted.

The power of fundamental theories, or lenses, is that though they color they themselves are not seen. American educators do not represent to themselves that 'fighting is harmful in the classroom, conflicts are bad.' If at all brought to consciousness, say, from a different vantage point, the cultural notions appear to be obviously true. Similarly, 'students should learn to be independent,' 'teachers should promote self-esteem,' 'students should get individual teacher attention,' and 'teachers should promote individuality.' If at all brought to consciousness they not seem as mere assumptions, even against a comparative background. They are seen to be completely and self-evidently true. Any justification of say, the value of independence, will rely on this value. Justifications will only invoke synonyms 'it's better to be one's own man,' 'it's better than loosing oneself in the group,' 'better to be autonomous.' But these are all simply re-descriptions of the value of independence. We seem to be caught in a vicious circle. And this, because these values are not simply values that we happen to have—rather they have become our standards of *judgment*. It is through them that we judge other things. Hence, the Goldilocks effect (my culture is just right), the persistence of cultural notions and their effect in blurring reality.

From the perspective of rationality and reasoning, seeing these as self-evident or emphasizing them over others *forecloses* other possibilities of other goods and other evils and hence forecloses *enquiry* into these other possibilities. Perhaps some fighting may be good in that we become more graphically and deeply aware of pain from physical aggression when we are young, perhaps some dependency is good as we might form closer bonds with others, perhaps too much independence is not good as it

may weaken community feeling, and perhaps too much teacher attention may not be good as children may not learn to solve their own problems. Lenses, drastically limit possibilities and investigation of alternatives; they limit reasoning. This is reminiscent of Bacon's men of dogma, the so-called 'reasoners": "the reasoners resemble spiders, who make cobwebs out of their own substance." But these cobwebs are not perceptible from a conception of reason that emphasizes merely reasons, principles, justifications and arguments. These are made visible when we take into account elements in the broader idea of reason, namely, when we include in our conception such things as the reasoner, reason, reality, content, problems of reason, uses of reason and their relationships.

Chapter 4

The Cultivation of the Intellect in Education: Goals and a Research Program

In this concluding chapter, having demonstrated the problem of lenses in reasoning in previous chapters, I briefly review historical goals and educational programs for the cultivation of reason. Then, through select examples, I indicate a more promising approach and present an overarching goal for the cultivation of reason in education stemming from the broad idea of reason discussed in previous chapters. I end with a call for a specific research program for the cultivation of reason in education to realize the goal.

In the last Chapter, I demonstrated the problem of lenses in reasoning, specifically the problematic role of cultural lenses in the reasoning process. I showed how cultural lenses (such as effort vs. ability; lots of free play with other children vs. structured time; minimal teacher intervention vs. individual teacher attention; empathy vs. independence, etc.) may distort and color apprehension of reality. Furthermore, I showed how cultural lenses may cut-short the reasoning process. Instead of conducting a genuine inquiry into a particular subject matter (e.g. 'What is the actual cause of Hiroki's behavioral problems?'), cultural lenses quickly insert themselves as 'solutions' dictating the results. Under the grip of lenses, the individual in question (whether a teacher, a student, a parent, an administrator, a philosopher of education) is not really reasoning since the result of his enquiry is being pre-determined by his lenses. He is not using his reason though he is giving plenty of reasons. Finally, I showed how the problem of lenses can be understood and appreciated from a broader view of reason, one that takes into consideration the reasoner, reason, reality, problems of reason, uses

of reason, content of reasoning and their relationships with each other. A narrow view of reason on the other hand, namely one limited to evaluation of argument, does not bring the problem of lenses to light. If our recognition of the problem of lenses is correct and if our diagnoses of this problem is accurate (not reasoning, not using one's reason) what might be the way forward?

Education of the intellect

As noted in Chapter 1, philosophers, philosophers of education and curricular frameworks have, over the ages, looked to education as a solution. Plato noted how the 'instrument worth ten thousand eyes' is rekindled through education when it has been blinded by other ways of life. [226] Locke noted that 'great care should be taken of the understanding, to conduct it right, in the search of knowledge, and in the judgments it makes.'[227] The Committee of Ten understood education as sure means for genuine 'mental training.'[228] Dewey argued for an education that engenders 'reflective thinking.'[229] Hutchins insisted that if education is rightly understood it will be understood as the cultivation of the intellect.[230] In more recent times, Scheffler noted how 'rationality is a fundamental cognitive and moral virtue' and that it should form an

[226] Plato, *Republic,* 527d-e.

[227] Francis. W. Garforth, ed. *John Locke's Of the Conduct of the Understanding*, 33.

[228] Mackensie, "The Report of the Committee of Ten," 147.

[229] Dewey, *How We Think,* 9.

[230] Hutchins, *The Higher Learning in America*, 67.

objective of teaching.[231] Lipman forthrightly noted that 'the most important thing we can do for children is teach them to think well.'[232] Richard Paul noted that education 'implies a self-motivated action one's own thinking.'[233]

But while thinkers have looked to education, it is a real question whether their suggested educational programs are efficacious for the full cultivation of the intellect. Plato's educational recommendations, though he emphasized that an education concerning reason is not one of 'putting sight into the blind' but one of 'turning the soul,' have come to be interpreted, over the years, as an initiation into the disciplines; mathematics, physics, history, literature, and the like. The history of liberal education as 'freeing the mind' is often traced back to the ancient Greeks, but with the original intention of freeing reason from its entrapments completely buried with the gradual emphasis on (content) knowledge for its own sake. Locke, though acknowledging the 'instrument of reason' and its sometimes lack of engagement, in the end, emphasized a proper upbringing to curtain the pull of the passions and a rigorous training in algebra so that students will become accustomed to follow 'chains' of reasoning. Mathematics became his model of ideal reasoning. [234] The Committee of Ten primarily emphasized disciplinary knowledge as a vehicle for mental training.[235] Dewey emphasized a search

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231 Scheffler, *Reason and Teaching*, 78

232 Lipman, *Thinking in Education*, 22.

233 Richard Paul, "Critical Thinking, What, Why, and How," 8-9.

234 Francis. W. Garforth, ed. *John Locke's Of the Conduct of the Understanding*, 51-52.

235 Mackensie, "The Report of the Committee of Ten," 147.

for grounds for belief recommended a scientific attitude of mind.[236] Edward Maynard Hutchins, though emphasizing education as a means for fulfilling the function of man *qua* man as one of exercising reason (along Aristotelian lines), ultimately suggested a study of the classics; Euclid's Principals, Newton's Principia, Milton, Shakespeare, and the like.[237]

Contemporary educational programs in the area of the cultivation of the intellect, namely critical thinking, fairminded critical thinking, and initiation into the disciplines, despite surface differences are focused on argument identification and evaluation, evaluation of elements of thought and giving, and seeking reasons based on principles. But argument identification and evaluation are only an aspect of reasoning and hence insufficient for the full cultivation of the intellect. As shown in Chapters 2 and 3, the best 'critical thinkers,' those well versed in argument identification and evaluation, when it comes to issues related to culture, may have great difficulty in effectively reasoning and investigating matters afresh. Locked into a particular way of seeing, a way of seeing which appears obvious, they are likely to take this view for granted and contrary views as errant. In one culture it is primarily about 'effort,' in another, 'ability' is emphasized much more. Hiroki's behavior, in one culture, is diagnosed as resulting from being spoiled ('being drowned in love') and in another as resulting from not having enough of the right kind of love. Small class sizes appear obviously better in one culture (more individual teacher attention) and appear obviously harmful (lonely, unpopulated, minimal chance of interacting with others) in another. Reasoning seems to

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[236] Dewey, *How We Think*, 9, 188.

[237] Hutchins, *The Higher Learning in America*, 77-79.

take place within the confines of these 'lenses' rather than on the lenses themselves. Yet, plenty of reasons and arguments are given in support of worldviews in accordance with the lenses and plenty of reasons and arguments are given against other world views contrary to these lenses. Cultural actors, even the best of critical thinkers, are likely to reason only within their own cultural worldviews. Putting aside cultural lenses is no easy task.

Given the limitation of historical and contemporary philosophies of education with respect to the full cultivation of the intellect, I am inspired by Morteza's suggestion that the fundamental curricular question in the area of reason and education is "How do we help students remove their (colored) lenses such that they can truly begin to reason?"[238] Keeping the broader idea of reason in mind, I interpret this to mean an education that will enable students to become aware of thier lenses, put them aside, and reason afresh instead of relying on pre-given and for the most part, unexamined notions which hijack ones reasoning. How do we educate the intellect in *this* sense?

An alternate direction for the cultivation of the intellect

In the present paper, no claims are being made for an educational solution. Rather, what is being suggested is a direction and a focused, empirically based research program, with the above focused question as setting the parameters of research and with a broader view of reason in the foreground. Let me illustrate the direction of an educational program through some examples.

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[238] Monsour Morteza, "Philosophy of Reason" (unpublished manuscript, May 31, 2016), Word file.

Consider an experiment devised in the field of visual cognition by Christopher Chabris and Daniel Simons. Students watch a short clip of two teams of three people each (one team wearing white shirts, the other black shirts) in a circle bounce-passing a basketball to each other and are asked to count the number of passes made by the white team. At some point during this clip, an individual dressed in a gorilla suit walks right in the midst of these of players and thumps his/her chest for a couple of seconds than leaves. Repeated studies of participants viewing this clip have shown that about half of the participants fail to see the gorilla at first viewing. When the clip is replayed, without having to focus on the number of passes, viewers are astounded as to how they missed the gorilla 'right in front of them.' For Chabris and Simons, this experiment demonstrates "we are missing a lot of what goes on around us, and that we have no idea that we are missing so much."[239] Daniel Kahneman, in his *Thinking Fast, Thinking Slow,* in commenting on this experiment puts it well: "[W] can be blind to the obvious and we are also blind to our blindness."[240] From the perspective of the present work, this experiment can be seen as exemplifying to students, in a simple and experiential way, how lenses can block reasoning. Because of the involuntary injection of the lens of 'what is to be ordinarily expected,' inquiry and investigation of what is actually in front of us is cut-short leading to a distorted view of the matter. Furthermore, we are oblivious to the distorted view.

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[239] The experiment is described and available on-line at the following address: http://www.theinvisiblegorilla.com/gorilla_experiment.html. See also Christopher Chabris and Daniel Simons, *The Invisible Gorilla* (New York: Crown, 2010).

[240] Daniel Kahneman, *Thinking Fast and Slow* (New York: Penguin, 2012), 24.

Consider another experiment along these lines. One group of participants is given the following passage:

> Carol Harris was a problem child from birth. She was wild, stubborn, and violent. By the time Carol turned eight, she was still unmanageable. Her parents were very concerned about her mental health. There were no good institutions for her problem in her state. Her parents finally decided to take some action. They hired a private teacher for Carol.

Another group of participants is given the same passage with "Helen Keller" substituted for "Carol Harris." Studies have shown that when participants are asked a week later whether the sentence "She was deaf, dumb, and blind" was in the passage, fifty percent of students who read the passage as about Helen Keller mistakenly thought they had seen the phrase in the passage but only five percent who read the passage as about Carol Harris made that error. [241] This experiment also vividly shows the impact of lenses. Those who read the passage with the 'Helen Keller' lens inadvertently projected onto their memories their prior knowledge of Helen Keller inhibiting a true survey of their memories.

Consider a third example. A piano teacher notices that his student continues to look at this hand rather than only the music sheet while playing the piano despite knowing that he ought not to. The teacher helps the student by covering the student's hands with a piece of cloth.[242] In this example, the student looking at his fingers to determine which keys to depress can be interpreted to mean that he is using the lenses

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[241] Experiment by R.A Sulin and D.J. Dooling cited in Alvin Goldman, *Epistemology and Cognition* (Cambridge: Harvard University Press, 1986), 209.

[242] I am indebted to Mansour Morteza for this example and its implication for the present work.

of his senses rather than using his head. And by covering his hands, the student no longer has access to the vehicle of the senses and is forced to use the power of his mind. In this case, the teacher blocks the use of one type of lens (the lens of the senses) and enables the student to use the resources of his mind.

These experiments and practical means may look simple. But they illustrate important points in light of the present work. Behind these deceptively simple examples is a broader idea of reason (reasoner, reason, content, reality, problems of reason) and broader notions of the use of reason. All three examples illustrate the force of lenses in one's thinking. The first two (gorilla and Helen Keller) show how problems in the reasoner, in this case, the problem of viewing reality through colored lenses can distort apprehension of reality. All three examples show how lenses hijack reason cutting short inquiry and investigation. The last example (looking at one's fingers while playing the piano) shows how assistance from an educator can help block a particular lens so that the student can begin to use his intellect. The first two (gorilla and Helen Keller examples) force the question 'What do I actually see without my lenses?' and the third 'How do I move my fingers (without going through the lenses of the senses)?' In all of them, there is a display and an indication of the virtue of an *engagement* of an instrument which otherwise is not engaged but held captive by the lens.

What is being argued for here, through these practical examples, is not an education through these specific means but the principles behind them; *to enable students to block their lenses so that their own reason gets engaged and the actual process of inquiry can begin*. It is an education, through tangible and practical means, to enable the individual to reason by helping students release the grip of lenses on their minds.

An education along these lines is premised on several factors. First, it is clear from the many examples in the previous chapters and the simple examples presented here, that problems of reason are not limited to argument identification and assessment. The individual who has been told by the experimenter that she is very good at distinguishing genuine from false suicide notes is giving reasons as to why she thinks she is competent at distinguishing suicide notes. She is competent at giving reasons and her reasons, based on the reasons themselves, are entirely reasonable. Yet, we know that her entire reason giving exercise is tainted and infected by the authoritative comments made earlier by the experimenter. In a very real sense, her reasonings are not her own but in the service of the experimenter's remarks regarding her competency. And yet, her arguments, in and of themselves, may be very reasonable. Indeed, the more competent she is at giving arguments, the more reasonable will be her arguments. Yet, all the while, she is not truly reasoning. The authoritative comments of the experimenter are exercising a grip on her as she gives reasons, almost as if the experimenter has cast a spell on her and she is under the spell when she gives reasons. The real problem is not in her skills at presenting arguments or the quality of her arguments but in the authoritative effect on her psyche of the experimenter's earlier comments.

Second, these examples of failures in reasoning and of overcoming lenses in reasoning also manifest a different *use* of reason than one of merely evaluating arguments. When an individual, say, through distancing, attempts to remove his current 'doom and gloom' lenses, he is exercising his reason. He is attempting to put aside his current lenses and inquire into what is truly the case. But this use of reason is not one of giving arguments at all or giving reasons. It is one of i) recognizing a current

barrier ii) removing that barrier and iii) and then truly investigating. When an individual tries to undo the "what is to be expected lens" he is exercising his reason. Conversely, when he doesn't, he fails to reason afresh. An education along these lines leaves open the question, what *are* all the uses of reason? What does reason do, besides giving and evaluating reasons? As argued in the preceding chapters, when Socrates raises a series of profound questions, he is ushering an entirely new framework of thinking. And this, through a use of his reason, a use which is not one of justification and testing propositions. His genius does not lie in giving and assessing reasons. His genius lies in giving birth to new areas of investigation in philosophy, areas which were not even imagined by the pre-Socratics. And, he does this, of course, through his use of reason. In Chapter 2, we noted the immense difference between evaluation and construction and where skills of evaluation are not the same as skills of construction. The quality controller makes use of very different skills than does the engineer and no amount of quality controlling will make one an engineer. The engineer evaluates but he does a lot more than evaluate. By starting with an understanding of the broader idea of reason this education leaves open the question whether reason is like a hammer with only one use or more like a Swiss army knife which can perform numerous functions. Imagine the vast difference between what a Swiss knife can do and what a hammer can do. Some Swiss knives have a hammer. So a Swiss knife can do everything a hammer can and so much, much more. An education along these lines leaves open the real possibility that students will come to see their own reason as a Swiss knife rather than simply as a hammer. Consider the phenomenal difference in achievement in human civilization in educating a person merely in evaluation, as opposed to educating a person in all the uses of reason?

Third, these examples, and all others mentioned in the present work bring to light other essential elements in an adequate conception of reason. For example, a problem in the *reasoner*, stops one from using his *reason* which stops him from seeing *reality* as it is.

Stemming from the broad idea of reason, and illustrated in the examples above, is an attendant philosophy of education with respect to the intellect that I find very promising. In his manuscript Morteza argues:

> Goals of education should include an adequate understanding, internalizing, application, and practice, of the idea of reason, consisting of reason in itself, the use of reason, the problems of reason, contents, reality, the reasoner and their relationships.[243]

The goal here includes understanding and internalizing not just an aspect of reason but a much more comprehensive notion of reason. To realize this goal in education will require intensive research in several pertinent areas. Below I outline a focused research agenda in philosophy and philosophy of education for the cultivation of reason in education.

A research program for the cultivation of the intellect

First, it will require a thorough philosophical study of reason in its own right. As noted in Chapter 1, tremendous disagreement obtains on the very *conception* of reason in the history of philosophy. In some passages, it is clear that Plato conceives of reason as an instrument but where it can become subservient to appetite. Hence, it needs to be pointed in another, more noble direction. Bacon, though acknowledging reason as a

[243] Monsour Morteza, "Philosophy of Reason" (unpublished manuscript, May 31, 2016), Word file.

faculty, speaks of the intellect more in terms of the human 'understanding' and conceives of it more as an entity that reflects than an entity that acts. [Perhaps there is a conflict within Bacon himself.] For Bacon, the solution to the intellect's shortcomings lies in a method, the method of induction. Locke, on the other hand clearly conceives of reason as a faculty and even more so, as a natural and noble faculty. Shortcomings arise as a result of not using the faculty or in employing faulty standards. Rousseau suggests that reason as a faculty is the last one to develop and the most difficult and hence cannot itself be the object of early education. That would be 'to begin with the end, to want to make the product the instrument.' Dewey downplays the notion of a faculty altogether and focuses instead on thought and 'the grounds of belief' and the evidentiary basis of conclusions. Hutchins, in contradiction to Dewey, conceives of the intellect more as a repository and emphasizes disciplinary knowledge. Peters and Hirst conceive of the mind as essentially undeveloped until it is initiated into the intellectual products of a civilization. Contemporary philosophers of education, Ennis and Paul, much like Dewey, are silent on the nature of the intellect or reason. Their exclusive focus, as shown in Chapter 2, is on the desirability of evidence, good arguments, reasons and principles and reasonable conclusions on the basis of reasons and principles—in a word, on justified arguments. As is apparent, conceptions of the intellect dictate to a great extent educational remedies and goals for the intellect. Hence, it is vital that we engage in an earnest, philosophical investigation into the intellect itself. From here, a sound philosophy of education can begin to be constructed with a clear focus on *what exactly it is that will be educated and why.*

Second, as indicated in this study, it is somewhat puzzling to have as a goal of education the cultivation of reason without a deep understanding of problems besetting

reason. Hence, inquiry into pertinent problems of reason is also indispensable. This enquiry can start with historical philosophical insights into problems of reason (some of which I documented in Chapter 1) but can be extended to include studies from the empirical sciences including psychology, cognitive science, educational psychology, anthropology and other disciplines. Findings in these areas can be investigated from the perspective of impediments, shortcomings and barriers in reasoning. While there is already much in these disciplines that is relevant to reason, its relevance has not been appreciated and hence learnings have not been mined. Furthermore, when reasoning has been studied directly in these disciplines, it has been studied primarily in terms of 'inference' (especially in cognitive science, beginning with Peter Wason's famous card experiment to determine confirmation bias, inspired by Popper) and not in terms of reason in the broad sense Beginning with problems noted by philosophers and extending this enquiry to include the empirical studies would also have the benefit of bridging the gap between philosophers of education and say, psychologists of education studying the science of learning. Currently, there is no interaction. Philosophers of education, for the most part, theorize independently of empirical studies pertaining to learning. In my view, this is an untenable divide between what philosophers of education consider their own 'normative' tasks and the 'descriptive' tasks which are considered to be the purview of empirical scientists. Normative goals of education, for one, as indicated in the present study, ought to be formulated with an understanding of the 'descriptive' (and very real) problems of reason. A thorough study of problems of reason conducted through multiple disciplines is also vastly overdue and should inform any educational endeavor for the cultivation of reason.

Lastly, also as indicated in previous chapters, the pedagogy of contemporary programs relies, for the most part, on explaining, telling and urging. It relies on readings, book exercises and goading as their methods without having inquired into their actual efficacy. But it is vastly insufficient to simply *tell* or *urge* students to be open-minded, to reason more effectively, to develop intellectual virtues, to overcome lenses. The question that needs to be asked, from a psychology of learning perspective, is what are some effective ways of helping students become open-minded, to enable them to remove barriers in reasoning and to enable them to reason. Far too much has been taken for granted in this area. In summary, the education of the intellect ought to be based on the specific goal of internalizing and understanding the idea of reason in its full sense and on a focused research program into the nature of the intellect, its problems and the best pedagogy for overcoming these problems.

One potential fruit of this enormous undertaking is nicely described by Thomas Nagel. Nagel, in his oft-quoted *The View from Nowhere*, locates the fundamental problem of "objectivity" in the fact that "we are small creatures in a big world of which we have only very partial understanding, and that how things seem to us depends both on the world and our constitution." We can never escape the fact that we view the world from somewhere and "we can add to our knowledge of the world by accumulating information at a given level—by extensive observation from one standpoint." "But" he continues:

> we can raise our understanding to a new level only if we examine that relation between the world and ourselves which is responsible for our prior understanding, and form a new conception that includes a more detached understanding of ourselves, of the world, and of the interaction between them. Thus objectivity allows us to transcend our particular viewpoint and develop an expanded

> consciousness that takes in the world more fully. All this applies to values and attitudes as well as to beliefs and theories. [244]

We might add, all of this also applies to lenses. An education along the lines argued in the present chapter is a meta-understanding of reason—an education whose goal is also reasoning on reason. It is to introduce to students a philosophy of reason itself, with the ultimate goal of reasoning with full awareness rather than blindly falling victim to distorting lenses available at every turn. If, as Plato remarked, the instrument in every soul is worth more than ten thousand eyes, is it not befitting that an ultimate education should aim at an understanding of this most valuable entity in the universe? A research program on a philosophical study of the intellect, an empirical study of problems of the intellect and an empirical study of effective pedagogies for overcoming these problems promises to move us towards more rationalized curricula for the cultivation of the intellect in education. Imagine possible lives[245] through this kind of an education.

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[244] Thomas Nagel, *The View from Nowhere* (New York: Oxford University Press, 1986), 5.

[245] I am indebted to Mike Rose for this fine phrase. Mike Rose, *Possible Lives: The Promise of Public Education* (New York: Penguin: 1995).

Conclusion

Aristotle noted that we are rational creatures. But philosophers over the ages have also noted that the human intellect is fraught with problems. Plato observed how we are like puppets of the gods where cords and strings 'tug us about' in contrary directions. Bacon most acutely noted how the human understanding 'is like a false mirror' which distorts and discolors the nature of things by mingling its own nature with it. More perniciously, how the intellect, once it adopts an opinion 'draws all things else to support and agree with it.' Locke observed a class of men who 'seldom reason at all but do and think according to the example of others' saving themselves the trouble of thinking for themselves. A contemporary philosopher of education notes that though it is our nature to think 'much of our thinking, left to itself, is biased, distorted, partial, uninformed, or down-right prejudiced.'

Meanwhile, philosophers, and educators over the ages have urged the cultivation of reason and rationality in education. This raises the all-important question of 'How?' How is the cultivation of the intellect to be achieved in education? In the present dissertation, I examined three educational programs for the cultivation of the intellect: though critical thinking as proposed by Paul Ennis, through fair-minded critical thinking as proposed by Richard Paul, and through an initiation into the disciplines as proposed by Israel Scheffler. After a detailed examination, and on the basis of the broader idea of reason as proposed by Morteza, I noted how underlying all three programs is a much too narrow view of reason; one limited and tied to evaluation (whether of argument, or elements of thought or reasons and principles). But reason and rationality are broader than evaluation. Furthermore, problems of reason and rationality are not limited to problems of argument. Hence, I argued, an education in

the above programs is insufficient for the full cultivation of reason in education and certainly for overcoming problems of reason other than problems in argumentation.

One problem of reason I investigated in the present work such is the problem of cultural lenses in reasoning. I showed how numerous (colored) "lenses" having their origin in culture, may, at times, prevent the full exercise of reason—prevent true investigation and inquiry of the matter at hand cutting short the reasoning process. The problem of lenses is not limited to the reasoning of students, but impacts reasoning of teachers, administrators, and policy makers. Cultural lenses may also determine educational philosophies and national educational directions.

As a way forward, I intimated a direction for the cultivation of the intellect in education; a direction in curricular philosophy that brings awareness of lenses and helps students block their lenses such that they are then able to apply their reason to matters at hand. This direction is undergirded by a philosophy of education where the goal is to understand, internalize and apply the broader idea of reason. In order to realize this goal, I suggested a focused research program in three areas.

An endemic issue facing the cultivation of the intellect in education is the uncertainly with respect to *what it is that needs educating*—and this is directly tied to the plethora of philosophical conceptions of the intellect and reason, some of which are contradictory. Within the history of philosophy reason is said to be a faculty, at other times there is no mention of a faculty. At times, it is a noble faculty at other times it is tainted. In more recent times reason is conceived almost exclusively in terms of inference or the practice of giving and seeking reasons. As way through this morass, I suggested a focused philosophical inquiry into the intellect itself.

Second, an education for the intellect ideally ought to be premised not only on goals for the intellect but known problems of the intellect as well. Though problems of the intellect have been noted by philosophers in history, contemporary philosophy of education, with very few exceptions, is silent on the matter preferring instead to focus on arguments and pitfalls in argumentation. This is a serious lacuna in contemporary research in philosophy of education and one that ought to be overcome if we hope to overcome problems in reasoning in general and not just problems in argument identification and evaluation. Hence, I suggested a multidisciplinary inquiry into problems of reason and rationality.

Finally, as noted in the dissertation, instruction geared towards the cultivation of the intellect has relied almost exclusively on texts, analyses of passages, and on telling and urging. But it is a real question whether these methods are at all efficacious. For too long traditional methods have simply been taken for granted. Hence, I recommended an empirical study into effective methods for the full cultivation of reason in education. Through this research program, undergirded by the broader idea of reason, I believe, we can move towards a much more rationalized philosophy of education with respect to the fuller cultivation of reason in education.

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