3.

The Implications of the Dialectical Tier for Critical Thinking

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Most theorists agree that a thinker who thinks critically must be able to deal with arguments, that is, he or she must be able to construct, interpret, evaluate, and criticize arguments. A critical thinker should also have the ability to process arguments: to take criticisms of his or her views, and to engage critically with the arguments of others.

I have recently proposed that an important aspect of argument has been under-represented in theories of argument. In *Manifest Rationality* (2000), I argued that one's theoretical apparatus for understanding argument is incomplete unless it contains the concept of the "dialectical tier" — a layer of argument in which the arguer discharges his or her dialectical obligations by anticipating and responding to objections, criticisms, and so on.

If my view is correct, then critical thinkers must possess, as part of their argumentative skills, what I call dialectical skills. They must be familiar with the standard objections to their positions and respond to them, facing off against alternatives. This implies an extension of our understanding of critical thinking skills. Although critical thinking theorists traditionally have concurred that skills in argument are a necessary part of critical thinking, they have not taken the dialectical components of these skills into account.

The proposal to include what I call **dialectical skills** in the skill set of the critical thinker has important implications for many issues, including the following:

1. how we evaluate and/or criticize arguments;
2. how we teach our students about argument; and
3. how we test for critical thinking.

In this chapter, I attempt to flesh out these implications. The next section begins with some comments on the problems that arise when one tries to define critical thinking. This is central in a discussion of assessment issues as they relate to critical thinking. The attempt to construct a valid test for critical thinking remains compromised by the sheer **diversity of conceptions of critical thinking** and the assorted underlying theories. I discuss this problem at greater length in Johnson (1996), and I want to review the current situation in light of that discussion to see (a) whether there has been any improvement in the situation (I do not think there has been), and (b) if the standoff between different conceptions necessarily compromises our ability to test for the argumentative skills that we associate with critical thinking (I do not think it does). This is followed by a discussion of the dialectical tier and its implications for understanding the argumentative skills of the critical thinker. In the last section of the chapter, I discuss the implications for all of the issues listed above, especially the testing of critical thinking.

The Nature of Critical Thinking: The Definition Problem

In Johnson (1992) I discussed, in detail, the problem of defining critical thinking. Briefly, the problem is that there are many definitions of critical thinking, all of which propose to explicate the same idea, yet they are not in any obvious sense the same definition. There are important differences that separate the Ennis (1987) and the McPeck (1981) definitions, these two definitions from the Paul (1982) definitions, and so on. For example, McPeck's definition is closely wed to his claim that critical

thinking is discipline specific. Paul, a generalist, takes a different view.

In the concluding section of my 1992 paper, I proposed a moratorium on the attempt to formulate definitions. I classified the prevailing definitions as stipulative and proposed a set of criteria for such definitions.[1] Such a change does not materially affect the point I made: that any definition should be broadly reflective of current practice and should not be idiosyncratic. I made four other suggestions.

1. The definition should be imbedded in a theory of critical thinking.
2. The definition should make plain why critical thinking is "critical" thinking, that is, the force of the term "critical" should be evident. It should make clear how this type of thinking differs from just plain old thinking, or good thinking.
3. The definition should yield assessment tools. (Different modes of assessment would follow from different definitions.)
4. The definition should not assume an *a priori* relationship between critical thinking and problem-solving, creative thinking, or any other cognitive operation.

My proposal and suggestions appear to have had no effect. New freestanding attempts to define critical thinking continue to appear with little awareness of, or sensitivity to, the dialectics of the situation as I have outlined them.

Some textbook definitions

It seems to me that almost everyone who works in the critical thinking area feels the need, indeed the right, to offer his or her own definition of critical thinking. This trend is certainly evident in the work of textbook authors, some of whose efforts (but only some) appear to be informed by the scholarly literature. Consider

two fairly recent definitions from critical thinking texts. Parker and Moore (1992) state, "Critical thinking is simply the careful, deliberate determination of whether we should accept, reject, or suspend judgment about a claim — and of the degree of confidence with which we accept or reject it". Their focus, which is on probating claims, seems too limited. It ignores arguments, inferences, and explanations.

Romain (1997) defines critical thinking this way: "Critical thinking, as I define and teach it, consists of those activities of the mind that are indispensable to making decisions we can live with". The focus of this definition is practical decision-making that affects our lives. Although this is certainly sometimes the focus of critical thinking, there are also instances where there is no such decision in the offing, such as when we think about whether to accept certain theories or arguments. I think a third party would be surprised to learn that both of these texts were attempting a definition of the same term.

A definition from educational policy

Then there is the famous "definition" of critical thinking imbedded in Executive Order #338, which mandated critical thinking as a requirement for graduation from nineteen California State University campuses and many California community colleges and high schools:

> Instruction in critical thinking is designed to achieve an understanding of the relationship of language to logic, which should lead to the ability to analyze, criticize and advocate ideas, to reason inductively and deductively and to reach factual or judgmental conclusions based on sound inferences drawn from unambiguous statements of knowledge or belief. The minimal competence to be expected at the successful conclusion of instruction in critical thinking should be the ability to distinguish fact from judgment, belief from knowledge, and skills in elementary deductive and inductive processes, including an understanding of the formal and informal fallacies of language and thought. (Dumke 1980, 1)

To satisfy this particular definition, critical thinkers would have to accept the inductive — deductive distinction, be able to distinguish between the two, and apply the proper criteria in given instances. They would also have to embrace fallacy analysis as a central component of critical thinking. Much of this is highly contentious: there are many critical thinking theorists who reject the distinction between inductive and deductive reasoning as either exhaustive or as incapable of clear articulation. Applying that distinction to individual examples is a highly problematic exercise. Moreover, many critical thinking theorists (Scriven [1976], for example) eschew fallacy analysis.

One might contrast the definition in Executive Order #338 with the conception of critical thinking proposed by Halpern (1996), who ties critical thinking to the ability to assess probability. Among the key skills she identifies are recognizing regression to the mean and understanding and avoiding conjunction errors. If Halpern's view were correct, it could easily be demonstrated that many of the people who are critical thinkers (on her account) do not satisfy the definition imbedded in Executive Order #338

Definitions by critical thinking theorists

Theorists have proposed several new definitions of critical thinking. I discuss only two: that of Scriven and Fisher (1997), and that of Hatcher and Spencer (2000).

Scriven and Fisher (1997) define critical thinking as "the skilled and active interpretation and evaluation of observations and communication, information and argumentation" (21). In this account, the focus of critical thinking is very broad: observation, communication, information, and argumentation. This way of specifying the focus of critical thinking is not altogether sensible. Communication is a broad category and would certainly include argumentation, so a separate mention of the latter seems unnecessary. The term "active" also seems redundant; being skilled implies being active. The Scriven and Fisher (1997) definition raises the question of how evaluation relates to criticism,

that is, to the "critical" in critical thinking. Finally, might not one interpret and evaluate in a skilled way, without being critical? Think of the not uncommon situation in which someone shows evidence of skill but fails to see any of the weaknesses in his or her own position or any of the real strengths in alternatives.[2]

Hatcher and Spencer (2000) define critical thinking as "thinking that attempts to arrive at a conclusion through honestly evaluating the position and its alternatives with respect to the available evidence and arguments" (20). I believe this definition is close to what critical thinking theorists want. Thus understood, critical thinking has three major components: (1) the clarification and understanding of the issue in question; (2) the evaluation of the position through the application of accepted standards of evaluation to the various alternatives; and (3) the articulation of the evaluation.

I like this definition's emphasis on standards, and particularly the fact that it includes as part of the process of critical thinking the articulation of the thinking! I also like the authors' rules for critical discussion, which they use as a way of supplementing and breathing life into their definition. Still there are some problems.

First, the definition seems too narrow in that it appears to be limited to positions and arguments. Although I regard positions and arguments as natural focal points, there are other items about which to think critically (e.g., news reports, hypotheses, truth-claims, and even advertising). If Scriven and Fisher (1997) are correct, then even these focal points are too narrow.

Second, the authors appear to build morality and moral character into the very definition of critical thinking, and so Paul's (1982) view is problematic. Missimer (1990), for example, has argued that critical thinking must be defined in terms of the skills alone. Debates about the role of character in reasoning are profound and long lived, extending as far back as Plato.

Third, the Hatcher and Spencer (2000) definition faces the challenge I call "The Identity Question." What in this definition captures the idea of "critical"? How is *critical* thinking different from just plain old thinking?

The problem with definitions

The question of what critical thinking is and how it is to be understood or defined remains both unsettled and unsettling. It is unsettled because:

1. it remains the case that there are a great many definitions of critical thinking — almost as many as there are textbook writers and theorists;
2. it is not at all clear that all of them are attempts at defining the same thing;
3. it is not at all clear that those who propose them are aware of this variety; and
4. it is clear (from 3) that many who offer definitions of "critical thinking" do so without discharging their dialectical obligations.

The definitional question is unsettling because one can quite readily imagine how this diversity of definition might be viewed by those skeptical of the critical thinking initiative. They want to see evidence that teaching students to think critically works and is not just the latest fad in higher education. This requires assessments of critical thinking abilities which can prove whether attempts to teach these abilities work. But I can imagine the skeptic saying "You people don't seem to know what you're doing. No two of your many definitions seem to agree." Thus, there would be one test for those who accept McPeck's definition, another for those who accept Ennis's definition, still another for those who favour Halpern's approach. A person might pass one test but fail one or all of the others. It seems that the term "critical thinking" is too woolly, too flabby, too ill-defined to support decent educational objectives, especially if one proposes to test for them.

This is a reasonable objection that needs to be taken seriously. A failure to overcome the diversity of definitions may yet prove to be the Achilles heel of the critical thinking initiative.

Why this divergence?

I cannot help but wonder why this diversity of definitions characterizes critical thinking as a field. Perhaps it is because the term "critical thinking" is so rich in meaning (like the term "philosophy") that it is inevitable that there will be a wide variety of ways of understanding it.[3] Another possible explanation resides in the ambiguity of the word "critical." This fact was first brought home to me in a personal exchange with Margaret Lee, who observed that "critical" is a word with an interesting story, and that its synonyms — fault finding, captious, caviling, carping, and censorious — suggest the first and most popular understanding of the word. As she pointed out, the *Oxford English Dictionary* traces its changing nuances from its first known use, which is notably attributed to Shakespeare's *Othello*: Iago says "For I am nothing if not critical," meaning given to judging in an especially adverse or unfavourable ways to its use by Sir Thomas Browne in the seventeenth century to mean "involving or exercising careful judgement or observation on the basis of which right decisions might be made," to Jefferson's use of the word to designate "a turning point of decisive importance in relation to an issue."

The common meaning of "critical" is the first one noted by Lee — the one that none of us takes to be the intended referent. Most take critical thinking to be something good but in ordinary parlance the term "critical" has a negative connotation.

Suppose that the definers intend to offer a definition of the "good" kind of critical thinking. In that case, it appears that there are the two quite different senses, both of which Lee has identified. First, there is (Jefferson), in the sense of a critical moment, a crucial point: the patient is in critical condition; deliberations have reached a critical stage, i.e., a significant stage. In this sense of "critical$_j$," critical thinking would be important thinking — the kind that is perhaps necessary for one's survival or well-being. I think some definitions attempt to capture this sense of the term. I take Halpern's definition to be a case in point.

But there is a second, different sense of the term — critical_b (Browne), which means being skilled in reasoned judgment, being able to see both the strengths and weaknesses of the object of one's scrutiny. I call this "the dialectical" sense of critical thinking.

How are these two senses related? Critical_j seems to have the broader scope: it can be argued that not all instances of critical_b will be critical_j but not the reverse. Halpern sees critical thinking as providing skills that are crucial in this society, but they are not skills which are equivalent to the ability to see strengths and weaknesses in an argument. On the other hand, Paul (1982) and Lipman (1988) seem to be defining critical_b. This is in keeping with my own belief that critical_b is the important sense of "critical" — the one that best fits with the phrase "thinking critically." I conclude that this is the sense on which definitions of critical thinking should be focused.[4]

One further thought may help explain the diversity of definitions. For some theorists (Richard Paul may be one example, Ennis another) the term "critical thinking" becomes in effect synonymous with "good thinking." In such definitions, the scope of critical thinking broadens to include problem-solving, creative thinking, etc. I agree that critical thinking is "a good thing," but not that all good thinking is critical thinking. For example, problem-solving is an important kind of thinking that has similarities to critical thinking, but it should not be identified with it.[5] Creative thinking is good thinking, but it is not the same as critical thinking, even though it is widely believed and likely true that there is a relationship between them (one explored in this volume by Sobocan and Hare).[6]

In addition to the factors I have mentioned, other considerations may help to explain the plethora of ways in which "critical thinking" has been defined. Different definitions may, for example, reflect deep philosophical differences, mainly of an epistemological sort. Whatever the reason for so many different definitions, an already astonishing diversity is only increasing. Instead of pursuing further the reasons for this definitional divergence, I will turn next to the dialectical aspects of critical thinking. Whatever the causes of the multitude of definitions, the

important point is that most definitions, and the approaches they typify, are insufficiently attentive to the dialectical/critical dimension of the task.

The Dialectical Tier and Its Implications for Critical Thinking

In trying to understand critical thinking, it may be helpful to distinguish between critical thinking, an activity that occurs in a specific setting, and the critical thinker, the person who regularly carries out such activity. In my view, this distinction contains an important clue to the skills versus disposition debate, but I shall not press that matter here. In what follows, I focus principally on critical think*ing*. In doing so, I discuss the dialectical aspects of the issues to which I have already referred.

The role of argument in critical thinking

Because most accounts of critical thinking include argument analysis and construction as crucial components, it follows that the theory of argument has implications for critical thinking in terms of both theory and practice. If, for example, one thinks that the syllogism is a crucial type of argument, then one will want to build that into the idea of what is required for critical thinking. One will want to familiarize students with this mode of argument. I would not take this view, and very few theorists still regard mastery of the syllogism as necessary for critical thinking. Judged from this point of view, such a test would be inadequate because the concept of critical thinking imbedded in that test is inadequate.

The point is that as we conceive of critical thinking, so we teach critical thinking, and so test for it. In my work I have been arguing that traditional ways of conceiving argument fall short because they do not include the dialectical dimension of critical thinking. This suggests that there are related problems with the way we teach and test for critical thinking. In addressing these issues, I will begin by outlining a better way of conceiving argument, involving

the dialectical tier, then move on to discuss the teaching and testing of the dialectical dimensions of critical thinking.

The dialectical tier

When most of those who discuss a concept of critical thinking present their views, it seems clear to me that they have embraced the traditional conception of argument. It construes an argument as reasons presented in support of a conclusion, or as "premises" leading to a conclusion. In my view, that is just the first level of argument (what I call its "illative" core). Given the contexts in which critical thinking occurs — namely, contexts characterized by conflicts between different positions — arguers must, in addition to providing reasons for their conclusion, also deal with objections and possible objections. They must respond in some fashion to at least some of the alternative positions that characterize the point in issue. That is what happens in what I call "the dialectical tier" — the second level of an argument.

When I introduced the notion of the dialectical tier in *Manifest Rationality* (2000), I wanted to point to a limitation in the way in which logicians and argumentation theorists conceived of argument. My view was that they tended to see argument only vertically, in terms of the relationship of reasons to the conclusion, while ignoring the horizontal (or dialectical) dimension. Arguers — particularly in the context of critical thinking — have a responsibility not just to provide evidence for their conclusions but also to situate their arguments against the field, for example, by showing how they would handle the standard objections. I conceived of this engagement as taking place in the dialectical tier of argument.

Many have pointed out difficulties in the way that I presented my ideas.[7] I will not review those objections and criticisms here, or my responses to them. Suffice to say that I would now formulate my views differently. Nonetheless, most theorists have accepted that there is something like a dialectical tier of argument (see, e.g., Groarke in this volume) and I want to focus on the implications

that this has for the concerns about testing that motivated this book.

Most texts on critical thinking and most tests of critical thinking presuppose a traditional account of argument and ignore, or certainly minimize, the skills associated with what I have called the dialectical dimension. One can find tests that assess a person's inferential capacity and also his or her capacity to handle premise/conclusions structures. But not much has been done to take into account the dialectical dimension of critical thinking. For example, the Ennis-Weir test, which I discuss below, appears to be an adequate test of the subject's ability to judge the illative core of an argument, but it does not do a very good job of testing the subject's ability to assess the dialectical dimension. Let me continue by discussing this dimension in greater detail.

Dialectical properties of a critical thinker

I think it is clear from this discussion that my proposed view of argument has important implications for the conception of a critical thinker. In addition to inferential skills (the ability to tell when a set of reasons are good reasons), it suggests that a critical thinker must have certain dialectical habits and skills. One I have already mentioned is the ability to deal with objections and alternative positions. This is an important skill, but it seems to me that the dialectical properties of a critical thinker go further and include the following skills and traits (or dispositions).

1. *The critical thinker is someone who overcomes resistance to criticism*. In a way this is included in the common idea that critical thinkers are not dogmatic. Far from resisting criticism, which is a naturally human standpoint, critical thinkers are interested in criticisms of their views; indeed, they seek them out.[8]
2. *The critical thinker knows what would count against his or her position as well as for it; that is, a critical thinker can pass "The Flew Challenge*." By this I mean the kind of

challenge Anthony Flew (1955) posited in a famous paper about the meaningfulness of religious language **The Flew Challenge**. In this context, his version of this challenge was presented to his opponents (who were defending a belief in God) in the following question: "The question I want to pose to my fellow symposiasts is this: what would have to occur, or to have occurred, to constitute for you a disproof of the love of, or the existence of, God?"

Part of what it means to be a critical, as opposed to a dogmatic, thinker is having some sense of what would cause you to give up your position.[9] For the dogmatist, the answer (usually not stated) is "nothing." I take it that this cannot be an acceptable answer from a critical thinker, who might reason as follows: "The crucial issue/ question/ proposition for me is X. If that should turn out to be false, then I would be forced, or at least inclined, to give up my position."

The Flew Challenge seems to be a reasonable one that might be incorporated in conceptions of and tests for critical thinking. Since a critical thinker holds his or her position mindful of its weaknesses no less than its strengths, it follows that he or she should be able to indicate what sort of contrary evidence would cause him or her to abandon that position. Being unable to do so could be taken as evidence that the individual is not thinking critically.

3. *A critical thinker changes his or her mind when it is appropriate to do so, for example, as a result of being confronted with a strong objection or alternative position*. A dogmatist sees no need to change. We all know the default position here: "*You* display *your* critical mentality by coming around to *my* position, by being persuaded by the superior rational force of my position." But if I never display such conversions or changes or revisions as a result of engaging in argumentation, what would that mean? What defines a critical thinker is not just the willingness to change his or her mind but having done so — *and done so on more than one occasion. And done so for something like the right reasons!*[10]

4. *A critical thinker is defined as much by what he or she does not say or do as by what he or she does say or do*. Because a critical thinker thinks about his or her views in relationship to alternatives and is aware of possible objections and limitations, he or she will often not say certain things. A critical thinker knows full well the value of the pause for reflection; taking the time out to think it over, sort it out, rather than rushing to judgment.

   If these are important properties of the critical thinker, how do we educate for them? And more importantly, how do we test for them? How, for example, do we test people for what people do not think, for having avoided a hasty judgment, or for having carefully considered and then rejected a certain line of thought?[11]

Implications of the Dialectical Tier for Arguments

How do we evaluate/criticize arguments?

One implication of the dialectical tier is the need to develop a doctrine of dialectical adequacy: what are the arguer's dialectical obligations, and what is required for the arguer to meet them? As a start in that direction, I proposed (2003) the "AAA" doctrine: the arguer's handling of dialectical material must be accurate, acceptable, and appropriate.

To illustrate, let us suppose that the arguer is anticipating an objection to his or her position: "Now someone is bound to object that 0*. Here is my response." In such a context, I propose that three questions be asked.

- **Q1:** Is the objection (0*) accurately stated? One way in which people go wrong in arguments is by mischaracterizing and distorting the views of those who oppose them, thus committing the straw man fallacy:[12] To know whether this is the case, and the answer to Q1, one must be familiar with the argumentation and discussion of the issue.

- **Q2:** Is the response to the objection acceptable? That is, has the arguer managed to defuse the objection? To answer this question, one must know what is required to defuse the objection, and what other responses there might be.
- **Q3:** Is the response appropriate in the circumstances? Are there more pressing and salient objections that the arguer ought to have addressed? To know the answer to these questions, one needs to be familiar with the relevant argumentative space. If, for example, the arguer failed to anticipate and respond to a particularly salient objection, then he or she has a less than critical response.

How do we teach students about constructing arguments?

Textbooks do pretty well in this area, typically advising students to anticipate and respond to objections (see, e.g., Johnson and Blair 2006; Groarke and Tindale 2004). Sometimes, however, authors ignore or forget this component when presenting the evaluative part of their critical thinking theory. There may be no better illustration of this than Solomon's (1989) *Introducing Philosophy* text. When Solomon provides directions to students about how to construct an argument, he makes a special point of telling them that they should anticipate objections. But, later, when he is giving standard formal deductive logic instruction about what counts as a good argument (true premises and valid form), his theory makes no provision for considering how well the arguer does in the previously assigned task of anticipating objections. In this way his theory of evaluation fails to reflect his theory of analysis.

How do we test for critical thinking?

It seems clear to me (though others, like Scriven, probably disagree) that you cannot test for critical thinking without accessing the thinking of the subject. This is why I contend that objective tests (using multiple-choice items) are problematic. In

view of this, I believe that of the available tests, the Ennis-Weir Test comes closest to being a valid test of critical thinking. Even the Ennis-Weir has important limitations when one considers whether a subject can handle arguments in a critical fashion, in the-dialectical ways I have been discussing.

The Ennis-Weir test asks the subject being tested to write an argumentative response to an argumentative letter, "The Moorburg Letter." The letter is editorial in nature, where the arguer is asserting the conclusion that "Overnight parking on all streets in Moorburg should be eliminated" (Ennis-Weir Critical Thinking Essay Test). It asks for a response to each paragraph and then for a final paragraph in which an overall evaluation is made. The directions stress the importance of giving reasons in defence of one's response to the arguer's reasons for wanting a ban on overnight parking in Moorburg. These reasons are (basically) as follows:

1. It is illegal for anyone to have a garage in the city streets.
2. Three main streets in Moorburg are very narrow and so there is no room for heavy traffic.
3. Traffic on some streets is very bad when factory workers try to make their 6:00 am shift.
4. Overnight parking is generally undesirable.
5. Any "intelligent citizen" would regard the near elimination of accidents as highly desirable.
6. During a four-hour experiment on one of the busiest streets whereby parking was banned from 2:00 am to 6:00 am, there were no accidents.
7. Conditions are not safe if there is even the slightest possible chance for an accident; those who oppose banning or overnight parking don't know what "safe" really means and the conditions are not safe as they are now.
8. The police and the national Traffic Safety Council has recommended traffic be banned on busy streets.

One will be inclined to regard such a test as a valid test of critical thinking to the degree that one believes that (a) the ability to appraise argumentative discourse is a crucial critical thinking skill; and (b) this test actually assesses the ability of the subject to appraise arguments. I am inclined to accept (a). The great strength of this test is that it does focus on what I and many others regard as the central critical thinking skill — argumentation. A second signal feature is that this test requires subjects to set forth their thinking, not just the results of their thinking.

I am less certain about (b). The guide for the test evinces that, for the most part, what is being tested are skills in detecting flaws in arguments at the level of the illative core. There is not much in this test that tests the subject's ***dialectical* skills**. The closest the Moorburg Letter comes to this dimension occurs in paragraph 7 where the arguer makes a dialectical move by taking into consideration the "suggestions made by my opponents." The arguer mentions the suggestion (I would call it an objection) that "conditions are safe enough now" and then responds to that suggestion.[13] According to the account I have outlined above, the dialectical adequacy of this response needs to be evaluated by asking the following questions:

- **Q1:** Have the objections in question been accurately stated? To know the answer one would have to be familiar with the context of the argument in which the issue in question occurs.
- **Q2:** Is the response to the objections adequate? In their guide to the test, the authors have addressed this question. They point out a number of ways in which the defect in paragraph 7 can be put.[14] I would put the defect somewhat differently: I would say that the arguer's response to this objection is inadequate and that the arguer has failed to achieve dialectical adequacy.
- **Q3:** Are there other more pressing and salient objections that the arguer ought to have dealt with? To know the answer, one would need to be familiar with the dialectical

> situation: what objections have been made by other authors, which is most serious, etc?

Unless students are practised in asking and answering such questions (something which would require changes in how argumentation is taught), they will not be able to answer them in the context of the test, even if it makes such opportunities available.

Something similar might be said of the one other place where the Ennis-Weir test provides for the dialectical dimension. In this case, the test requires the subject to make a summary judgment in paragraph 9, taking into account the strengths and weaknesses of each paragraph of the letter (each contains a reason for the conclusion). A subject could well mention weaknesses in the dialectical dimension. This represents another step in the direction of testing dialectical skills, though it is not a step which is likely to be taken if students have not been taught the importance of dialectical considerations.

One other limitation of the Ennis-Weir test should be mentioned when it comes to testing dialectical skills. In taking the test, a critical thinker is to assess an argument, taking into account both its strengths and its weaknesses. In the Moorburg letter, Raywift presents reasons for his position. Some are good reasons, some are not. The test subject will be graded according to how well he or she evaluates these reasons (the illative core). However, Raywift's argument is weak from a dialectical point of view. It does not discuss, for example, any potential weaknesses in his own proposal: What are the effects, consequences, costs of adopting this proposal? What are the likely problems? What is/are the alternative position(s)? There is no explicit provision for testing these skills, which are part of dialectical assessment, though there could be.

So long as one does' not build an assessment of such considerations into test construction and marking, the test will remain a good test of reasoning as it applies to the illative core of argument, but not a test that does a good job testing skills in the dialectical dimension.

Conclusion

If the initiative to incorporate critical thinking into education at all levels is to be evaluated and held accountable, as it surely should, we need to be able to show that students who take critical thinking courses do learn to think critically. Our ability to do this on a widespread scale is compromised by two important limitations I have discussed in this chapter: the sheer diversity of conceptions of critical thinking, and the absence of a reliable test of critical thinking (where a reliable test is understood as one which tests the analysis of both the illative core and the dialectical tier of argument).

In addressing the second issue, I have argued that one important dimension of critical thinking — the dialectical — seems not to have been taken into account in tests of critical thinking, particularly the Ennis-Weir test, which is one of the more effective tests of critical thinking on the market. The Ennis-Weir test represents an important advance in testing critical thinking. It requires subjects to produce their thinking; and that is, in my view, the proper way to make a judgment on whether that thinking qualifies as "critical." Ennis-Weir does a reasonably good job of testing the thinking skills of the subject, but the dialectical element of critical thinking is not as thoroughly tested. So although the Ennis-Weir test tests the thinking dimension of critical thinking, I have argued that it does not go far enough in testing the critical dimension. What possible revisions might be made to rectify these limitations remains for me an interesting question.

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Notes

1. I think now that my classification was not the most apt. These proposed definitions of "critical thinking" might rather be called "theoretical" (following Hansen 2002), or perhaps better "programmatic" (following Scheffler 1968). I thank Fred Ellett, Jr. for calling this to my attention.
2. For example, Koehler (2003) exposes all of the fallacies in the Bush administration's position, but can see none of the strengths.
3. Some would push this point further by arguing that philosophy and critical thinking are virtually identical. There is no denying that philosophy has been a principal sponsor of critical thinking, yet I would not equate the two. While some theorists (Richard Paul) do urge that critical thinking be constituted as a discipline, most view it as a skill, or a complex of skills (plus information, plus character traits).
4. It is tempting to think that this sense of "critical thinking" is necessary for survival, but I am afraid this is more a case of wishful thinking. In any event, there is a great deal of evidence to the contrary.
5. See my chapter "Reasoning, critical thinking and the network problem" in Johnson (1996), 246-7.
6. I do not believe that the relation between the two is analytic, i.e., that critical thinking is necessarily creative thinking, or vice-versa. I suspect that there are any number of counterexamples: individuals who have been highly creative thinkers but were not particularly critical. Beethoven was highly creative but also resistant to criticism. Einstein, for all his brilliance, was unable to see any merits in quantum theory. He was certainly creative but not critical (in this respect).
7. See Hansen (2002), Tindale (2002), Groarke (2002), and Hitchcock (2002) and my response (2004).
8. This is a trait that I think Scriven embodies admirably.
9. Notice, by the way; that Flew neglects to appreciate the bilaterality of this situation (Johnstone, Jr. 1978). Flew seems to think it is only those who disagree with him who must pass the test. But Flew should also take the test, answer the question on the other side of the debate. Flew seems unaware of this dialectical (and perhaps epistemic) responsibility.
10. One might illustrate this point by pointing to episodes in the history of philosophy, which could include Russell's abandonment of his theory

of judgment in light of Wittgenstein's 1914 criticisms; Wittgenstein's abandonment of the *Tractatus* theory in light of objections from Ramsey and Sraffa; and Ayer's gradual acceptance that the verifiability criterion could not be properly stated (Church's 1949 objection).

11. Part of the issue here involves the difference between testing for critical think*ing* and testing for when someone is a critical think*er*. The former is easier than the latter.
12. The strawman fallacy is a, perhaps the pre-eminent, *dialectical* fallacy.
13. Note that only one objection is taken into account and that it is by no means obvious that this is the strongest objection that could be made to the argument. In fact, I think there are much stronger objections: such as that the arguer has failed to take into account significant consequences of his proposal that would suggest to many that the negatives outweigh the positives.
14. Ennis states the defect is a "recognition of winning an argument by definition, that a word has been made useless for empirical assertion, and/or claim that an incorrect definition has been asserted" (Ennis-Weir Critical Thinking Essay Test).