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# A fresh approach to analyzing John McPeck's conception of critical thinking.

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A FRESH APPROACH

TO ANALYZING

JOHN MCPECK'S CONCEPTION OF CRITICAL THINKING

by

Debra Anne Boussey

A Thesis
Submitted to the Faculty of Graduate Studies and Research
through the Department of Philosophy in
Partial Fulfillment of the Requirements for the
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1992

# ABSTRACT

## A FRESH APPROACH TO ANALYZING
## JOHN MCPECK'S CONCEPTION OF CRITICAL THINKING

by

Debra Anne Boussey

John McPeck's conception of critical thinking, as developed in Critical Thinking and Education, has had a profound effect upon the Critical Thinking Movement. With its allegiance to subject-specificity and epistemology rather than to a generalized set of skills, it has forced theorists in the movement to consider possibilities they either missed or ignored. Such theorists have found it necessary to confront McPeck's conception and his arguments before they can satisfactorily justify their own.

In the critical thinking literature, however, theorists tend to dismiss the positive contributions he has made and to attack the arguments McPeck makes about individual points. They mistakenly believe that that approach will invalidate his whole project.

I contend that McPeck's conception of critical thinking depends on three things: a three premise argument that concludes critical thinking is conceptually linked to epistemology, two definitions, and ten features that outline

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what critical thinking does and does not include. The
above can be understood independently; however, it is only
when they act in concert that they comprise McPeck's
conception of critical thinking. I further contend that
critical thinking is explained in terms of other related
concepts, such as rationality and epistemology, that also
rest on the tenets of McPeck's main argument.

I will show that the above interdependence leads to
two maladies - inconsistency and imprecision. His
conception is inconsistent inasmuch as the argument for
critical thinking leads to the conclusion that  there are
as many concepts of critical thinking as there are subjects.
The imprecision of critical thinking and  the other concepts
upon which it depends contributes to the inconsistency
by creating an atmosphere in which it is possible to derive
many concepts of critical thinking and by themselves
becoming many concepts rather than one overriding concept.

To My Parents: Doris and Henry Boussey

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# CHAPTER ONE

## MCPECK'S CONTRIBUTION TO THE CRITICAL THINKING MOVEMENT

After two thousand years of domination, evidence strongly suggests that formal logic has been deposed as the only paradigm of good reasoning. Its dominant position was washed away in a revolution that was slow in coming, yet inexorable once it began. The movements counter to formal logic basically charged that it was incapable of assessing arguments in their natural settings, that it could not handle so-called 'everyday' arguments.[1] The basic tenets behind this revolution took hold only in the last three decades. Once the justice of those charges was recognized, reform became inevitable.

I say 'movements' rather than 'movement' because two identifiable movements have emerged from the revolution - the critical thinking movement and the informal logic movement. The above are largely treated as distinct yet complementary.[2] Regardless of the exact nature of the relationship between the critical thinking movement (CTM) and the informal logic movement (ILM), they have attained as prominent a position as formal logic in theories on evaluating arguments.[3]

The time for revolution, however, has passed and today

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we are in an evolutionary stage. Granted, people accept
the existence of a concept called critical thinking.
Granted, people accept the existence of a concept called
informal logic. What is not fully accepted is the nature
of the former concepts. What are their boundaries? What
assumptions lie at their hearts? How are they related
to one another? How are they related to formal logic?
Can they be taught? Should they be taught? If so, how?
Ever since Ennis published "A Concept of Critical Thinking:
A Proposed Basis For Research in Teaching and Evaluation
of Critical Ability" in 1962, proponents of critical
thinking and informal logic have been trying to come to
grips with these questions and with their colleagues'
theories. The concepts of critical thinking and informal
logic have both been evolving.

Currently we are in a state of flux, since no one
conception of critical thinking has managed to achieve
dominance over any of the others. Even the most prominent
contributors like Ennis and Paul are still modifying their
conceptions as their ideas evolve and as their ideas are
challenged. It seems to me that they are all seeking some
way of explaining what is already there.

In The Concept of Mind (1955), Gilbert Ryle pointed
out that Aristotle did not invent logic and syllogisms.
He gave names and overt formulations to things that people
already knew were there and which they already used with
proficiency. Aristotle's originality sprang from his

recognition of the existence of logic and from the
formulation of how it and its component parts function.
It is my contention that members of the two movements
believe that they are doing for critical thinking and
informal logic what Aristotle did for formal logic. In
"Critical Thinking and the 'Trivial Pursuit' Theory of
Knowledge," John McPeck says

> . . . at times, my general view about the nature
> of critical thinking seems so obvious and
> commonsensical to me that it is almost
> embarrassing that it need be said at all,
> particularly to the learned audience for whom
> it was originally intended . . . The view of
> critical thinking which I have been defending
> simply tries to account for certain common, and
> what I think obvious, facts about human
> reasoning.[4]

The theorists in both traditions have accomplished
the first step by recognizing the existence of critical
thinking and informal logic. The second step, formulating
and articulating how critical thinking and informal logic
are conceived and how they operate, is the problem. A
consensus has not been formed on all of the important
points. Each theorist believes that his conception is
the correct one and that he has, for the most part,
described the way things actually operate when assessing
natural or 'everyday' arguments and situations.

In reviewing the literature on critical thinking I
found that a broad pattern emerged. The first stage
consisted of Robert Ennis's work and the reviews,
criticisms, and 'advances' that followed. His work was

one of the real launching points for the CTM. In the early
years of the movement anyone writing about critical thinking
had to deal with his loose characterization of the
components of critical thinking. The literature reveals
that for many years, Ennis's work dominated the movement.
If this were not the case most of the people in the field
would not have felt compelled to correct, improve on, or
quote him. In almost everything that I have found on the
subject, even from recent years, Ennis's contributions
have been cited. He erected the primary pattern for
approaching critical thinking in "A Concept of Critical
Thinking" where he listed the skills that he believed to
be essential to critical thinking.[5] Understandably the
list has altered over time and his analyses of critical
thinking have become more developed

Although Ennis remains a valued contributor, currently
a dominant voice is that of Richard Paul who has taken
Ennis's skills-and-dispositions account of critical
thinking, acknowledged its worth, and concluded that it
is not enough without an awareness of 'world views' in
which we are all embedded and which shape and affect our
responses and critical abilities.[6] Again, the literature
reflects this shift.

There is one other stage that I have noticed and that
is not, strictly speaking, a stage at all inasmuch as it
neither builds on nor acts as the beginning of a chain
of thought. This 'stage', which is the important one for

the purpose of this thesis, does not follow Paul nor does it precede Ennis; rather, it permeates them. We might look at McPeck's place as the counter-culture of the 1960's whose ideas and actions reverbated throughout the dominant culture and whose effects are being felt even today. However you choose to put it, John McPeck, like Ennis and Paul, must be contended with. His primary work, <u>Critical Thinking</u> <u>and</u> <u>Education</u>, and its theme, critical thinking as subject, domain or discipline-specific, cannot be ignored.

During Ennis's dominant phase, commentators attempted to reconcile his approach with the criticisms and suggestions McPeck leveled against it. When he could not be reconciled, some would claim his criticisms were largely meaningless since the standard approach implicitly dealt with them. When Paul's star ascended in the movement, the literature shifted from an Ennis versus McPeck stance to a Paul versus McPeck stance. McPeck simply cannot be ignored.

I like to think of the three in a familial relationship. Ennis is the grandfather who founded a small family business. He founded it, nurtured it, and still plays a role in it. Paul is the dutiful son who joined the family business and who, with great zeal, built on its foundations to expand its market and improve its product line. He is the father of the business who has nurtured sons and daughters of his own to continue the families'

work. McPeck is the prodigal son who, with an equal amount of zeal, decided the foundations of the family business rested on shaky ground and needed to be torn down and remade in a similar, yet different, image. Since his family refused to allow him and his destructive tendencies into the heart of the family business, he built his own. His business is smaller, but offers stiff competition. The third generation may see the worth of both and be able to effect a merger, if one is at all possible, and if Uncle McPeck is incorrect in thinking that their business practices are incompatible. I hope to resolve, or at the very least come closer to a resolution of which business will fail or whether a merger is possible, before this inquiry is complete.

## Challenging the Standard Approach

Why focus on McPeck? Why not Ennis, Paul, Siegel, or Lipman? Why not try to get a handle on critical thinking by examining the standard approach, since it is the dominant account? It is precisely because the standard approach is the standard and dominant approach that I have decided not to go that route. A great deal has already been written from that viewpoint and being so immersed those writers do not always see where their biggest problems lie. It takes someone like McPeck, who is as interested in the topic as those taking the standard approach and who does not buy into it, to see the weaknesses. He puts it under

the proverbial microscope and forces its proponents to face the weaknesses and try to deal with them. Even if McPeck's approach to critical thinking turns out to be wrong-headed, he has made a large contribution to the movement by forcing this confrontation. He has brought a refreshing vitality to the literature and to the critical thinking movement. A radical is, if nothing else, interesting.

Apart from being drawn by McPeck's radical position, the content of his ideas on critical thinking also entices me. What if he is correct in holding that critical thinking is subject or domain-specific? What if he is correct in saying that it cannot be taught as if one course nurtures skills applicable across subjects? The consequences are staggering. Every school that has set up a critical thinking program based on these mistaken assumptions wastes time and effort. The students waste time and effort attempting to inculcate skills and dispositions that will not make them proficient, critical reasoners. The teachers waste time preparing for and teaching something that is meant to be useful and turns out not to be when they could be teaching and preparing courses so that they are useful and do produce critical thinkers. All that waste from a misapprehension of the underlying nature of critical thinking!

Moreover, if it turns out that all the above is true and that McPeck's version of critical thinking eliminates

the opposition, the hardest part of McPeck's enterprise would have to begin. He tells us that a liberal education is the answer.[7] Realistically that tells us nothing. The teachers, researchers, or philosophers interested in critical thinking would have to determine what 'skills' count as critical in each subject/discipline/domain. Furthermore, they would still be left with the question of how to inculcate the commensurate 'skills', assuming of course that they decide critical thinking can be taught and is not acquired by osmosis nor yet is inborn.

Finally and most importantly, I took up the challenge contained in a comment by Perry Weddle. In "McPeck's Critical Thinking and Education" he says, "What makes the emergence of an intellectual movement into adulthood might be said to be the movement's surviving its first major challenge. McPeck's Critical Thinking and Education is the challenge."[8] I concur. McPeck did provide a great challenge to the critical thinking movement's standard approach. However, he speaks of McPeck's challenge as if it is over. The defenders of the movement supposedly faced the infidel and smote him. I doubt this very much. None of my research indicates that McPeck has ever been satisfactorily routed. While he has lost some battles, he has won too - the war rages on. This thesis constitutes one skirmish in this ongoing conflict.

The difference between my predecessors' (Paul, and Siegel among others) attempts to handle McPeck's arguments

for his conception of critical thinking and my own resides in our different approaches. They address individual points that McPeck offers, in an effort to submarine his entire enterprise. What they succeed in sometimes doing is torpedoing those individual points but not the concept itself. I intend to address the sum of the arguments McPeck offers, the individual arguments as they perform in conjunction with each other--an overview if you will--and show that the consequences of his arguments lead to an interpretation of critical thinking that McPeck does not intend. In effect his arguments supporting his conception of critical thinking invalidates his conception of critical thinking. The project then is to analyze the McPeckian concept of critical thinking (italics mine). I shall contend that his arguments lead inexorably to the conclusion that there cannot be a concept of critical thinking but many, and it follows that his stated project crumbles because he claims to be analyzing an overriding concept, not a series of concepts whose natures may alter in given contexts.

Do not misunderstand me. McPeck offers many good points regarding the nature of critical thinking. These points emerge both when he is criticizing other views of the concept and when he is building the proper atmosphere for his own concept to function in adequately. The literature tends to overlook the positive aspects of McPeck's work in favour of highlighting the negative ones.

When the good points are acknowledged, they are usually

brushed over as if they are obvious and had been included

from the beginning. Oftentimes, other contributors credit

him only with stressing something that was purportedly

embodied in their own constructions. By devaluing the

points originality they devalue McPeck's importance as

a contributor to the CTM. By acknowledging the justice

of some of his points they appear to be taking his

criticisms to heart and can largely ignore the more

contentious criticisms.

In this thesis I intend to draw McPeck's conclusions

and their consequences out into the open and show how and

why they invalidate his own project. However, I will also

spotlight the good points in his project, which show

throughout Critical Thinking and Education, and show why

they are good points and how they may serve as a base for

a reformulation of his conception of critical thinking.

I am not interested in empirically verifying or disproving

his theory by citing study after study - both sides do

this and it has taken theorists nowhere. One of the issues

McPeck addresses is the validity of such studies based

on critical thinking tests. One problem he mentions is

that it is unclear what is actually being tested for -

critical thinking skills, reading skills, or intelligence?

This thesis will be presented in three interlocking

sections. The second chapter deals with the first two

chapters of Critical Thinking and Education where McPeck

develops his concept of critical thinking and the conditions under which it operates. We cannot understand why he invalidates his own concept if we do not know what he conceives critical thinking to be and why. The third chapter builds on the second, outlining where his conclusions lead him astray and how they invalidate his own project. The last chapter highlights the positive aspects in McPeck's arguments and offers an overall assessment of his analysis, arguing that he has failed in his goal to provide <u>the</u> analysis of critical thinking, and asking what caused this failure, and what he can do about it - if anything.

This thesis covers McPeck's contributions from 1981, when <u>Critical Thinking and Education</u> was released, to the present day. His latest book, <u>Teaching Critical Thinking</u> is included. However, my thesis will not comment on Chapter 5 of <u>Critical Thinking and Education</u> which focuses on Edward de Bono.

# CHAPTER TWO

## THE MEANING OF 'CRITICAL THINKING'

John McPeck wrote <u>Critical Thinking and Education</u>
out of a need to present a clear analysis of the concept
of critical thinking.  We do not, he claims, have a clear
understanding of what the concept of critical thinking
entails.

> The phrase 'critical thinking' is both
> overworked and under-analyzed . . . Even
> the more careful  work that has been done
> on critical thinking  tends to rush over
> the analysis of the basic concept and to
> move on to itemizing the various skills
> that it is thought to involve.[1]

As a consequence, critical thinking can legitimately refer
to anything from logic to the ability to solve clever puzzle
games and can, so it is claimed, be inculcated in any one
of a number of ways.  Providing a list of skills as Ennis
does in his definitions is not enough since he nowhere
provides a justification for his view.[2]  McPeck intends
to make up for this lack by providing the missing analysis.

McPeck dismisses the approach to critical thinking
typified by Robert Ennis, what I call the <u>standard approach</u>,
in which typically a definition, meant to apply to all
disciplines, is given along with a list of skills and/or
dispositions.  Edward D'Angelo, for example, also employs

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this pattern of explanation in The Teaching of Critical Thinking.[3] Even those, like Paul and Siegel, who do not follow this precise pattern, assume the concept applies to other disciplines and assume that a definition applicable across disciplines is possible. It is this common assumption that identifies a theory as a standard approach theory.

McPeck takes the opposite approach, arguing, as we shall see, that the concept of critical thinking does not exist as a discipline unto itself and that a list of generic skills and/or dispositions is unworkable. The two approaches are, however, intertwined in his book. In his illustration of the concept, McPeck depends less upon a positive analysis of the concept than on a negative one. That is to say, the structure of Critical Thinking and Education mainly revolves around his stating what is misguided about the 'standard approach' and why, and then providing the correct approach. We might view McPeck's concept as the antithesis of the standard approach, since it rejects the standard account's basic assumptions. This rejection will be clarified.

His conception of critical thinking rests on two basic assumptions that act as the foundation of his theory. The first assumption is that a concept of critical thinking exists. He is not seeking to establish that fact. McPeck's concern is with its nature. Is critical thinking subject-specific or not? If it is, how does it manifest

itself? How do we recognize and use it? We have already met the second assumption (p. 12) which says the standard approach to critical thinking has not discovered how this manifestation occurs.

The first two chapters of the book called "The Meaning of Critical Thinking" and "Critical Thinking, Epistemology, and Education," are devoted to the articulation of the theoretical assumptions that comprise the actual foundation and structure of his analysis. Throughout these two chapters, McPeck offers the conditions necessary for critical thinking to flourish, and a step-by-step argument leading to the conclusion that critical thinking is conceptually linked to epistemology. He reaches this conclusion by a three-premise main argument, each premise of which is backed by a chain of supporting arguments. The three main premises support the conclusion that critical thinking is conceptually linked to epistemology. The main argument is: (1) thinking is always about something in particular, (2) there is no generalized set of skill(s) called critical thinking, (3) critical thinking is subject-specific, and therefore (C) critical thinking is conceptually linked to epistemology. We will examine this reasoning in Sections I and II of this chapter.

McPeck provides two definitions that rest on the above reasoning. They do not provide content to the concept, but indicate how the concept is to be applied. They show how the concept functions. In addition to the definitions

McPeck also provides ten features that outline the conditions under which the definitions must operate. They establish limits or boundaries both for the concept itself and for the definitions that arise from the concept. I will argue that McPeck's own concept is fundamentally incoherent, but before I can do that, I need first to explain that conception/analysis. That explanation entails examining the premises the conception, the definitions, and the features - all of which comprise the conception.

## (I) The Relationship Between Generalized Skills and Critical Thinking

First, we will look at the three premises and the conclusion that I set out in the beginning of this chapter. To simplify the discussion of these premises we will examine the first two premises in Section I of this chapter and the third premise and the conclusion in the following Section.

### Premises 1 and 2

The arguments underlying premise (1) arise because McPeck wants to show why the standard approach fails and mistakenly reifies critical thinking into a curriculum subject. The tenets of this argument run through much of his work outside of Critical Thinking and Education; namely, "The Evaluation of Critical Thinking Programs: Dangers and Dogmas," "Response to H. Siegel," "Critical Thinking and the 'Trivial Pursuit' Theory of Knowledge,"

and "Paul's Critique of <u>Critical</u> <u>Thinking</u> <u>and</u> <u>Education</u>."

The basic argument runs: thinking is always about something in particular; to think of no particular thing is equivalent to not thinking at all. "It is a matter of conceptual truth that thinking is always thinking about X; and that X can never be 'everything in general' but must always be something in particular."[4] This line of reasoning raises serious concerns about teachers' claims that they teach thinking, that they teach students to think, or that they teach thinking in general; and yet <u>critical</u> thinking is reified into a curriculum subject.

The standard approach fails because, as we shall see in feature 7, theorists mistakenly emphasize 'critical' as if critical thinking alters the nature and operation of thinking; whereas, it really behaves like the term 'creative' which qualifies thinking and which, in itself, does not describe what is being thought about.[5] 'Precocious', 'imaginative', and 'sensitive' operate in the same fashion.

> If thinking is always about something . . . then 'critical thinking' per se is even more so, that is, more transitive. This is because critical thinking as such, is a kind of higher-order thinking about things . . . and is, therefore, parasitic upon the original thing being thought about.[6]

When we drop the X we are left with "I teach precocity," "I teach imagination," or "I teach creativity." If it is argued that they are general skills, they must be concomitants of other pursuits.

> since they are related to the way in which
> something is done, not what is done
> . . . Adding, the adjective 'critical' to
> the phrase 'thinking about X' describes
> in some general way how something is thought
> about, but it does not describe that
> something. In isolation from a particular
> subject, the phrase 'critical thinking'
> neither refers to nor denotes any particular
> skill . . . it makes no sense to talk about
> critical thinking as a distinct subject
> and that it therefore cannot be profitably
> taught as such.[7]

Since, McPeck concludes, critical thinking is not about

a specific X, and since critical thiking does no belong

to a distinct subject, it does not make sense to say "I

teach critical thinking" because there is no generalized

skill properly called critical thinking.[8] Thinking and

critical thinking are bound to particular subjects and

activities. The standard approach, which subscribes to

the notion of critical thinking simpliciter, is absurd

"because there are almost as many ways of thinking as there

are things to think about."[9]

The argument that there is no such thing as thinking

in general and that thinking must be about some thing in

particular is one of the most contentious arguments that

McPeck presents. In "Critical Thinking: How to Teach Good

Reasoning" Groarke and Tindale state that

> People know how to think, perhaps, but they
> do not understand the principles of thinking.
> When they do, they will, we believe reason
> more effectively . . . reasoning [which
> Groarke and Tindale use interchangeably
> with critical thinking] is, for us, like
> writing skills. Undergraduates can all,
> presumably, write. But many of them need
> to develop their writing skills.[10]

Many counter-arguments theorists offer share one trait
- they depend on analogies to some other, presumably
general, 'activities' where courses exist to improve the
requisite skills.  Harvey Siegel's counter-argument provides
an example of how many theorists broach the subject and
where the disputants, McPeck and the standard approach
theorists, get derailed.  Siegel points out:

> A given act of thinking may, as McPeck
> suggests, always be about something or other;
> it may make no sense to say of a given
> episode of thinking that the thinker was
> thinking, but not about anything in
> particular.  But it hardly follows from
> this that thinking, conceived as a general
> sort of activity which includes as instances
> all cases of particular acts of thinking
> about something -- and such a conception
> must be possible, on pain of inability to
> identify all the specific acts as acts of
> thinking -- must itself be construed as
> about something or other.  It is not the
> case that the general activity of thinking
> is 'logically connected to an X' any more
> than the general activity of cycling is
> logically connected to any particular
> bicycle.[11]

In his "Response to H. Siegel," McPeck challenges
the legitimacy of Siegel's analogy linking cycling with
thinking.  Cycling denotes a specific ability and has a
limited set of criteria for effectiveness.  It is not a
general activity except insofar as you can travel to
different places for different purposes.  Thinking does
not denote a specific ability nor does it have a finite
set of criteria for effectiveness.  As McPeck has said
elsewhere, there can be critical, creative, imaginative,

sensitive, etc. thinking, each of which, presumably, has
its own set of criteria.

> Different destinations and purposes do not
> change  the specific nature of the skill
> of cycling.  But different problems and
> purposes do change the inherent nature of
> the skills required in thinking.  No one
> set of skills can encompass 'thinking',
> but one set of skills does encompass
> cycling.[12]

McPeck's rejection of Siegel's analogy between cycling
and thinking seems valid and for the given reasons.
However, I think both have lost sight of the fact that
we are concerned with <u>critical</u> thinking, not thinking in
general.

Siegel, who believes that there are some skills linked
to critical thinking, such as identifying assumptions and
identifying fallacies, could admit that McPeck's charges
are telling ones, but not if he compares cycling with
critical thinking.  In Siegel's view the skills of critical
thinking have a limited, not an infinite, set of criteria
for effectiveness.  To be effective the criteria would
allow for minor adaptations to fit different situations,
but for effective cycling we need to make adjustments when
faced with different types of bicycles in different types
of terrain.[13]  Critical thinking skills would behave
slightly differently in history than in religion; a 'normal'
bicycle would behave differently on a dirt road than on
a paved one.  Riding a mountain bike in rough terrain is

different from riding a 10-speed on city streets. And
so Siegel's analogy and criticism of McPeck's argument
is valid when cycling, a specific ability with a limited
set of criteria for effectiveness, is compared to critical
thinking, a specific type of thinking with a limited set
of criteria for effectiveness.

McPeck and the standard theorists are operating from
two different intuitions, if you will, regarding the nature
of critical thinking. Or, as Selman puts it, "The dispute
seems to be the result of a failure to come to agreement
on a satisfactory way of conceptualizing the nature of
critical thinking and the concepts associated with it."[14]
McPeck's intuition tells him that critical thinking is
not a particular way of thinking with its own subject matter
and criteria, 'critical' is only used as a qualifier to
describe the type of thinking that is occurring. Standard
theorists' intuitions tell them 'critical' does not just
qualify thinking; critical thinking is a particular type
of thinking with criteria of its own and it can be taught
as a separate subject; therefore, they conclude, McPeck
must be mistaken in his assertion that thinking in general
and critical thinking in particular must be about some
X.

McPeck's argument that there is no thinking in general
leads to the conclusion there is no generalized set of
skills called critical thinking. We can easily see how
he comes to that conclusion. If thinking is always aimed

at some X, then critical thinking, which is a particular
way of thinking, is also aimed at some X.  'Critical'
describes how something is thought about; it does not
describe that something.  Since critical thinking is not
a something in itself and is dependent on particular X's
for its substance, it is not a generalized skill with its
own subject matter and criteria for its use.

Ennis disagrees with this conclusion on the grounds
that there are bridge-jumping general criteria such as
assumption identification, and detecting and avoiding
equivocation, etc. which do not depend on the subject.[15]
However, it does not seem to me that McPeck would accept
Ennis's examples of bridge-jumping general criteria.  First,
what counts as an assumption, for example, depends on the
subject or field to which X belongs.  Second, to even find
an assumption you need a thorough working knowledge of
the field.  Without a thorough working knowledge you would
not know what constitutes an assumption in the field and
if you had some general definition for that field you would
not necessarily know how to apply it unless you understood
what makes something an assumption in that field and why
this particular claim constitutes an assumption.  A certain
amount of background understanding is implied.[16]  General
prescriptions are unhelpful if you lack this necessary
knowledge.  McPeck continues by arguing that as we move
from the purely formal to the empirical mode a universal
standard becomes dimmer.[17]

McPeck offers some comments to show that there is no empirical evidence to support critical thinking as a generalized skill. Most texts based on the standard view focus on logic and fallacies with the rationale that by gaining skill in their proper use students will know the rudiments of critical thinking. This view assumes a transfer of training across disciplinary boundaries. There is evidence to the contrary. McPeck refers us to Bryce B. Hudgins in _Learning and Thinking_.[18] In "Trivial Pursuit" McPeck claims that almost all empirical studies on transfer of training effects, particularly in the cognitive domain, have been unpromising (italics mine).[19] In my own review of material on transfer of training, I have seen studies which claim that transfer does occur.[20] While I cannot agree there is no empirical evidence supporting critical thinking as a generalized skill, I can concede that there is no definitive evidence either way.

McPeck has more to say on the subject of transfer in "Stalking Beasts." He warns that we should not confuse 'logical subsumption' with 'psychological transfer'. Simply because logical principles might apply does not mean psychological transfer takes place between domains and principles. Some kinds of specific knowledge and information will have greater transfer capacity, i.e. "politicians are sensitive to voting pressures" versus "the cat is on the mat."[21] The real question is what knowledge and information will have the most capacity for

transfer.

Thus, McPeck believes that he has offered empirical as well as theoretical proof that critical thinking cannot be a generalized skill; although, with the proliferation of transfer of training studies supporting the opposite point of view, we need not necessarily accept this conclusion. What is more, by seemingly eliminating transfer of training across disciplinary boundaries McPeck reinforces his own assurance that the standard theorists are misguided.

The mistaken assumption, as McPeck sees it, that critical thinking is a generalized skill has practical consequences. Critical thinking tests are based on this misguided notion. Since the idea is false, so must the tests be. Critical thinking as a generalized skill does not exist but it supposedly is what is being tested for. Since critical thinking as a generalized skill does not exist, then critical thinking is not being tested for. As McPeck points out in "Dangers and Dogmas," the burden of proof traditionally rests on the person who makes an existence claim. Those who set up tests to measure 'critical reasoning ability' or 'general reasoning skills' behave as if the former have actually been proven to exist. The above mentioned tests, he claims, do two things: (1) they assume the phenomena being tested for are useful to/productive of critical thinking, thereby, assuming what needs to be proven; and (2) because abilities are postulated, they assume the unitary underlying abilities

exist "reifying the existence of a pervasive 'ability' from its description."[22]

(II) <u>The</u> <u>Relationship</u> <u>Between</u> <u>Subject-Specificity</u>, <u>Epistemology</u> <u>and</u> <u>Critical</u> <u>Thinking</u>

Since we have established the link between premise (1) (thinking is always about something in particular) and premise (2) (there is no generalized set of skills called critical thinking) the next step is to establish the link between the former premises, premise (3), critical thinking is subject-specific, and the conclusion that critical thinking is conceptually linked to epistemology. The progression from premise (2) to premise (3) is a natural one; especially given the quote on page 5 of <u>Critical</u> <u>Thinking</u> <u>and</u> <u>Education</u> which states that "it does not make sense to talk about critical thinking as a distinct subject and that it therefore cannot be taught as such."[23] If critical thinking is not a distinct subject and if it can, nevertheless, be taught, then it must be taught as integral to other subjects.

McPeck does not deny critical thinking involves reasoning skills; what he denies is that critical thinking is a skill or that there is a generalized set of skills that can be made to be distinct from other subjects. Insofar as critical thinking is a skill, it is teachable as other skills are. One thing is certain, since there is no universally applicable skill or discipline comprising

critical thinking, it should be taught as adjunct to other subjects and the problems and exercises should be set up with this in mind.

> Indeed, the very idea of teaching critical
> thinking in isolation from specific content
> is incoherent . . . Moreover, it is crucial
> to recognize that the specific ingredients
> of critical thinking will differ according
> to task or subject, and that it comprises
> neither any specific set of skills nor
> 'logical' skills.[24]

McPeck uses Toulmin to support his judgment that critical thinking is subject-specific. Toulmin, for example, states that "all the canons for the criticism and assessment of arguments, I conclude, are in practice field-dependent, while all our terms of assessment are field-invariant in their force."[25]

From this statement and from the rest of his argument I must conclude (with Govier) that Toulmin can be read as supporting both sides of the dispute.[26] She cites An Introduction to Reasoning, a book Toulmin co-authored, which insists every argument be located in some one field and in which he also superimposes a general account. Subsequent reviews, she says, reveal that Toulmin has problems fitting natural argument into one discipline because some arguments combine themes from several disciplines and some topics are not clearly claimed by one discipline.[27] It would be like trying to force a square peg into a round hole. You would have to shave off a lot of the peg to make it fit the hole; thereby making the

peg into something it is not.  Attempting to put a natural

argument into one discipline when it belongs to several

also means losing much of its identity.  If Govier is right,

then Toulmin does not provide adequate support for the

view that critical thinking is subject-specific and, with

its superimposed general account, may not have intended

it to be so limited.

McPeck goes one step further by claiming that Hamblin,

whose work Fallacies Johnson and Blair, among others, claim

lays the groundwork for the development of a theory of

fallacy, actually rejects a general theory of fallacy.

According to McPeck, Hamblin supports his own claim that

instances of fallacies or valid arguments are not

universally applicable across subject areas.[28]  To

understand how the former point about informal logic relates

to critical thinking, we must realize that for McPeck

informal logic, like critical thinking, mistakenly asserts

that there are skills or criteria that cross subject or

disciplinary boundaries.  Hence, McPeck takes Hamblin's

position as not only rejecting informal logic, but also

accepting his own position on the subject-specific nature

of knowledge.

McPeck highlights three theses in Fallacies that

support his former contention.  The first is that the

foundation of fallacies rests on epistemic, not logical,

considerations (72 - 77).  The second is that when assessing

statements, acceptance, which is relative to varying

circumstances, should take precedence over validity and truth (242 - 245). The third is that rules and conventions of argument are determined by the context and belief states of interlocutors (283 - 284).[29]

However, the theses do not provide the support McPeck thinks they do. The first thesis is unobjectionable to informal logicians, as is the second. McPeck's employment of them against informal logic rests on his mistaken belief that informal logic denigrates knowledge. It rests on the mistaken belief that informal logic is concerned only with validity. However, the third thesis is not in tune even with McPeck who has said in his two definitions of critical thinking, which we will examine in Section III, that we must question belief foundations.

Ignoring the problems we have found with McPeck's supporters, Toulmin and Hamblin, what the argument boils down to for McPeck is that "in general, different domains of knowledge have (more often than not) characteristically different patterns of reasoning and argument that are peculiar to themselves."[30] The differences among kinds of reasoning are greater than what is common. An historian argues in a way that is different from a mathematician, an engineer, an anthropologist, etc., according to McPeck. He uses 'mass' as an example of what he means about differences between subjects. The word 'mass' has different connotations and denotations in physics and Marxist political theory, yet it is the same word. He claims we

need to understand the surrounding concepts and evidence
which also "may be peculiar to that field"[31] (italics mine)
to gain an adequate understanding of, in this instance,
the word's connotations and denotations in a given field.

With premise (3) established, i.e. critical thinking
is subject-specific, we must see how it relates to the
conclusion. We must realize that as a philosopher of
education McPeck is concerned with how critical thinking
is to be imparted to students. The answer to this question
resides in the conclusion to which the premises lead;
namely, that critical thinking is conceptually linked to
epistemology. The relation between the two not only
completes the description of critical thinking's nature,
but also tells us that to think critically in a subject
we must study the epistemology of the subject.

McPeck begins establishing this conceptual link in
Chapter Two by stating that uncritical students are not
uncritical because they suffer from a deficiency in logic,
as theorists in the standard sense of critical thinking
seem to believe, but because they lack education in the
traditional sense. These students do not have a clear
understanding of what constitutes good reasons for belief
in the domains in which they are immersed. An
epistemological approach provides this understanding.
"In short, there is both a conceptual and pedagogic link
between epistemology, critical thinking and education,
but the study of logic or critical thinking as such has

no part in this linkage."[32]

He concludes that a person must participate in the particular domain of inquiry to "appreciate the proper significance of the evidence. Indeed, the domain of inquiry from which the evidence comes might be one in which familiar canons of logic do not apply."[33] For example, they may not apply in art, religion, morals, quantum physics, economics, or law.

Some standard theorists claim that their approaches are valuable because they teach people to deal with real issues. However, there are two reasons why standard theorists cannot legitimately refer to their approaches' efficacy in dealing with real issues. First, we generally operate in unfamiliar territory where one question generates others, where epistemological uncertainties abound and experts disagree. Real issues do not depend on logical validity, but on the truth of the premises. "The most striking problem with these unfamiliar realms of expertise is that they presuppose a knowledge of technical language and an epistemological framework that the uninitiated cannot possess."[34]

Second, introductory logic texts claim to be most useful in dealing with real issues in everyday life by using editorials, letters to the editor, media accounts, etc. McPeck describes this approach as "superficial opinion masquerading as profound insight into complex public issues."[35] He stresses that exercises based upon this

approach are contrived because all the relevant information is given and the truth of the premises are assumed. Things are not that clear-cut in real life.

The main complaint McPeck directs at standard theorists of critical thinking and informal logicians is that they miss that real life is not clear-cut and hence they underestimate the complexity of the different kinds of information and overestimate the role of logic in assessment. In "Critical Thinking Without Logic" he states that standard theorists treat information as if it is 'mere information' that can be found in any encyclopedia: it is unambiguous and uncomplicated. P and Q function as placeholders for statements and information which can then be manipulated with logical rules. "The major requirements for such an assessment are epistemological, not logical, in character."[36]

McPeck makes a good point when he suggests that we should be wary of systems that ignore the complexity and ambiguous nature of information and knowledge and concentrate on the form that knowledge plugs into. Such a system would have limited practical use since most information is acknowledged to be complex, often ambiguous, and evolving. However, I also agree with Govier who says in her review of Critical Thinking and Education that, "No serious logician has ever thought that logic itself could provide all the knowledge needed to evaluate an argument on a specific topic."[37] And so, although McPeck

makes some good points, we need to be aware that the

criticisms he makes against the standard theorists are

not apt because he seriously misinterprets their position.

McPeck's assurance that critical thinking is

conceptually linked to epistemology is all very well, but

thus far we do not know precisely what that means because

we have no idea about what McPeck means by epistemology.

McPeck characterizes epistemology as the

> Analyses of good reasons for various beliefs.
> Ideally, epistemology attempts to provide
> the very best reasons for holding a belief,
> and to this extent its purpose is identical
> with that of rationality . . . it includes
> understanding concepts and the peculiarities
> of the nature of evidence, as they are
> understood by practitioners in the field
> from which they emanate.[38]

We find that he adds a number of provisos to the term

'epistemology'. First, he points out that the best reasons

need not entail logical certainty, there are other, less

stringent, criteria. Second, and most importantly,

> Just as there are different kinds of
> knowledge, so there are different kinds
> of reasons, evidence, and modes of justifying
> them. What might be a good reason for one
> kind of belief could be an extremely bad
> type of reason to support another kind of
> belief.[39]

Third, a minimal condition for understanding a good

reason in any field means understanding the full meaning

of the specialized, often technical language, in which

reasons are expressed. Critical thinking is epistemological

in character because it is concerned with the meanings

of statements (semantics) rather than logical relations

between propositions (syntactic).[40] "In a proposition, for example, that is expressed as P→Q it is far more important and more complex to understand what P or Q mean than to understand the syntactic relation between P and Q (expressed by the symbol→).[41]

Finally, epistemology is concerned with gaining an education and with gaining knowledge in various fields. Critical thinking is conceptually linked with epistemology; therefore, "Critical thinking is a necessary condition of education."[42] Education entails the acquisition of knowledge, but an analysis of knowledge shows that the knower must be in possession of an justification of what is putatively known. A common criticism of schools today is that students learn by rote acquiring facts without evidence.[43] Presumably McPeck wishes to place critical thinking in the process of justification.

Justification, he says, has two dimensions: (1) assessing the veracity and internal validity of evidence as presented, and (2) judging whether the belief with its evidence is compatible with an existing belief system. The process of assessing, fitting, and adjusting makes a belief 'belong' to a person rather than it being a proposition he has heard about. McPeck characterizes knowledge as,

        S knows P
        if and only if:
        (i) S believes P,
        (ii) S has adequate evidence of P,

(iii) The evidence constitutes S's
reason for believing P,
and (iv) P is true.[44]

Before making a judgment about P, S must suspend his belief

about P in order to assess the internal coherence of the

evidence and to integrate P into his belief system.

> But to say that a temporary suspension of judgment
> is required for justifying one's beliefs is simply
> another way of saying that one must be self-critical
> or possess a critical mind with respect to P in order
> to produce a justification. Thus the integration
> and internalization of beliefs and evidence require
> critical thinking. Moreover, critical thinking, as
> I have argued, involves just such a suspension of
> belief.[45]

Critical thinking fits into steps (ii) and (iii) of McPeck's

characterization of knowledge acquisition.

No one can be 'truly educated' in McPeck's sense of

'education' without understanding the epistemology of a

subject. To understand the epistemology of a subject,

to be educated in a subject, to have acquired knowledge

in the subject involves coming to hold the best reasons

for a belief. Holding the best reasons for a belief, which

in turn depends on critical thinking to provide a

justification for the belief.

McPeck compares the differences between the standard

approach to critical thinking or education and his own

approach with comparisons to reading research between the

basic skills approach and the reading comprehension approach

in order to clarify what is happening between the two we

are interested in. The basic skills approach "appears

to regard reading ability as the possession of certain symbolic 'decoding and pronunciation' skills."[46] It is logically possible for someone to be a good decoder without being able to read. McPeck offers the example of an individual who speaks English and who has learned to recognize and pronounce written German. That person successfully decodes the text, but we would not claim he is reading because he received no message from the symbols. He does not understand what the symbols mean.

In the comprehension approach "the cognitive prerequisites for reading comprehension are fundamental to the reading process, and, since comprehension involves understanding information, concepts, and various implications of these, the 'basic skills' view is overly simplistic."[47]

An examination of the research on critical thinking indicates to McPeck that it suffers from the same ailment as research on reading.

> Critical thinking, after all, likewise
> entails the appropriate processing of
> information and the making of inferences
> with respect to that information, but as
> with reading comprehension, critical thinking
> cannot be reduced to a few mechanical
> 'decoding' skills.[48]

We become mired in what McPeck calls in "Is Reading," the process/content debate, i.e. are the necessary competencies generalizable skills or acquired information? By bringing reading into McPeck's favourite issue we can easily guess

which side will win. Process always takes a backseat to content.

Critical thinking, like reading, depends on understanding. McPeck's epistemological approach to critical thinking succeeds, in his estimation, because it alone provides the understanding necessary to think critically about anything. With the link between critical thinking and epistemology established, we will look to the definitions which gain their mandate from the above argument.

### (III) McPeck's Definitions of Critical Thinking

We have examined the basic premises McPeck rests his conception of critical thinking on. We shall now look at the two definitions of critical thinking that arise from these premises. These definitions do not depend upon the features and nature of critical thinking for their content. The link between critical thinking and epistemology does not affect the definitions. As a matter of fact the first definition, "the propensity and skill to engage in an activity with reflective skepticism,"[49] is not very different from the definition commonly attributed to Ennis. Ennis claims critical thinking is "reasonable reflective thinking that is focused on deciding what to believe or do."[50] Both connect critical thinking with some form of reflective thinking and both focus on a process ('engaging in' and 'deciding'). On the face

of it neither definition is inherently superior to the

other; however, we need to see that the definitions McPeck

offers do not differentiate his conception of critical

thinking from an acceptable standard approach version.

The difference between McPeck and the standard approach

is the argument outlined in Sections I and II which says

critical thinking is subject-specific and conceptually

linked to epistemology.

The two approaches are differentiated by the conceptual

assumptions (as seen in Sections I and II) that they rest

on. McPeck's definition, for example, functions within

specific subjects rather than across them. To have the

'skill' he refers to, a person would have to be immersed

in the subject to know what 'skill(s)' to bring to bear

on a problem. Which 'skill(s)' remain undefined, because

different subjects and different problems will require

different skills.

> The types of skill to which I am drawing attention
> are those that have identifiable intellectual
> components, such as the use or partial use of
> various methods (research methods, statistical
> methods, programming methods), strategies (for
> solving problems, winning battles or games,
> attacking mountains) and techniques
> (crystallography versus spectrometry,) models
> versus pictures, telling versus showing . . .
> Not all skills permit the use of critical
> thinking.[51]

Unfortunately, this necessary vagueness in identifying

critical skills causes problems. McPeck has not provided

any criteria to decide which critical thinking skills to

use.  Perhaps it would take critical thinking skills to
tell which critical thinking skills are necessary in any
given situation, and that would lead us to believe the
critical thinker would already know what they are.  Perhaps
we could look at an activity and say "Those are critical
thinking skills"; or more than likely for McPeck, which
skills are used would depend on the circumstances, and
that again amounts to the original conjecture that we ought
to know what they are.

As I said, because critical thinking is
subject-specific what comprises critical thinking skills
necessarily remains undefined.  What is considered
'critical' in one subject may not be so in another subject.
What is critical in one subject is not necessarily critical
in another.  Realizing this, however, does not invalidate
my concern that McPeck gives us no way to identify which
skills count as critical at any particular place and time.
The definition is meant to facilitate the use of the
conception, to specifically detail what critical thinking
is and direct us in using it; however, because the
definition does not supply this identification, McPeck's
conception--at least, so defined--is unworkable.  This
lack is of major concern since critical thinking is meant
to be instrumental.  If we cannot identify what critical
skills are required at any given time and if we are not
provided with a way to decide, then the conception McPeck

offers lacks instrumentality. This failure only voids the definition; it does not affect the conception itself.

The use of 'propensity' in the definition refers to the attitudes, habits of mind, or character traits (although McPeck does not like this last term) of a critical thinker as opposed to critical thinking itself. However, apart from saying teachers must inculcate this undefined propensity in their students, McPeck does not describe what 'propensity' entails. All we are told is that both propensity and skill are necessary for a critical thinker. If the propensity carries over to an area where an individual lacks skill, then it is likely to be embarrassing[52] because he does not have the relevant knowledge to satisfy his proclivities. It would be like the comic Norm Crosby who uses large words in places and ways they do not belong. He has the propensity, lacks the skill, and gets a laugh. That kind of mistake in 'real life' would prove to be embarrassing and indicate a lack of success.

The term "reflective skepticism" is unclear. Under normal conditions we might be able to say what the individual words mean, but McPeck coins his own interpretation. For him 'skepticism' refers to a healthy advance towards the resolution of a problem. "Skepticism or suspension of assent towards a given statement, established norm or mode of doing things"[53] allows for

alternative hypotheses and possibilities. McPeck's
characterization rules out the negative baggage that
traditionally accompanies 'skepticism' which has a
connotation of doubting for doubt's sake. McPeck, however,
states that his type of 'skepticism' does not allow
pervasive or unjustified questioning. 'Reflection' comes
into play when a critical thinker attempts to determine
when to bring his skills to bear and what to ask.

From the above explanations he concludes that "no
one can think critically about everything, as there are
no Renaissance men in this age of specialized knowledge."[54]
Renaissance men apparently knew a great deal about a lot,
and this is no longer possible. Subjects today are too
complex for us to become as well-rounded as Renaissance
men.

Apart from the above considerations regarding the
terms and stipulations McPeck employs, a number of people
have expressed other concerns regarding McPeck's first
definition. In Educating Reason: Rationality, Critical
Thinking and Education, Siegel exposes a problem in the
alliance between reflective skepticism and critical
thinking. He charges that the term "reflective skepticism"
is unhelpful and the definition is circular. A skeptic
could be reflective and the skepticism unjustified;
alternatively, someone could be skeptical and not
reflective.[55]

I think it is important to point out that Siegel's criticism thus far does not carry much weight, because he ignores the fact that McPeck stipulated what he means by 'skepticism'. As we have seen, McPeck's version does not allow for unjustified skepticism. The norms of the subject area determine when we should start questioning, i.e. what we should question, and why we should question it. Our skepticism would always be justified. Moreover, McPeck might also reply that someone might be reflective and unskeptical but that this would mean, by his definition, that that person is not a critical thinker. A critical thinker is both reflective and skeptical. To be reflective without being skeptical or to be skeptical without being reflective means that that person does not meet the conditions of a critical thinker.

Siegel continues by saying that the question could not be settled by appropriateness, which is determined by the criteria of the problem area, because often we are to be reflectively skeptical about the criteria. We would need to use critical thinking to determine if an instance of reflective skepticism is justified. "Hence justified reflective skepticism assumes critical thinking; consequently, it cannot in turn explicate or define critical thinking."[56]

This last criticism is similar to the one I presented about needing critical thinking skills to determine which

critical thinking skills to bring to bear on a problem (p. 36 - 37). We are caught in an infinite loop. Critical skills are necessary to decide when and what critical skills to bring to bear on a problem; yet, we do not know how to acquire the first set of skills in order to decide on the second set. Reflective skepticism assumes critical thinking, so we cannot use reflective skepticism to explain critical thinking. Both, to use an informal logic fallacy, improperly beg the question.

Siegel seems to be saying that critical thinking is needed to determine when critical thinking is needed to determine when critical thinking is needed, and that referring to the norms of a subject area will not work because sometimes the norms are the very things that need to be questioned. This suggestion sounds solid and attractive; however, for McPeck, critical thinking is brought to bear when rational thinking fails.[57] That is to say, when we hit a problematic juncture in our reasoning, then critical thinking would be brought to bear on that problematic juncture (and I imagine that we supposedly know when that happened whether it occurred in the course of normal reasoning in the subject area or when the norms failed).

This suggestion also sounds good. It would sound better if McPeck had not stressed, in both his discussion of rationality and in his discussion of reflective

skepticism, that referring to the norms of the subject
area is essential to determine when to use judicious
skepticism.[58]

I can understand why Siegel has a problem with McPeck's
definition. Assessing the norms or standards of a subject
area is certainly important. Critical thinking would be
of little use if it could not question the norms in use
in any subject. Were that the case, where would the
advances in science, history, et. al. come from if the
norms in the field could not be questioned, let alone
altered? Yet I wonder what an acceptable definition of
critical thinking would look like if it includes using
the norms of a subject as well as questioning those same
norms. Some outside criteria would need to be applied
to determine when it is reasonable simply to use the given
norms and when to question those same norms. It begins
to sound as if McPeck's opponents are correct in claiming
that critical thinking is a subject unto itself. Thought
of in this way, the standards of critical thinking would
answer these difficult questions. That way critical
thinking would not be embedded in the very norms it was
meant to question.

Frederick Oscanyan and Perry Weddle individually focus
on the question whether it is reasonable or not to connect
critical and reflective thinking. Oscanyan highlights
the difference, <u>as he sees it</u>, between the two, and thus,

his criticism can be directed against Ennis as well. Weddle

pinpoints trouble surrounding "reflective skepticism" when

put into practice. I will look first at Oscanyan, then

Weddle.

In "Critical Thinking in California: Response to Brooke

Moore" Oscanyan states:

> Reflective thinking differs from critical thinking
> in its appreciation of the variety of mental
> acts and styles of thought, its sense of when
> criteria for evaluating mental acts are needed,
> and its willingness to suspect that criteria
> for evaluating mental acts are needed, and its
> willingness to suspect that the criteria it has
> got are not the only ones there can be.
> Reflective thinking is thinking about thinking. [59]

Apart from its limitation to mental acts, I cannot discern

a real conflict between reflective thinking and the way

McPeck wants critical thinking to work. Add 'activities'

to 'mental acts' and the two types of thinking would seem

to be indistinguishable.

Whether Oscanyan's characterization of reflective

thinking is correct or not, he is right in mentioning that

there is presumably a difference between reflective thinking

and critical thinking. If all we wanted were reflective

thinkers, then why not say so instead of arguing for years

about critical thinkers and critical thinking? According

to Ennis critical thinking is "reasonable reflective

thinking." According to McPeck critical thinking is

"engaging in an activity with reflective skepticism" where

the meaning of 'skepticism' is so stipulated as to remove

its negative baggage. If so many people agree critical thinking is reflective thinking then the answer as to what constitutes critical thinking was there all the time.

And yet upon reflection, there is the sense that reflective thinking and critical thinking are two different, yet closely related, types of thinking. By defining critical thinking as reflective thinking as Ennis does, we lose the force of 'critical' and end up defining an undefined term by referring to yet another undefined term - "reflective thinking."

McPeck's definition is in a stronger position than Ennis's because he allies critical thinking with reflective skepticism. This alliance provides for the reflective aspect of critical thinking each theorist believes is necessary and provides for the critical aspect by fusing reflection with skepticism. This fusion takes McPeck's definition beyond Ennis's because (1) the critical, questioning aspect of critical thinking is provided for, and (2) critical thinking becomes other than just another name for reflective thinking.

Weddle in "McPeck's Critical Thinking and Education", however, is not convinced that thinking critically about something is the same as thinking about it with reflective skepticism. Since thinking and critical thinking are about X, the skepticism would be aimed at some X. What, he asks, would that X be, the activity itself or the manner of

engagement? Using poker as an example, Weddle claims that it takes brains and guile to win at poker just as it does with chess. However, you are not reflectively skeptical about poker, you are playing it; therefore, X must refer to the manner of engagement.[60] A careful reading of the text would have shown Weddle the question was a moot one since McPeck makes it quite clear in Chapter One of Critical Thinking and Education that critical thinking concerns the process of thinking not the outcome of it. Be that as it may, Weddle sees poker's manner of engagement as being critical, but not reflectively skeptical. As he sees it, rational players who are reflectively skeptical about the minutiae of the game do not engage in an activity - they cash in their chips.[61]

I do not understand why Weddle believes we can engage critically in playing poker, but that we can not do so with reflective skepticism. He never clarifies his criticism. Clearly he believes playing poker involves thinking, since it takes "brains and guile" to win, so why would it not be possible to play poker with reflective skepticism? Part of the problem is his belief that reflective skepticism bogs you down in minutiae. He seems to believe that a player will be so busy thinking and questioning and creating alternate possibilities that he will become fossilized. This belief is false and depends either on a misreading of McPeck or on a lack of careful

reading.  McPeck clearly states that his definition does

not allow for pervasive or unjustified questioning.[62]

'Pervasive' is the operative word here.  Dredging up

minutiae would not be utilizing reflective skepticism.

Apart from McPeck's not providing a way to determine

when to question the norms of a subject and the vagueness

of the terms in his definition, the criticisms leveled

against it are not telling ones.  However, McPeck gives

a second more formal definition.  It sets out a problem

(X), the evidence for the problem area (E), and the

proposition or action in X (P).

> Then we can say of a given student (S) that
> he is a critical thinker in area X if S
> has the disposition and skill to do X in
> such a way that E, or some subset of E,
> is suspended as being sufficient to establish
> the truth or viability of P.[63]

Note that this definition shares a reliance on disposition

or propensity and skill with the first definition.  You

do not have one without the other.

Oddly enough, after all the commentary directed at

McPeck's "reflective skepticism" definition, only Siegel

addresses this more formal definition.  (At least in all

the material I have unearthed.)  In "McPeck, Informal Logic

and the Nature of Critical Thinking," for instance, Siegel

asserts that McPeck, in his formal definition, is correct

about "the act of suspension."[64]  However, while conferring

praise on McPeck for this, Siegel continues by claiming

that McPeck loses sight of this important point by grinding

his "subject specific" axe into the ground.[65]

Furthermore, Siegel praises McPeck because he notices the two necessary components of critical thinking - the reason assessment component and the critical attitude (willingness/desire to base actions on reasons). Both components are necessary, but jointly they are sufficient for critical thinking.[66] "To have the disposition and skill . . ." is to ask whether E provides compelling reasons for P.

> This is, I think, the defining characteristic
> of critical thinking: the focus on reasons
> and the power of reasons to warrant or
> justify beliefs, claims, and actions. A
> critical thinker, then is one who is
> appropriately moved by reasons: she has
> the propensity or disposition to believe
> and act in accordance with reasons, and
> she has the ability to assess the force
> of reasons in the many contexts in which
> reasons play a role.[67]

Siegel calls this the 'reasons' conception.

Apart from these comments by Siegel on McPeck's second, formal definition, which do not damn the definition itself, it has gone largely unremarked. Perhaps theorists have become so enamoured with his first definition that they do not even notice the second; perhaps they feel that the two are related and by undermining the first, they automatically undermine the second. My point is that this definition is neglected in the literature. Since the criticisms leveled at the first definition bombard the phrase "reflective skepticism", they have no effect on

the second definition which does not mention it. If taking
aim at subject-specificity is supposed to deal a knock-out
blow to the second definition, the critics would have to
specifically point out how this works - and they do not.
If they agree with it, it would be nice to know.

The definitions we have just been exploring work within
the mandate of the argument outlined in Sections I and
II. They also work within the limits outlined in McPeck's
ten features. This being the case, we will examine the
features next.

### (IV) The Features of Critical Thinking

With the definitions brought into the open, we will
now look at the ten features of critical thinking scattered
throughout Critical Thinking and Education. These features
set the limits for the above definitions. They indicate
how the definitions must operate for thinking to be critical
and indicate how they do not operate. However, it is
imperative that we realize that these features are very
broad. They do not, for example, give us a way to tell
which critical skills to bring to bear on a problem. Some
he states openly, others need to be extracted.
Nevertheless, these features indicate, in general terms,
what critical thinking does and does not include, its place
among other intellectual activities, and how it manifests
itself.

### (1) Critical Thinking and Non-propositional Logic

In his critique of Robert Ennis's first attempt at defining critical thinking, i.e. "the correct assessing of statements,"[68] McPeck argues that that definition is too narrow.

> any activity requiring deliberation is capable of employing critical thinking, and that it is not restricted to propositional knowledge.[69]
> In addition, there are many activities (for example, mountain climbing) and skills (chess, competitive wrestling and so one) that permit critical thought but do not necessarily involve the 'assessment of statements.'[70]

Thus critical thinking can be manifested in as many ways as there are types of activities that can be thought critically about - and these are innumerable. These activities can include acts of physical strength, dexterity, and the assessment of statements of some kind. Given the large number of activities, it is likely that there is a correspondingly large number of criteria for its correct application. "In this sense the phrase 'critical thinking' functions like the term 'creative': actions that deserve the epithet vary widely, but the intended meaning is constantly identifiable."[71] Critical thinking not only affects activities involving deliberation, but its nature and criteria alter with the nature of the activity.

From the above it is clear that non-propositional knowledge must play a large role in critical thinking. However, McPeck does not develop this side of critical thinking anymore than Ennis does. In fact McPeck limits

the discussion to the assessment of statements and propositional knowledge since that "is the prime area of interest in academic subjects."[72]  I have seen no examples in any of the literature of the development of his theory when applied to "decisions, skills, methods, and techniques."[73]  Since his concept of critical thinking involves more than the artificial boundaries set up in Chapter Two and in his book, I can only wonder how McPeck sees it working for non-propositional knowledge.

(2) Critical Thinking is Voluntary and Directed

Critical thinking is voluntary and directed.[74]  In order to think critically we must be consciously addressing some issue or problem, and we must decide to do so. Sometimes thoughts will seem to come upon us unexpectedly or uninvitedly; for instance, when we gaze at cloud formations and suddenly 'see' a horse's head in a cloud. Looking at the cloud is voluntary; however, the image of the horse's head popped in without being consciously thought.  Imagination, which McPeck states is another description of how we think,[75] often works that way.  To be an instance of critical thinking, we must not only want to and decide to think critically about something, we must also direct our thought processes.  Knowing the problem and knowing what is being sought and why, the critical thinker follows the paths he needs to satisfy his purpose in thinking critically about it.

(3) Critical Thinking is a Task and Achievement Concept

Critical thinking is a task and an achievement concept.[76] When we talk about a task concept as opposed to an achievement concept, our concern is with the means of acquiring something rather than with the desired end. An achievement concept focuses on the end achieved rather than the process used to reach it. Machiavelli's political theory, for example, can best be described as an achievement concept. Gaining and holding power, the end, justifies any actions, however unethical and brutal, to acquire it. According to McPeck, critical thinking is concerned with both how we achieve an end and the achievement itself. A task concept focuses on the process used to achieve an end. The concern is with how the end is reached, not with whether or not the 'correct' answer is achieved nor with always reaching a resolution. Thus, there can be errors in critical thinking. Skills can be used with varying degrees of efficacy. The definitions indicated that critical thinking depends on using critical skills, so it makes sense that critical thinking is a task concept.

However, McPeck's brief explanation suggests that critical thinking is a task but not an achievement concept. When solving a problem we cannot tell from the solution if it was reached critically, only the process used to reach it can be described this way. Furthermore, McPeck

tells us, even if the process (the task) is performed critically there is no guarantee we will reach a solution or that the solution will work.[77] In other words, there is no guarantee of attaining an achievement. Despite his claiming critical thinking is both a task and achievement concept, his argument supports critical thinking as a task and not an achievement concept unless he conceives of 'achievement' in another way.

Note: features (4) and (5) lend support to this conclusion, as we shall see, since they depend upon there not being a 'right' or 'correct' answer and upon some people being more critical than others. Focusing on 'achievement' can mean assuming some of the difficulties attendant with 'correctness', because achievement focuses on the end achieved. 'Achievement' can be read as wanting the 'correct' solution. To defuse this situation McPeck needs to clarify what he means by 'achievement' and how it relates to 'task', and to couch his supporting argument in such terms that defend critical thinking as both, not just as a task concept.

### (4) Critical Thinking Involves Degrees of Skill

The skills necessary for critical thinking admit of degrees.[78] Some people will have a greater grasp of the skills involved than others will, because skills are born of knowledge and experience in specific areas, and everyone has a unique history. Since critical thinking is concerned

with the means, not the end to a problem, success cannot always be guaranteed or expected.[79] This feature is closely related to feature three, but it is concerned more with the background a critical thinker brings to bear on the process than on the process itself.

### (5) Critical Thinking and 'Correctness'

The fifth boundary can be extracted from (1), (3), and (4), and that is that the notion of 'correctness' is inappropriate to the concept of critical thinking. There are two ways of understanding 'correct' when it is applied to critical thinking. It can stand for right (versus wrong), or it can stand for some appropriate procedure being followed.

When 'correct' functions as 'being right', it advances "a formal or absolute notion of critical thinking that permits of neither degrees nor mistakes."[80] Thus, it rules out both the third and fourth features. The third is ruled out because by focusing on whether an answer is 'right or wrong', we ignore the possibility that a solution may not have been reached critically, and by thus focusing on 'achievement', the 'task' facet is ignored. An absolute notion of being correct does not permit degrees or mistakes; thus, the fourth feature is ruled out. Since the argument McPeck offers for the third tells us that critical thinking focuses on process rather than on outcome, there can be degrees of skill and mistakes made in reaching a goal.

McPeck believes that Ennis missed the fact that thinking critically is a function of how a particular result is pursued not with what the result is. "Just as rationality is a function not of what is believed but of the way in which a belief is arrived at, so too with critical with critical thinking."[81]

McPeck should agree that a person can correctly follow a process even if the goal sought is never reached. For instance, if the goal is to solve a problem critically, then, broadly speaking, according to his definition, the correct procedure would be to bring reflective skepticism to bear. How well you use this procedure to a great extent depends upon how much practice you have had. The fact remains that 'correctness', as McPeck initially conceived it, has no place in critical thinking, and he was right to overtly exclude it.

(6) Critical Thinking and Rationality

Critical thinking is not equivalent to rationality or reasoning in general; it is a subset of it.[82] McPeck does not develop what rationality is, since he considers the concept to be too complex to be dealt with.[83] For this discussion he provisionally describes rationality as an "intelligent use of all available evidence for the solution of some problem."[84]

Critical thinking makes itself useful and gains conceptual content when we hit a problematic juncture in

reasoning, when we must say, "what counts as evidence?"
"The concept of critical thinking merely marks out the
facet of rationality that comprises the disposition, and
skill to find such difficulties in the normal course of
reasoning."[85]  McPeck admits that this is not a full
analysis, but believes it goes some way in clarifying a
lot of the confusion and disagreement surrounding critical
thinking and its relation to education.

I am afraid that I cannot agree with this last
statement, which seems to me to be overly optimistic.
McPeck recognizes that a problem exists in discussions
of critical thinking and informal logic due to the use
of opaque, yet related terms like 'rationality',
'reasoning', 'problem solving', 'intelligence', 'decision
making', 'thinking', etc. - i.e. what has been referred
to as the Network Problem.[86]  I would like to commend him
for realizing there are differences and for attempting
to deal with the difference between critical thinking and
rationality even in some small fashion.  However, even
granting that he is not giving a detailed analysis, I
believe we need either to hear more on the relation between
rationality and critical thinking or to hear something
a little different, to see that this analysis is even
warranted.  At this juncture in his analysis, this
discussion's inclusion is unnecessary and clouds the issue.

For instance, we should know why critical thinking

is needed at McPeck's problematic junctures and what it brings to bear upon such a juncture that rationality itself cannot. As matters stand, critical thinking and rationality seem to be the same thing since critical thinking, like rationality, is concerned with using evidence to solve problems.[87] Perhaps the difference lies in the fact that rationality involves "the <u>intelligent</u> use of all available evidence" (italics mine).[88] What constitutes "intelligent use" and would we not prefer critical thinking to be done intelligently? The difference between the two remains unclear.

(7) Critical Thinking and Creative Thinking

Despite arguments early in Chapter One, McPeck implicitly links creative and critical thinking. In those early arguments (pp. 4 - 5), where McPeck tries to illustrate why critical thinking is mistakenly reified into a curriculum subject, he suggests that this reification occurs because of the emphasis on 'critical' as if critical thinking alters the nature and operation of thinking. However, 'critical' behaves like 'precocious,' 'imaginative', 'sensitive', and 'creative', which qualify thinking and which, in themselves, do not describe what is being thought about.[89] "Adding the adjective 'critical' to the phrase 'thinking about X' describes in some general way how something is thought about, but it does not describe that something."[90]

Notice that 'critical' and 'creative' are two <u>different</u>
types of thinking. He describes 'creative' as being
something usually novel and aesthetically appealing while
'critical' could be, but does not always, function in
conjunction with it.[91]

However, no matter what his early explanations lead
us to believe about the relationship between 'creative'
and 'critical' thinking, he clearly believes the two are
in some way connected. When he argues that logic is of
limited value to critical thinking he concludes that

> Logic can help to eliminate hypotheses,
> conjectures, and plausible solutions, but
> it cannot provide them. In the most common
> problem solving situations within disciplines
> and working fields of knowledge, the most
> difficult - and perhaps most important -
> phase is that of producing a hypothesis,
> conjecture, or alternative that is worth
> checking or trying out.[92]

He clearly implies that generating hypotheses and
alternatives are important for critical thinking; however,
providing such hypotheses, especially when alternative
standards are sought, is a function of creativity. Thus
McPeck implicitly links creative with critical thinking.

McPeck would have been better off by explicitly drawing
out this link. Without it critical thinking is hopelessly
stunted, lacking its hypothesis-building component. As
Micheal Scriven notes, and as McPeck himself would agree,
'critical' alone is negative. It must be constructive
and creative to lead to new knowledge. Thinking of

alternative hypotheses is a creative act; moreover,

creativity is useless without critical skills since,

presumably, it takes critical thinking to know where

creativity ought to be applied.[93] Ennis states that "This

conception (of rational thinking) combines creative

thinking, critical thinking, and problem solving - all

skills that are thoroughly interdependent in practice."[94]

### (8) Critical Thinking and Problem Solving

From the quote on the limitations of logic on critical

thinking, McPeck concludes that the prescriptions logic

can make are so general and so obvious as to be virtually

useless in problem solving.[95] I am concerned with McPeck's

alliance of critical thinking and problem solving. The

above sentence typifies the identification which McPeck

makes throughout <u>Critical Thinking and Education</u> and

throughout his articles on the subject.

The link is also in evidence in several places (pages

9, 15, 16, and 17) in just the first chapter of his book

and this list is by no means exhaustive. A good example

appears in "Trivial Pursuit." "Critical thinking ability

. . . varies directly with the amount of knowledge required

by the problem."[96] He uses J.P. Guilford in "The Evaluation

of Critical Thinking Programs: Dangers and Dogmas" to

support his contention about the non-generalizability of

skills, and it also supports his alignment of critical

thinking with problem solving. "'Problems are simply too

varied, and each type seems to call upon its own pattern of abilities.'"[97]

This identification of critical thinking with problem solving is yet another aspect of the Network Problem. Problem solving often involves critical thinking. However, I am not prepared to agree that all problem solving needs to utilize critical thinking to derive a solution. Deciding which is the most efficacious route to reach a mountain summit is a problem, but as I will argue in the last chapter, it is not a case for critical thinking. Alternately, not all critical thinking revolves around a problem to be solved. As Jonathan Adler points out, we can engage in critical thinking simply out of intellectual curiousity.[98] It is not the case that something needs to be amiss.

Critical thinking might be equated with problem solving if it were stipulated that a 'problem' consists of any situation where we must choose one facet from many available ones. However, I believe that would mean expanding the nature of what constitutes a problem far beyond what is normally meant by the word. It would be stipulating the meaning of 'problem' just to fit McPeck's concept of critical thinking.

(9) Critical Thinking and the Exclusion of Value Judgments

In Chapter Three McPeck uses Ennis, once again, as a jumping off point to establish another feature of critical

thinking. He sees the most serious limitation of Ennis's list of critical thinking skills and attitudes as its exclusion of value judgments. For McPeck, and this is a crucial thing to realize, critical thinking is full of value judgments.

As he points out, any decision about how much evidence is enough is a direct function of how important it is that a statement be right or wrong. A determination of what is more important depends upon assessing each piece of evidence in terms of the relative value placed on them. "A person's values are an integral feature of rational judgment, and the pragmatic dimension (in Ennis's theory) properly serves to underline this fact."[99]

The inclusion of 'value judgments' in this list of features of critical thinking is something of a chimera. What people typically mean, and what Ennis means, by 'value judgment' is prescribing a judgment, such as good, evil, right, wrong, beautiful, or ugly to certain things, actions, and entities. The statement "abortion is wrong" is a value judgment. It is also a good example of why Ennis does not wish to include value judgments in the early stages of learning how to think critically. Many issues revolving around 'value judgments' are contentious and more likely to cloud the discussion and retard the assimilation of critical thinking skills and dispositions than clarify them. Students can become so engrossed in arguing their

own points of view that they miss the material that they

are supposed to be learning.

When 'value judgments' are understood this way I am

certain that McPeck would agree that they ought not to

be included when the criteria of critical thinking are

first being broached -even if they are being broached in

specific subjects. To include them would only confuse

those students who are attempting to gain a minimal

understanding of the subject and who are not yet able to

operate as successful critical thinkers. When McPeck

discusses critical thinking tests in Chapter Six of his

book, he makes it clear that he is aware of the problems

attendant with the inclusion of 'value judgments'. He

points out that many questions in such tests are meant

to be done without allowing personal attitudes and values

to interfere.[100] However, the questions depend on a

person's political views. "What one considers important,

which is one of the requirements of 'strong' argument is

similarly determined by one's value orientation."[101] McPeck

thinks, and I agree, that the correct response would be

to attack the inadequacy of the questions, but that option

is not available. The point is, McPeck recognizes the

trouble that value judgments can cause and, in critical

thinking tests. for example, he would prefer to point out

that that is a problem rather than still use the faulty

questions.

Taking McPeck's awareness of the problems with including 'value judgments' in critical thinking, we have to wonder why he berates Ennis for excluding them and for insisting that value judgments belong in critical thinking. The reason is that when McPeck aligns himself against Ennis, he is unaware that he and Ennis are talking about two different and compatible things. Ennis, as we have seen, is talking about the difficulty of assessing value judgments. In his reply to Ennis, McPeck insists that assessing reasoning is an activity which belongs to the class, evaluating. By asserting that critical thinking involves 'evaluating' McPeck believes that he is denying Ennis's proposition that 'value judgments' need to withheld from critical thinking at this point.

McPeck is mistaken. Clearly, Ennis is not denying that critical thinking involves evaluating. I am sure that he would agree that determining whether one piece of evidence for a belief is more important than another piece of evidence depends on assessing each piece of evidence in terms of the relative value placed on them. 'Value judgments', however, are a class of things that must be evaluated; therefore, Ennis's proposition and McPeck's proposition are not incompatible. Ennis merely wishes to remove 'value judgments' from McPeck's evaluation process at this time.

I stated earlier in the discussion of 'value judgments'

that including 'value judgments' in McPeck's list of
features is a chimera. I said this because McPeck's
inclusion of 'value judgments' was not quite what it
appeared to be on the surface. To say that critical
thinking needs to include evaluating, which is what McPeck
wants, is not as profound and as arguable as saying that
'value judgments', in Ennis's sense, ought to be included
in critical thinking since I can think of no one who would
deny critical thinking involves evaluating and many who
would agree withholding 'value judgments' would do no harm.

### (10) Critical Thinking and Logic

The final feature of critical thinking is one of
omission rather than addition. Throughout <u>Critical Thinking
and Education</u> and the various journal articles, McPeck
has made it quite clear that critical thinking cannot be
equated to logic - either formal or informal. Chapter
Four of his book deals specifically with the inadequacy
of informal logic to meet the needs of critical thinking.

Among other things he argues that people can be
critical thinkers and not informal logicians,[102] there
is no difference between informal logic and rhetoric,[103]
informal logic devalues the complex and ambiguous nature
of knowledge,[104] and that informal logic is concerned with
validity rather than truth and answers to problems.[105]

I will not address the soundness of the above arguments
because they could encompass a chapter all by themselves.

Suffice it to say there are strong arguments advanced against each of his main premises and his overall conclusion that informal logic and critical thinking do not belong together. I will say that in my opinion his analysis of informal logic fails primarily because he misinterprets the nature and conditions of informal logic. However, I admit that this claim requires defense. What we must understand, at this point, is that McPeck sees critical thinking and logic - formal and informal - as two very different things.

## (V) Summary

The title of this chapter, The Meaning of Critical Thinking, is taken from the first chapter of Critical Thinking and Education. McPeck wants to provide the first thorough analysis of the concept of critical thinking and he devotes the first two chapters to this analysis.

The important point for us to see in his analysis is the conceptual link he makes between critical thinking and epistemology. All of McPeck's arguments on critical thinking, whether they be about the failure of informal logic theory or of critical thinking, revolve around this point. It is imperative that we understand that McPeck reached this position due to some very basic assumptions; namely, (1) thinking is always about some X, (2) there is no set of generalized skills called critical thinking, and (3) critical thinking, therefore, is subject-specific.

# CHAPTER THREE

## THE ANALYSIS OF MCPECK'S CONCEPTION OF CRITICAL THINKING

> . . . because collective human experience has
> discovered that different kinds of beliefs often
> have different kinds of good reason supporting
> them, it follows that there will be many different
> epistemologies corresponding to different fields
> of human endeavour. A corollary of this is that
> logic itself is parasitic upon epistemology,
> since logic is merely the formalization of good
> reasons once they have been discovered. Thus
> epistemology, and to some extent logic, have
> intra-field validity but not necessarily
> inter-field validity.[1]

The above quote appears in Chapter Seven of Critical
Thinking and Education and embodies much of what is wrong
with McPeck's conception of critical thinking. Here, for
instance, we see him explicitly apportioning epistemology
into separate epistemologies which, as we shall see, Siegel
cites as a major difficulty with McPeck's position.
However, Siegel did not follow his criticism to its logical
conclusion. I will do just that, arguing that the same
reasoning has the upshot that there are as many different
concepts of critical thinking as there are fields of human
endeavour.

As we shall see, the arguments McPeck used to support
his three premises and his conclusion about the nature
and operation of critical thinking lead to the above

of the concepts he uses allows undermining of his theory
of critical thinking to be undermined.

From the above sorts of considerations, I will conclude
that McPeck's concept of critical thinking fails because
(1) the vagueness of the related concepts that he uses
to define critical thinking lead to an ill-defined concept
of critical thinking, and (2) the arguments establishing
the concept of critical thinking, as well as establishing
the network terms, lead to the conclusion that there is
no concept of critical thinking. His analysis argues the
object of that analysis into non-existence. The arguments
mentioned in (2) make (1) possible because it is (2)'s
arguments that link the network terms together making
critical thinking vulnerable.

We will examine many of these related terms in the
following Sections. In our exploration we will see how
closely these terms become connected, why they turn out
to be subject-specific (even where McPeck would not find
it desirable), and finally how the combination of being
ill-defined and subject-specific topples McPeck's conception
of critical thinking. We will start with 'subject', since,
if virtually everything turns out to be subject-specific,
it is necessary to know what a subject is. We will move
on to 'reasons' which support our knowing 'subjects', to
the overt relationships between critical thinking,
epistemology, and rationality, and to the relationships
between critical thinking, argument analysis, and informal

ogic. Finally, we will see how the relationships outlined in the preceding Sections lead to the failure of McPeck's concept of critical thinking.

### (I) Subjects, Fields, Domains, and Disciplines

Before I demonstrate the vagueness of terms like 'rationality', 'critical thinking', 'epistemology', and 'argument'; before presenting Siegel's argument against McPeck's theory of epistemology; and before explaining specifically how his concept of critical thinking shatters,I will examine the nature of a term which plays a central role in McPeck's theory: 'subject'. This discussion belongs here rather than in Chapter Two because first in Chapter Two my main concern was with illustrating the arguments that led to the conclusion that critical thinking is subject-specific, and any exploration of the nature of 'subject' would have confused matters, and second the nature of 'subject', like the nature of 'rationality' and 'critical thinking' is vague.

My first concern revolves around an issue of clarification. In the critical thinking literature we often see subject-specificity used interchangeably with field, domain, and discipline-specificity;[4] however, all four terms remain vague. McPeck, unfortunately, does not see that he has a problem. He says that

> One of the strengths of the present analysis
> is that while it recognizes that critical thinking
> is connected logically with specific tasks or
> subject matter, it places no a priori restriction

on what that subject matter might be.[5]

On the face of it, McPeck has a good case. 'Subject' is vague, because it is meant to be in order to prevent critical thinking from being too narrowly limited. However, we now have no idea what critical skills to bring to bear on a problem since critical skills depend on the subject, and as I shall shortly argue, we have no way of telling what constitutes a subject. In Chapter Two, I argued that McPeck gave us no mechanism for deciding what critical skills are necessary when we at least had a subject. Here we do not even have that, since subjects could be either very broad or very narrow. What do critical thinking skills become then? How narrowly or broadly should we take them?

I would like some specific examples to show precisely what McPeck means by different kinds of knowledge or what he means by 'subject'. In "Critical Thinking and Subject-Specificity Clarification and Needed Research" Ennis differentiates between 'subject', 'discipline', and 'domain'. Sometimes, he points out, 'subject' means something taught in school and sometimes simply a topic under consideration.[6] Since McPeck clearly wants critical thinking to apply to circumstances and situations outside school, I think we can take it that he holds Ennis's latter characterization. However, we do not advance any further with this realization since we do not know what 'topic' encompasses or how critical thinking skills relate to it. Furthermore, even if McPeck would agree with Ennis's

suitably vague characterization of 'subject', he does not agree when Ennis characterizes McPeck approach as having a discipline bias. In Chapter Seven he explicitly denies that is the case.[7] For him, subject matter is broader than the kinds of disciplines we meet in University.

However, even after Ennis's intervention is considered there is no help for McPeck. Clarifying McPeck's position on whether 'subject' refers to only in-school topics does not clarify what McPeck means by 'subject'. I can see two possibilities: (1) compartmentalizing life into areas as subjects as in school, i.e. equating it to 'discipline', as he seems to have been doing in his discussion up until now, despite his denial, or (2) focusing on broader domains, even broader than religious knowledge and scientific knowledge, since he means critical thinking to apply to a pursuit like mountain climbing. However, to simplify the matter I will limit this discussion to easily distinguishable domains like religious belief and scientific knowledge. The breadth of the domains is enough to illustrate what is wrong with this broad characterization. Under (1) for example, we would find an issue like alcoholism divided into its legal, biological, psychological, cultural, etc. aspects. Science would be divided into biology, physics, chemistry, etc. as subjects with each maintaining its own language, own epistemology, and own type of good reasons. We often see McPeck using examples that suggest such a reading.

In (2), I can see how an acceptable type of reason for belief in a religious context, like faith in the Bible, knowledge from religious tenets, or talking to God, would be unacceptable in a scientific context.  In the Christian tradition commentators, for example, start with the premise "There is a God" and shape their critical discussions and base inferences on this premise.  Alternatively, many philosophers start with the question "Is there a God?" rather than with the positive assertion that He exists and their inference base takes an entirely different course.

If McPeck prefers (2), focusing on broader domains, then he needs to explain what 'subjects' or 'domains' he has in mind.  The domains are not self-explanatory, and he does not provide any criteria for deciding what the limits of a subject are to be nor how to discover them. And in fact it is unlikely that he means (2) because, notwithstanding the fact there are no Renaissance men, McPeck clearly thinks there can be experts in subjects areas, or at least, individuals who are sufficiently immersed in the subjects to engage in critical evaluations which are impossible without understanding that subject.

'Subjects' as set up in (2) are too broad to breed either experts, unless those purported experts are truly exceptional people, or people well versed in the subject. Whoever heard of a scientific expert who could speak with equal authority in any given scientific area?  Medicine as science is a case in point.  Someone with a Ph.D. in

Physics may be an expert in physics, but not in medicine. Even a medical doctor cannot speak authoritatively in every area of medicine. When determining why someone died, a pathologist makes a better witness in court than a general practitioner, cardiologist, or neurologist would on the same topic. All the above may be scientific experts and fit into (2)'s science domain, but the domain itself is too broad for anyone to be well versed in the subject - science. It would seem that 'subject' must refer to something narrower by far than the type of broad domains I have suggested. The problem intensifies if we replace the domains I used with the even broader domains McPeck's analysis indicates.

## (II) Reasons and Fallacies

Assuming that the nature of 'subject' has been established, and whether we take it, by a process of elimination, to be a discipline or to be something else which we have not in actuality discussed, we discover yet another characterization - this time we need to know what McPeck means by different types of reasons. Knowing and understanding a subject means we must be able to provide reasons as to why a certain 'fact' is so; yet, he does not specify what constitutes a 'reason'. He needs to furnish examples of what he considers to be different types of reasons. If much of collective human experience is subject-specific, including what constitutes good reasons,

as the first quote in this chapter suggests, would it be outrageous to conclude that types of reasons are also subject-specific? I do not think so.

McPeck has argued that what constitutes an instance of _critical_ thinking depends on the subject matter.[8] That is to say, what qualifies a particular instance of thinking or a particular skill as critical depends upon the subject and circumstances surrounding that instance of thinking or that skill. A critical thinker in art history has the requisite skills and experience to know how to apply those skills critically and, since he is immersed in the field, when to bring them to bear. That art historian, if we assume all he knows is art history, would not qualify as a critical thinker in the philosophy of religion, because he would not be immersed in the requisite field; hence, he would be unable to discern when critical thinking is needed and what skills to bring to bear.

What constitutes a good reason for a belief, or rather what constitutes knowing what a good reason is, depends on the discipline to which the reason belongs. Our art historian knows what the best reasons are for placing Michelangelo amongst the world's great sculptors. He knows, for instance, why _David_ is a masterpiece, and its place in Renaissance art. Our art historian would not know what constitutes a good reason in discussions about the Immaculate Conception, because he would not be steeped in the epistemology of religious theory. Conversely,

someone immersed in religious theory would not thereby
understand what makes Michelangelo, as an artist, great.
It follows that types of reasons are subject-specific.
Those who know the subject have mastered the epistemology
of the discipline and know when a reason is a good one.

Granting that what constitutes a good reason depends
on the subject, the question remains; Are there different
types of reasons and do they have intra-field or inter-field
validity?  Given McPeck's arguments on critical thinking,
it follows that he would have to argue that different
subjects accept different types of reasons.  The type of
factors acceptable as reasons in religion are not, or might
not be, acceptable in art, law, psychology, etc., and vice
versa.  Just as skills and methods belong to separate
subjects, so too do reasons.

This position may become clearer if we examine McPeck's
treatment of informal logic.  Following his account of
Johnson and Blair's description of informal logic in Chapter
Four, McPeck bisects the subject into fallacy theory and
argumentation theory.[9]  For the most part his treatment
focuses on fallacy theory.  This treatment will aid us
in understanding the subject-specific nature of reasons,
because in my estimation fallacies exhibit the same logical
behaviour as reasons do.

## Informal Logic Fallacies

Informal logic propounds the idea that there are

identifiable and common errors that occur in the normal course of reasoning. These errors (when identified, labeled, and their conditions formulated) are called fallacies. A fallacy applies across subjects. Once you know what equivocation is, for example, then, to put it in its simplest form, you are supposed to realize that equivocation is the same whatever the discipline. Informal logic is meant to be a subject unto itself and applicable to other subjects; whereas, critical thinking is in McPeck's view subsumed by the epistemology of subjects. That basic difference explains why informal logic allows for inter-field validity, and McPeck's critical thinking does not. Ennis argues that fallacies have bridge-jumping criteria.[10] That is, their criteria are such that fallacies apply to many subjects.

McPeck, however, argues that the only thing that instances of assumption identification, equivocation, ad hominem, irrelevant reasons, etc. share from subject to subject is the name. What counts as an assumption depends upon the subject in question. General prescriptions are unhelpful if you lack a thorough working knowledge of the field so that you can identify one.

Since McPeck's argument and main premises support dividing life into different epistemologies, and since his characterization of "different kinds of belief", rests on having "different kinds of good reason supporting them,"[11] I must conclude that reasons operate in a similar

subject-specific fashion. 'Reason' functions like 'equivocation'. The name 'reason' applies across various subjects, but what counts as a reason depends upon the subject in question.

McPeck, and Johnson and Blair, are seeking two different things. Johnson and Blair state that

> By the theory of fallacy, we mean the attempt
> to formulate with clarity and rigour the
> conditions under which a particular fallacy
> occurs, along with related question about the
> nature and/or existence of various kinds of
> fallacy.[12]

Johnson and Blair suggest that there is a lack of progress on fallacies, such as irrelevant reason, and claim a great deal of work remains to be done. McPeck suggests that they are wrong. The kind of account Johnson and Blair require cannot, in principle, be given because "canons of relevance and standards of adequacy are dependent on subject matter."[13]

I believe that McPeck wants all the specific conditions set out. By saying that fallacies depend on the subject in question McPeck would never accept a general account. He wants to know what makes a case of equivocation, for example, a instance of equivocation for each subject. Naturally, it would be impossible to provide for every eventuality and every subject in a definition. However, even he should agree that the nature of equivocation does not alter, but what makes for an instance of equivocation does change from subject to subject. Johnson and Blair

are seeking the general nature, not the specific one.
McPeck's criticsms are not telling since he is after
something different from Johnson and Blair. Simply to
say that they ought to provide what he himself would want
is not enough.

When discussing the theory of argumentation, McPeck
argues informal logicians assume that 'generalizable',
(which fallacies are purported to be) is equivalent to
'repeatable'.[14] He characterizes 'generalizable' as "a
principle applied in one area of human experience that
must also apply in others."[15] This, he says, overlooks
the distinction between repeatable in a domain and applying
to several domains. Fallacies, critical skills, and reasons
can be used again and again (i.e. repeatable) in a domain
or subject and are, in that sense, generalizable; however,
they are not generalizable in the sense that they are
repeatable across several domains. McPeck employs the
analogy that the rules of one game do not apply in others.[16]

The comparison should not be made at the level of
rules of games. What is most important for our purposes
here is what makes a rule a rule rather than what makes
it a rule of this game rather than a rule of another game.
Perhaps the point would be easier to understand if I put
it on the level of games. What is important is what makes
a game a game rather than what makes it one particular
game rather than another. We want to know what it is about
Monopoly, Super Mario Brothers, poker, and baseball that

makes them all games.  Or, to put it back on the level of rules, what it is about the rules of the games that makes them all rules.

Fallacies and reasons, in my view, are like games. Fallacies have criteria, just as games have rules.  Each fallacy has its own set of criteria, just as each game has its own set of rules.  However, I am not comparing a fallacy like equivocation to a game like Monopoly.  I am comparing a fallacy like equivocation to the concept of game(s) itself.  Equivocation is general, its criteria are general, and it applies in many subjects.  The nature of a game is general, rules which are part of games are general, and the concept applies to many activities.

McPeck prefers, wrongly I believe, to compare fallacies (reasons) with individual rules of individual games.  On those terms he is correct to assert that the rules of one game do not apply in others, but, as I have said, I believe this analogy to be misguided.

I have argued that on McPeck's account of things reasons must be aligned with different subjects, that there are types of reasons that belong to different areas of belief, that the concept of 'reasons' is subject-specific and hence, conceptually linked to epistemology just as critical thinking is.  Whatever happens to epistemology befalls 'reasons' and 'critical thinking'.

(III) The Analogous Situation Between Rationality,
Epistemology, and Critical Thinking

McPeck establishes relationships between critical
thinking and a number of other concepts such as,
rationality, epistemology, informal logic, and argument
analysis.  Here we are interested in rationality, critical
thinking, and epistemology.  We have already examined where
he sees that link coming from and why.  We are concerned,
at this time, with how the equation of rationality and
critical thinking connects the equation of epistemology
and critical thinking.  The relationships between the three
concepts and how they support one another is important;
the way McPeck moves from rationality to critical thinking
to epistemology is not so important.  If these concepts
are closely intertwined and some, or all, are based on
faulty assumptions, then just as types of reasons and
fallacies become suspect because of their ill-defined
natures, then so too will rationality, which is closely
connected to the latter two concepts.

In Chapter Two McPeck characterizes epistemology as
the

> Analyses of good reasons for various beliefs.
> Ideally, epistemology attempts to provide the
> very best reasons for holding a belief, and to
> this extent its purpose is identical with that
> of rationality . . . [it] includes understanding
> concepts and peculiarities of the nature of
> evidence, as they are understood by practitioners
> in the field from which they emanate (italics
> mine).[17]

Earlier we saw that McPeck chose not to develop what

rationality is on the ground that the concept was too
complex; however, he did provisionally describe it as an
"intelligent use of all available evidence for the solution
of some problem."[18] We must assume that providing the
very best reasons for holding a belief is the same as
intelligently using all available evidence to find a
solution to a problem.  Remember, McPeck aligns critical
thinking with problem solving and has also placed critical
thinking in the justification process of coming to hold
a belief.

Since rationality and epistemology share the same
purpose, are we to suppose that rationality is equivalent
to epistemology?  Looking back to McPeck's characterization
of epistemology, we note that he does say that the two
concepts share the same purpose to the extent that
epistemology attempts to provide the best reasons for
holding a belief (italics mine).  The phrase "to the extent"
suggests that there are differences.  Unfortunately, if
there are such differences we are not told what they are.
Perhaps McPeck did not provide them because to do so would
include developing the concept of rationality (which I
argued in Chapter One he needs to do); or because he thought
the differences were obvious; or because he did not think
failing to do so would damage his work; or because some
instinct told him to add a qualifying phrase.  Whatever
the reason, we are left with the concepts of rationality
and epistemology sharing the same purpose and lacking any

visible differences. We are left with the question, since
there are no obvious differences are the two concepts then
equivalent? If not equivalent, then since they share the
same purpose, they seem to be related. In what fashion
and how closely are they related? If only contingently
rather than necessarily, then if the arguments for one
are proven to be invalid the other concept will have a
reasonable chance of survival; that is, unless it is based
upon some very basic and misguided assumptions underlying
the arguments and characterizations of most of his concepts
- which may very likely prove to be the case here.

Remember also that in Chapter One of Critical Thinking
and Education McPeck claimed that critical thinking is
an aspect of rationality; since there are no visible
differences between McPeck's characterization rationality
and epistemology, then it can be said that it follows that
critical thinking is also an aspect of epistemology. This
conclusion follows not only because rationality and
epistemology appear to be equivalent (which would naturally
lead to the conclusion that critical thinking shares the
same relationship with both since both would be virtually
the same thing), but because critical thinking is also
connected to rationality by their having a similar purpose.
"The concept of critical thinking merely marks out the
facet of rationality that comprises the disposition, and
skill to find such difficulties in the normal course of
reasoning."[19] The purpose of critical thinking is to

satisfy the purpose of rationality. Rationality shares
its purpose with epistemology; therefore, critical
thinking's purpose is epistemology's purpose. Since to
satisfy this purpose critical thinking operates as an aspect
of rationality, then to satisfy epistemology's purpose
critical thinking must be an aspect of epistemology as
well.

It makes a certain amount of sense to suggest that
if critical thinking is to be taught as integral to the
subject and if a subject is to be taught from an
epistemological standpoint, as McPeck wishes, then critical
thinking is an aspect of epistemology. That is, it makes
a certain amount of sense if we assume that there is more
to epistemology than critical thinking.

On the other hand, in Chapter Two I argued that the
division between critical thinking and rationality is not
as clear-cut as McPeck has made it out to be; therefore,
if we attempt to use the apparent relationship between
critical thinking and rationality to support the
relationship between critical thinking and epistemology
we are at a loss.

The relationship between critical thinking and
epistemology has been developed elsewhere[20] and far more
convincingly than here where the vagueness of 'rationality'
and its linkage to critical thinking provides only weak
support in establishing a conceptual link between critical

thinking and epistemology. However, the relationship

afforded by that very vagueness and the similar linkage

rationality and epistemology share with critical thinking

make it very clear that if epistemology is proven to be

unworkable so too goes critical thinking and hence

rationality. Or if critical thinking is proven to be

unworkable, rationality and epistemology will suffer the

same fate. I do not think I need to spell out what happens

if rationality fails - the correlation is pretty clear.

The big question is: Do any of the concepts discussed

prove to be unworkable? The answer, as we shall see in

Part V, is yes. But first we will look at the relationships

between argument analysis, informal logic, and critical

thinking. Critical thinking, as we saw, is an aspect of

rationality and of epistemology, but argument analysis

and informal logic are aspects of critical thinking.

(IV) The Relationship Between Argument Analysis, Informal
Logic and Critical Thinking

No one can anticipate every conclusion or line of

argument that may arise from his arguments. If it were

possible, then there would be no unwanted or unwelcome

or unwitting conclusions. But such there are. Some are

more plausible and reasonable than others. The consequences

outlined in Chapter Three of this thesis thus far are of

that nature. There are other conclusions that are not

is determining validity not truth.[26]

McPeck decries informal logic by name rather than just by its association with argument analysis. Basically, he claims that logic as a whole, whether formal or informal, cannot satisfy the goal of critical thinking because it stresses form over content and it seeks validity over relevance and acceptability, it ignores and demeans the complex nature of information by treating information as if it is unambiguous and comprised of 'mere' facts.

> The charge that an argument is 'fallacious' requires first seeing it as having a certain pattern . . . But then, secondly, it requires determining whether the particular argument is of the fallacious or non-fallacious form. To determine if an argument contains a fallacy we must, however, go outside of the forms, so to speak, and assess facts and beliefs about the world.[27]

Unfortunately McPeck's criticisms of logic suffer from two failings: (1) they misinterpret the nature of informal logic and (2) they do not differentiate between formal and informal logic. He needs to do so. We have already dealt with (1) in Part III, Chapter Two. To recapitulate: informal logic takes note of and attempts to deal with and control for the ambiguities inherent in language and information. Like critical thinking, informal logic works with the content of statements as opposed to the form they plug into. Johnson and Blair, who McPeck uses as the focal point for the fallacy approach, state that fallacies are concerned with relevancy, sufficiency,

dealing with arguments is important to critical thinking."[33]

No matter how the two are related, it is unreasonable to deny the relationship. Deny it McPeck assuredly would if he could, but he cannot. He would prefer to declare that informal logic as it is conceived does not exist because it claims to have the impossible inter-field validity. However, he makes it clear that argument analysis does exist and he says that attempts to formulate informal logic turn out to be nothing more than argument analysis;[34] therefore, informal logic exists. Unfortunately for informal logic, for it to exist in McPeck's world, it must assume a totally different personality from the one informal theorists intend. To be facetious about it, informal logic both exists and does not exist according to McPeck, which shows his reasoning is inconsistent.

### (V) Harvey Siegel on McPeck's Conceptualization of Epistemology

In Sections I and II of this Chapter, where I concluded that McPeck must be using version (1) of what comprises a 'subject', i.e. compartmentalizing life into areas as in subjects in school, to characterize a subject and that types of reasons are subject-specific. Knowing that critical thinking, which is subject-specific, is conceptually linked with epistemology, I am forced to ask if the above does not lead to the idea that there must be separate epistemologies rather than a single

understanding of "the epistemology of the subject"
- "here we regard this sort of thing as a good
reason" - without understanding why this sort
of a thing should count as a reason here, but
another sort of a thing as a reason there.[39]

McPeck is thus his own worst enemy. In effect, he stipulates a new meaning for 'epistemology' without indicating his intention of doing so; hence, he is judged on the common understanding of the word. I do not believe he intends to offer a new meaning. I believe he thinks he means epistemology as it is commonly understood. We have more than Siegel's word that McPeck is operating outside the common understanding of epistemology.

According to the Encyclopedia of Philosophy, we find epistemology defined as:

> The epistemologist . . . is concerned not with
> whether or how we can be said to know some
> particular truth but whether we are justified
> in claiming knowledge of some whole class of
> truths, or, indeed, whether knowledge is possible
> at all. The questions which he asks are therefore
> general in a way that questions asked within
> some one branch of knowledge are not.[40] (italics
> mine)

Contrast this definition with the characterization of epistemology outlined in Section III (p. 82). McPeck specifically states epistemology "includes understanding concepts and the peculiarities of the nature of evidence, as they are understood by practitioners in the field from which they emanate."[41] (italics mine) The underlined portion says it all. As Siegel indicated, epistemology is meant to be general and trans-disciplinary. It is not

meant to be subject-specific as McPeck indicates.  Since

McPeck does not expressly indicate he is stipulating a

new meaning for 'epistemology', we must conclude he is

attempting to operate within the established conception

and this ambiguity weakens his account as a result.

(VI) The Consequences of Interlocking Concepts

Siegel could have done more than just weaken McPeck's

account.  By taking his criticisms to their logical

conclusions he could have invalidated McPeck's concept

of critical thinking.  Although he did not, I will.

Let's review what has been argued thus far.  In Chapter

Two we learned that according to McPeck there are no

generalized, trans-disciplinary skills, that critical

thinking does not comprise such skills, that critical

thinking and critical thinking skills are subject-specific

and that critical thinking is conceptually linked with

epistemology.  These points are the cornerstones of McPeck's

foundation.  All his ideas about how matters develop in

the rational/intellectual/thinking community rest on them.

The last sentence also contains an extremely important

proposition.

The overview of Chapter Three up to this point reveals

that McPeck argues for and from a network of terms.

Epistemology is connected to reasons, critical thinking,

belief, and rationality.  Rationality is related to critical

thinking and epistemology.  And finally, critical thinking

connects directly with rationality, epistemology, argument analysis, and informal logic. Thus, all the above terms, which draw their mandate from Chapter Two, are conceptually linked with each other. As I have stated thus far in this chapter, this interconnectedness can lead to the devolution of McPeck's theories, because these concepts are all based on the same misguided assumptions.

In Section IV of this chapter we saw that McPeck would have to allow, on his own terms, that informal logic exists. It simply does not happen to be critical thinking. In Part IV we also saw Siegel aptly illustrating that McPeck distorted the concept of epistemology by making the theory of epistemology into separate theories of epistemology. The word 'epistemology' functions, then, like the word 'reason' or the various fallacy labels. We use the same name to refer to disparate things; they share only the name. Epistemology turns out to be subject-specific. We could probably have reached this conclusion much sooner by noting that reasons are subject-specific and epistemology provides the best reasons for belief; hence, we may have concluded, with a certain amount of trepidation at taking this large a leap, that epistemology is subject-specific as well.

## (1) Rationality

Notwithstanding the might-have-beens, what becomes clear is that the concept of epistemology does not work

as it is supposed to do and that it takes the remaining interlocking concepts with it. To begin with, rationality follows the path laid down by epistemology, whether the two are equivalent or not, simply by sharing the same purpose. To intelligently draw on all available evidence in order to solve a problem means drawing on all the relevant evidence.

What constitutes 'relevant evidence' and where does it come from? In "Paul's Critique of <u>Critical</u> <u>Thinking</u> <u>and</u> <u>Education</u>" McPeck holds, according to Paul, that

> Since there is a large number of logical domains
> and we can be trained only in a few of them,
> it follows that we must use our own critical
> judgment and/or defer to experts when we ourselves
> are not expert. It leaves little room for the
> classical concept of the liberally educated person
> as having skills of learning that are general
> and not domain specific.[42]

Paul counters that the world is not divided into logical categories; human thought divides it up and it may be divided in an indefinite number of ways. Concepts and lines of reasoning lying clearly in one domain lay simultaneously and equally clearly in others. Critical thought is most important in our system of values and interpretative schemes. A small percentage of time is spent judging as specialists and we give broader meaning to those acts. For example, a businessman may interpret/assess schools on a business model, military personnel on a disciplinarian model, etc. Paul's prescription for rationality is to think critically about

how we 'totalize' and use our experience. "We need to pay special attention to those general skills of critical-cross-examination, for they are what enable us to maintain our autonomous judgment in the midst of experts."[43]

McPeck's theory of critical thinking does not allow us to ask multi-categorical questions that cut across disciplines. Yet what is required is a reasoned perspective from a 'global' view. Most social and world problems are dialectical, says Paul, and are settled by general canons of argument. From a logical atomist's viewpoint, where everything is placed in appropriate categories (Paul labels McPeck a logical atomist), dialectical, multi-categorical questions are anomolous; "When noticed the tendency is to try to fabricate specialized categories for them or to break them down into a summary complex of mono-categorical elements."[44]

Questions, such as the justification of the invasion of Grenada, draw upon many disciplines for answers. In this instance, Paul states that in an attempt to reach an answer the disputants explored questions of morality, interpreting international law, spheres of influence, etc. Furthermore, such questions permeate everyday life.[45]

McPeck agrees that there are problems that lie in several domains (to use Paul's terminology) and are multi-categorical; however, McPeck has a problem with how

domain-specific knowledge and understanding function to solve real problems. The nature of the problem determines which domain(s) will be required.[46] Different kinds of knowledge are necessary to appreciate the different dimensions of most problems and no single set of skills or clump of specific knowledge will resolve them.[47]

McPeck uses the issue of alcoholism to explain what he means. When we raise a question about alcoholism it is a specific question and requires a specific kind of answer, using a specific kind of knowledge. If we wish to know how widespread it is, we are seeking sociological knowledge. If we wish to know if it is right or wrong, we are seeking moral knowledge. He grants that one kind of knowledge can affect other beliefs; for instance, if alcoholism is a disease, then it is not a sin.[48] In other words, what constitutes 'relevant evidence' depends on the subject, as we might expect from the development of his conception of critical thinking. To fulfill rationality's purpose, to be rational, comes down to being rational in a subject, just as epistemology depends on subject-matter. Therefore, whether we reach this conclusion by way of the previous argument using the analogy with epistemology, rationality becomes a series of rationalities; rationality is subject-specific; the only thing rationality shares across subjects is the name.

I do not think it is outrageous to suggest that "the

intelligent use" of the evidence involves actually knowing
and understanding the subject under consideration well
enough to evaluate the evidence so that the conclusion
you reach is not overly simplistic.  The requirements for
being a critical thinker, which is an aspect of rationality,
are stringent.  To have even a minimal understanding of
a subject we must understand its often technical language
- which, to my mind, includes knowing how and when to use
it as well as knowing how to use the terms.  If the
requirements for a minimal condition of understanding are
so stringent for an aspect of rationality, then the
requirements for intelligently using evidence must.be
equally stringent.

Unhappily the conclusion that follows this line of
reasoning is not one that anyone would wish to claim.
If intelligently using evidence is as difficult in this
age lacking Renaissance men as I have made out, then,
despite McPeck's protestations to the contrary,[49] only
experts or near experts could meet this requirement.  Only
they could be described as rational because only they could
be rational in their subject.  However, they would only
be rational in their areas of expertise.  They, like the
rest of us, would not be rational most of the time since
they could only spend a fraction of their time in their
subjects.  Those of us who are merely mediocre in
everything, who only live our lives as comfortably and

satisfactorily as we can, would be not be rational at
all.Since most of the world's population is merely mediocre,
most of the world is not rational most of the time. We
would be forced to depend on experts whenever any difficulty
arose. The trouble with that is that not even experts
agree all of the time. Not being experts ourselves, how
would we choose between two, or possibly more, conflicting
viewpoints among the experts themselves. We, and they,
would become stagnant - unable to do or decide anything
at all.

We could take this one step further. McPeck tells
us that rationality involves intelligently using evidence
for the solution of some problem. He has not placed any
limits on the scope of the problem, so we could say that
experts are needed to solve problems of any degree of
difficulty. In that case, who shall we go to when we must
decide between brands of toilet paper? Perhaps a discipline
will spring up and we will have professors in bathrrom
products. Life as we know it would come to a standstill
since we would need experts in everything to function.

The above argument not only sounds absurd, it is
absurd; however, any number of absurdities follow from
construing rationality as McPeck does. Basically, we make
overall judgments about rationality. A person is judged
to be on the whole rational or on the whole not rational,
not rational in this subject and not rational in that

because he lacks relevant understanding. It even sounds ridiculous to judge a person's rationality, or lack thereof, on how much they know. Perhaps McPeck means something different for 'intelligent use of evidence'; however, his discussions of who can know enough to formulate sound beliefs and use evidence properly leads me to believe that the phrase is grounded in the acquisition and manipulation of knowledge.

Understand, I am not suggesting that McPeck agrees with the concept of rationality as I have laid it down. On the contrary, he more than likely subscribes to rationality as an overall characteristic, as I outlined in the last paragraph. What I am suggesting is that his arguments about epistemology, about subject-specificity, about rationality, and about the relationships among them do lead to the conclusion that rationality is subject-specific - with all that that entails. The absurd conclusions drawn from its subject-specific nature were taken to the nth degree, but doing so illustrated effectively how far astray McPeck's arguments can go.

## (2) Critical Thinking

The next, most obvious concept to confront is critical thinking itself, because it is an aspect of epistemology and rationality, while argument analysis and informal logic turn out to be aspects of critical thinking. Since I have established the very real linkage betwixt the terms McPeck

uses I will, for purposes of continuity, demonstrate how critical thinking is subject to the same unwelcome forces as epistemology and rationality. As with the other two concepts, critical thinking will turn out to be a label only. The concepts of critical thinking across subjects are being linked only by that name.

In truth I could illustrate the above point without reference to epistemology and rationality. I could simply examine the nature of critical thinking as McPeck has revealed it to us. However my arguments will appear more conclusive by displaying all the links in the chain. To be thorough, I will show what is going wrong with McPeck's concept both by examining and directly extrapolating on his arguments for critical thinking and by displaying how the arguments against epistemology and rationality encompass critical thinking.

First, we will examine McPeck's arguments for critical thinking. In Chapter Two where we developed those arguments, we discovered McPeck's claim that critical thinking is subject-specific. That was his most important conclusion, and it sets him apart from many other critical thinking theorists who believe critical thinking is a subject unto itself. If we stop and think about the implications of this conclusion, we realize that that means critical thinking is an aspect of various subjects. As we have seen, what counts as good reasons alters with the

subject, sometimes how one reasons alters with the subject; therefore, the nature and criteria of critical thinking differs according to the subject. Seeing this we must ask ourselves, what is critical thinking?

McPeck's answer is contained in his two definitions. We will use the first to illustrate how well they satisfy the question. According to the first definition, critical thinking is "the propensity and skill to engage in an activity with reflective skepticism."[50] As you may recall, there were problems with this definition even when the features of critical thinking were attached; namely, an inability to decide what skills to bring to bear and a lack of clarity on "reflective skepticism."

To see that McPeck's concept and definitions become nothing more than empty labels we will look at Johnson and Blair's characterization of the fallacy faulty analogy.

> 1. An analogy is offered in support of the conclusion of an argument.
> 2. The two things being compared are not similar in the respect required to support the conclusion.[51]

McPeck stresses that fallacies are so general as to be useless when used in particular situations. He stresses that what constitutes faulty analogy depends on the subject matter. Well, McPeck's definitions of critical thinking have the same flaw. They are necessarily so general to encompass cases of critical thinking in all subjects that they are useless in indicating when or how critical thinking

takes place within those subjects. To assert that critical thinking occurs when an activity is approached with reflective skepticism, when the time to do so is right, avails us nothing. We cannot tell when an activity is so broached because McPeck has given us no guidelines to make that judgment. Nor do we know what skills to bring to bear, how to judge when the time is ripe to do so, nor when we ought to suspend judgment about the norms of the subjects themselves.

Thus, McPeck's characterization of critical thinking as subject-specific has placed him in a trap. Critical thinking comes to operate as McPeck believes informal logic fallacies do. It becomes nothing more than a label describing potentially many disparate concepts that share nothing but the name. To paraphrase Harvey Siegel: critical thinking is to be replaced by a series of critical thinking concepts.[52] What McPeck has given us are general prescriptions which, to pursue my own analogy with fallacy theory, can only serve to mislead us. Since McPeck makes critical thinking an important part of the process of education, he would need to provide more than a general prescription. He ought to outline what the concept of critical thinking is and how it operates within each subject since the nature of critical thinking changes from subject to subject.

Next, taking the more torturous path, we will look at critical thinking's downfall via its connection to the

rest of the terms in the Network. As we have seen, critical

thinking is an aspect of both epistemology and rationality,

while informal logic and argument analysis also fall under

critical thinking's auspices. Since critical thinking,

epistemology, and rationality all ultimately proved to

be unworkable since they are all founded on the same

misguided premises and since all three are so closely

connected that damaging one ultimately damages all, it

is not unreasonable to suggest that those concepts that

are aspects of critical thinking and that rest on the same

faulty premises would suffer similar fates.

McPeck's use of 'epistemology' became vulnerable

because his characterization led to the conclusion that

there is no one single concept of epistemology. In effect

there are separate concepts of epistemology corresponding

to various subjects. The nature of epistemology alters

with each subject, and the only thing connecting the various

epistemologies is the name 'epistemology' itself. Due

to its connection to epistemology as well as to its reliance

on the same premises supporting epistemology and critical

thinking, rationality also divides into a series of

separate, subject-dependent rationalities. There is no

one concept of rationality. The nature of rationality

alters with each subject and the only thing connecting

the various rationalities is the name 'rationality' itself.

Critical thinking, being an aspect of the two former

concepts, is naturally subject to the same constraints.

Thus, as the nature of critical thinking alters with changes in the natures of epistemology and rationality, we are forced to conclude that there is no one single concept of critical thinking. McPeck is left once more with separate concepts of critical thinking whose sole link is the label 'critical thinking' itself.

### (3) Informal Logic and Argument Analysis

We can take this line of reasoning two steps further by showing how informal logic and argument analysis also fail because they are aspects of critical thinking - ignoring for the moment that McPeck would prefer to say that informal logic does not exist at all. As critical thinking is constrained by the same limits imposed on epistemology and rationality because it functions as an aspect of them, so too are informal logic and argument analysis constrained by the limits imposed on critical thinking. Needless to say, those operational limits initially originate from epistemology and rationality.

Thus, informal logic and argument analysis do not refer to single concepts applicable across subjects (remembering that informal logic would not be informal logic as we know it for it to exist in McPeck's universe). If critical thinking, to which they are so completely tied, cannot function as a single concept and must manifest itself differently in each subject, then its subsidiaries cannot either. The nature of informal logic and argument analysis

must alter with each subject. Therefore, there are as
many concepts of informal logic and argument analysis as
there are subjects. The only thing connecting the sundry
concepts of informal logic and argument analysis are the
names.

(4) The Demise of McPeck's Conception of Critical Thinking

McPeck's concept of critical thinking has lost much
of its force due to its interconnectedness with other
ill-defined terms in the rational firmament and due to
the flaws arising from its reliance on subject-specificity.
Moreover, when critical thinking turned out to be separate
critical thinking concepts rather than one generalized
concept, McPeck nullified his own project. He had intended
to proffer the analysis of the concept of critical thinking
that has been lacking in the critical thinking literature.
He did not intend to offer one analysis of one of
potentially many concepts of critical thinking. This stance
is evident when we realize that if the latter rather than
the former were the case, McPeck would have identified
not only which subjects the concept belonged to, but the
definitions and explanations would have been specific enough
to identify what kind of skills count as critical in each
subject, and why. As matters stand the concept offered
for our perusal is vague and, on a practical level, useless.

Practicality is not only desired but also essential
because McPeck associates it with the concept of education.

He may have said that education does not necessarily

coincide with schools,[53] which constitute the practical

aspect of education; however, when people, including McPeck,

discuss education and improvements in education they are

talking about improving the educational system.  They are

talking about schools.  They are talking about

practicalities.  McPeck is talking about practicalities.

In his alliance of critical thinking and education, he

makes it clear that the best way to create critical thinkers

is by promoting a liberal education based on an

epistemological framework.[54]  That is a practical suggestion

for inculcating critical thinking.  When he notes in the

final chapter of Critical Thinking and Education that

critical thinking transcends schools based on education

and can belong just as well in other types of schools,

such as training schools,[55] McPeck again acknowledges that

the practical side of critical thinking needs to be

addressed in his discussion.  Skill or skills,

subject-specific or not, critical thinking is meant to

be used, not just to sit there like some appealing yet

otherworldly notion with no solid foundation.  It would

be shortsighted not to recognize this fact.  Any conception

that ignores this aspect of critical thinking would be

seriously damaged.  McPeck's conception does ignore this

aspect of critical thinking and is damaged as a result.

Furthermore, from the results of my analysis of

McPeck's concept of critical thinking and its underlying

arguments, I must conclude that McPeck has shown himself
to be inconsistent and to tacitly support standard
theorists. Assuming McPeck is not only outlining what
critical thinking means but is doing so in a critical manner
(an assumption I think he would be loathe to deny), we
must then ask ourselves - to what subject does his project
belong? Critical thinking, after all, must be critical
thinking in some subject. It cannot be education, although
the concept of education and the concept of critical
thinking are related, because McPeck clearly intends his
concept of critical thinking to apply to many subjects,
not just to education. Since the project does not belong
to education, and it is meant to apply to many subjects,
then it can only apply to the subject of critical thinking.
There is nothing else.

Yet critical thinking does not exist as a subject
for McPeck. This fact puts us in a quandary. Clearly
he intends his concept to apply across subjects. Yet just
as clearly he denies that such a situation is possible.
McPeck argued informal logic into non-existence based partly
on its trans-disciplinary pretensions. Critical thinking
became, not one concept but a set of separate concepts
subsumed by various subjects, so it could not apply across
subjects nor could it be a subject unto itself as standard
theorists argue. By arguing the position that critical
thinking is subject-specific while arguing from the position
that critical thinking is a subject McPeck shows himself

to be inconsistent.

## (VII) <u>Summary</u>

This chapter has shown that McPeck's project, analyzing and establishing the concept of critical thinking, does not work. In addition to the counter-arguments offered against indivdual points in the literature come my concerns about the consequences attendant upon identifying concepts solely as subject-specific. Between the arguments McPeck employs and the language he uses, critical thinking proves to be a series of separate critical thinking concepts rather than an overriding, inter-disciplinary concept as McPeck needs it to be for it to be effective. As we have seen, this makes his account inconsistent and effectively quashes his concept of critical thinking.

Worse yet for McPeck, his employment and delineation of terms related to critical thinking, like rationality and epistemology, in order to explain critical thinking contribute to the above conclusion due to their vagueness and reliance on the same weak premises that the concept of critical thinking itself rests on. To explain critical thinking by referring to other terms we can expect that (1) there are differences between the terms, (2) McPeck knows the differences and the similarities, and (3) he clearly expresses them. Because he fails to do so, we can plausibly read connections and consequences into his arguments that he does not intend, may not see, and would

wish to avoid. This is the situation we meet with in his explication of critical thinking.

Moreover, when one term is subsumed by another, and when both terms depend on different subjects for the forms they take, the link between the two terms becomes that much closer. For example, McPeck's conception of critical thinking would not suffer so much if it were not dependent upon epistemology; and if, moreover, both concepts did not draw their mandates from the same weak arguments for subject-specificity. That being the case, when one term or concept, especially the dominant concept, proves to be contradictory, inconsistent, or weak, then the other term suffers in the same fashion. For example, when epistemology was damaged, so too was critical thinking. This situation led to a chain reaction affecting epistemology, rationality, critical thinking, reasons, informal logic, and argument analysis. Drawing out the connections between them and then illustrating how each term falls on its own and how one term leads inexorably to the downfall of another and another and another in the network constitutes serious blows to McPeck's project as a whole. As more terms collapse in on themselves the more unlikely it becomes that his basic assumptions are correct; the more unlikely it is that he will be able to refurbish or reinforce the arguments he initially offered in establishing the network. Thus I must conclude that McPeck's project, as well intentioned as it is, does not

work and will not work without a massive overhauling.

CONCLUSION

BACK TO BASICS

As a rule it is easier to destroy than to build.
After centuries of conquering and maintaining territory,
the Roman Empire fell in what amounts to a heartbeat.
The same can be said for the lifestyle in the Southern
United States.  The basis of culture, the economy, the
'aristocratic' citizens, everything that made the South
the South disappeared within the space of five years.
The American Civil War quickly leveled a system and cities
which took years to build.  A building that took months
to erect topples in hours or minutes when faced with a
wrecking ball or judiciously applied explosives.  The time
and painstaking effort expended on creating a house of
cards is all for naught when someone gives one quick puff.
The house comes tumbling down.

The same can be said for building a theory.  Enormous
time and effort go into discovering, for want of a better
term, an idea, seeking arguments in its favour and
supporting them, anticipating and circumventing possible
objections, and relating this theory to others in its field.
That is to say nothing of setting it down in full, ready
to be analyzed and criticized.  The analysis and criticism,

which in some cases amounts to the destruction, of the new theory takes qualitatively less time and less trouble. McPeck put much more into constructing his concept of critical thinking than I or anyone else did in an attempt to eradicate it. For this reason I think it is important to do more than show what is wrong with McPeck's theory, I think it is important to illustrate what is right with his theory as well. He does have several good ideas that have been largely ignored in the literature, which has largely concentrated on where it goes wrong. To do McPeck justice we should sort through the wreckage and salvage what we can of his intentions and his theory.

It is for this reason that I have called this Chapter "Back to Basics" in contrast to McPeck's concluding Chapter "Forward to Basics." McPeck had imagined that his conception of critical thinking could be used as the basis upon which the critical thinking of specific subjects could be built; hence, we would be moving forward in establishing the basics for each subject.

> I would [McPeck says] envisage courses that
> included the epistemology of a subject as an
> integral part of that subject. In a very real
> sense, approaching subjects in this way might
> be seen as moving forward to basics. It would
> be moving forward in the sense that our conception
> of what it would mean to teach a subject would
> change to include its epistemology as a
> fundamental component. And it would be teaching
> basics in the sense that there is no understanding
> more basic than that which epistemology provides.[1]

Normally when people refer to 'getting back to the basics' in schools, they mean returning to the three R's - reading,

writing, and 'rithmetic - or to some other vision of what schools, most properly, stressed in the past and which they do not stress now. McPeck's "Forward to Basics" taps into this tradition. In it he expresses his wish that students in schools are taught correctly in order to create as well rounded critical thinkers as is possible these days. A liberal education is sometimes called for by those who yearn for returning to the basics.

I am suggesting that McPeck needs to return to the basics of his conception and if, upon re-examination, he finds his basic assumptions remain worthwhile, then to begin his work anew. It remains to be seen which ideas of his are salvageable, whether they are compatible on first glance, and what the next step McPeck needs to take is.

## (I) Rebuilding the Foundation

The first thing to establish is that the core of his project is correct. What I called the ground upon which McPeck built his initial foundation remains intact; namely, there is a concept of critical thinking waiting to be revealed, and our concern is with discovering or establishing how it is manifested.

None of the four premises McPeck argues for and from are commonly accepted or sufficiently supported to be accepted. These premises were: (1) thinking is always about something in particular; (2) there is no generalized

set of skill(s) called critical thinking; (3) critical

thinking is subject-specific; and (4) critical thinking

is conceptually linked to epistemology.  In Chapter Two

we examined a few of many strong challenges directed against

them.  He needs to reassess these premises and if he still

believes they are necessary, then to try to clarify why

they are essential and why they do the job.

McPeck does better when he cites the features which

critical thinking must take account of.  They have value

and advance analyses of critical thinking.  As I stated

in  Section IV, Chapter Two, I agree with the first feature

that stresses not limiting critical thinking to the

assessment of statements.  To his credit McPeck builds

this idea into his first definition which states that

critical thinking involves "the propensity and skill to

engage in an activity with reflective skepticism"[2]  (italics

mine).  However, apart from the fact that he does not

develop non-statement critical thinking, I find some of

the activities he lists as requiring critical thinking

to be suspect.

For example, McPeck states that mountain climbing

and competitive wrestling are two activities involving

critical thinking.  Upon reflection I must disagree.  These

activities depend upon doing rather than thinking about

doing.  When climbing a mountain most of your attention

is directed at holding onto the rock, getting solid purchase

for your feet, driving in the pitons.  You are focused

very much on the moment. The same can be said for competitive wrestling. When grappling with an opponent most of your attention is directed at the physical challenge. Little, if any, time can be called reflective or skeptical, let alone reflectively skeptical. Although it may be the case that a climber or wrestler reflects on the route and fighting approach beforehand, during either event, when there actually is a problem to be solved, reflection is largely absent. When the initial strategy does not work or when they encounter minor difficulties the climber and wrestler do not have time to reflect skeptically on various alternatives, but must simply react. Thus I would argue that some activities do not require critical thinking since they are reactive or reflexive rather than reflective.

Nevertheless, McPeck's point about critical thinking involving more than assessing statements remains in force. He only needs to expand on this idea by showing how critical thinking functions in a non-statement form and by establishing, not just listing, the types of activities this concept would be used on and why.

The second, third, fourth, and fifth features also reflect what a concept of critical thinking needs to account for and for the reasons espoused in Section IV, Chapter Two. Namely, I am referring to the fact that critical thinking is voluntary and directed, a task not an achievement concept, skills admit of degrees, and that

the notion of 'correctness' is inappropriate in a concept of critical thinking.

The sixth feature, that critical thinking is equivalent to rationality, has proven to be misguided as McPeck has developed it in Critical Thinking and Education, but McPeck is to be commended for recognizing and trying to correct the problems that arise due to the opacity of related terms. He is to be commended for trying to remove the opacity even if his attempt failed. In this case, McPeck needs to develop thoroughly the differences and similarities among related terms if he wishes to link any of the concepts together to use their relationship to explain critical thinking.

The seventh feature implicitly linking creative and critical thinking should be explicitly made. Without this linkage, critical thinking suffers the same fate as logic in McPeck's discussion of the context of discovery and the context of justification. Logic, he says, belongs to the context of justification and cannot initiate hypotheses.[3] Critical thinking suffers a similar fate when divorced from creative thinking - which would be necessary for considering alternative solutions to problems. In his discussion of the contexts of discovery and justification we see, once again, an implicit alignment of creative and critical thinking when McPeck argues that the division is too exclusive and discovery (creative thinking) needs to mix with justification (critical

thinking).

Finally, McPeck is correct in his tenth feature where
he stresses that critical thinking cannot be identified
with any form of logic.  I assume he means both formal
and informal logic.  Critical thinking, if it is supposed
to be a concept unto itself, must have its own identity.
However, I cannot agree that logic is in no way related
to critical thinking.  Even McPeck admits formal logic
plays a small role in critical thinking.[4]  A small role
is not no role at all.  And although he asserted that
informal logic does not exist, he must admit that some
of its concerns are critical thinking's concerns. · For
instance, both are interested in the acceptability of
evidence offered for some position.

McPeck's two definitions, when considered alone, do
not  seem superior to or appreciably different from others
in the literature.  On the face of it, they share certain
traits.  As I stated in Section III, Chapter Two,  no one
writing in the field of critical thinking has offered any
negative commentary on the second definition.  The first
definition, while suffering from vagueness regarding
propensity and skill and needing clarification, does not
necessarily lead to the alliance of critical thinking and
subject-specificity.  Ennis also aligns critical thinking
with reflective thinking without its becoming
subject-specific.[4]  The question remains: what makes
critical thinking different from reflective thinking?

There are other good points worth mentioning in McPeck's theory. First, knowledge/information is, as McPeck pointed out, complex, and assessment requirements mainly involve understanding the information and its complex relationships. It is more important to know what P and Q mean rather than the logical relations between them. Logical relations do not decide real public issues, the acceptability, relevancy, and sufficiency of information do.

Second, coming to a reasoned conclusion, whether it be the resolution of some problem or the acceptance of one hypothesis over another, depends upon understanding the evidence to those who understand it.

Third, I concede that using criteria depends on content, whether critical thinking is seen as subject-specific or not. We must remember that critical thinking admits of degrees; hence, a person may be a more effective critical thinker in one subject than in another. That does not mean criteria cannot be inter-disciplinary.

Finally, transfer of training has not been substantiated. Studies exist supporting both points of view - that transfer of training occurs and that it does not occur. Furthermore, logical subsumption ought not to be confused with psychological transfer. The same or similar logical rules might apply from subject to subject; however, that does not mean a person can apply them equally as well from subject to subject.

## (II) McPeck's Conclusion Versus My Conclusion

McPeck concludes that critical thinking is subject-specific and that different areas/activities/subjects have different criteria. Based upon his arguments for subject-specificity, his peers' arguments against it, and my own intuitive understanding of critical thinking (intuitions being from whence critical thinking theories ultimately derive) I am forced to conclude that different subjects do, as McPeck suggests, have different criteria. But, and this is a big 'but', McPeck has gone too far in compensating for information having been ignored in the past to himself ignoring the similarities of assessment among subjects.

As things stand, with McPeck's conception we cannot identify the field or subject that McPeck's criticisms and theories belong to. Critical thinking does not stand as a subject unto itself so they do not belong to critical thinking. He was not discussing critical thinking as part of any specific subject, not even education. The criticisms I directed at his theories suffer the same fate. When I accused him of setting up straw men in his attempts to defeat informal logic, I employed an informal logic fallacy. The fallacy was drawn from a non-existent subject and was applied to an non-existent one.

Presseisen, Chambers, Ennis, and Selman have reached a conclusion that I believe is acceptable. All four

recognize the justice of McPeck's position. There are subjects that have unique criteria and must be assessed in unique ways; however, there are also criteria that cross such boundaries. Ergo, both sides are correct and have had one half of the answer all along. There are inter-field/discipline/subject and intra-field/discipline/subject skills and criteria. Nothing matches an in-depth understanding of a subject, but an understanding of basic critical thinking skills and principles helps us get through life without having to enslave ourselves to experts.

## (C) Overall Assessment

We have seen that McPeck's conception of critical thinking contains some good points, some of which have been subsumed by the standard approach. By and large, however, his conception and his analysis fail to live up to his promises and the expectations they give rise to. He promised an analysis of the concept of critical thinking in order to delineate finally what critical thinking does and does not include, yet, his arguments inexorably lead to the conclusion that there is no unary concept. This being the case, there cannot be an analysis of the type he promised. The nature of critical thinking, the kinds of things it includes and does not include, will depend on the subject being critically thought about. The four premises McPeck based his argument on were never firmly

established. (We saw some of the reasons why, but did

not concentrate on the various arguments as standard

commentators normally do.) He promised to separate the

concept of critical thinking from other, related ones,

but he did not do so adequately. The concepts became so

closely intertwined that they suffered from the same malady

afflicting critical thinking. Thus, I conclude that

McPeck's analysis suffers from two maladies - inconsistency

and imprecision.

The family business so lovingly established by Ennis

and inherited by Paul survived the prodigal son's

competiton. McPeck's 'family' utilized some of his better

ideas in their own business and reinforced its share of

the market. McPeck should be proud that he has affected

the standard approach to such a degree; although, I do

not believe he would be satisfied. If he wishes to become

a long-term force, he will have to identify and utilize

his strong points to begin anew.

NOTES

## Chapter One

[1]Micheal Scriven, Reasoning (McGraw-Hill: New York, 1976), xv.

[2]Amongst the theorists who link informal logic and critical thinking are: Robert Ennis, "Rational Thinking and Educational Practice," Philosophy and Education 80$^{th}$ Yearbook of the National Society for the Study of Education, ed. Jonas Soltis (Chicago: The National Society for the Study of Education, 1981): 146; J. Anthony Blair and Ralph H. Johnson, "Introduction," in Informal Logic: The First International Symposium in Windsor, Ontario June 26-28 1978, ed. J. Anthony Blair and Ralph H. Johnson (Inverness, CA: Edgepress, 1980), x; Mark Weinstein, "Musclebuilding for Strength in Critical Thinking," Informal Logic Newsletter 5, no. 1 (December 1982): 17.

[3]The proliferation of articles and journals devoted to critical thinking and informal logic in the past thirty years; especially after thousands of years of formal logic largely comprising the sole explanation for the explication and analysis of arguments, is a good indication of the former two concepts achieving a prominent, if not dominant, place in argument analysis. We find evidence of theorists' dissatisfaction with formal logic as a tool for evaluating arguments in J. Anthony Blair and Ralph H. Johnson, "Introduction," Informal Logic: The First International Symposium in Windsor, Ontario June 26-28 1978, ed. J. Anthony Blair and Ralph H. Johnson (Inverness, CA: Edgepress, 1980),x, amongst others.

[4]John McPeck, "Critical Thinking and the 'Trivial Pursuit' Theory of Knowledge," Teaching Philosophy 8, no. 4 (October 1985): 295.

[5]Robert Ennis, "A Concept of Critical Thinking: A Proposed Basis for Research in Teaching and Evaluation of Critical Thinking Ability," Psychological Concepts in Education (Chicago: Rand McNally and Co., 1967): 114-148.

[6]Richard Paul, "Teaching Critical Thinking in the 'Strong' Sense: A Focus on Self-Deception, World Views, and a Dialectical Mode of Analysis," Informal Logic Newsletter 4,

no. 2 (May 1982): 3.

[7]John McPeck, "Stalking Beasts, but Swatting Flies: The Teaching of Critical Thinking," Canadian Journal of Philosophy 9, no. 1 (Winter 1984): 41.

[8]Perry Weddle, review of Critical Thinking and Education, by John E. McPeck, In Informal Logic 6, no. 2 (July 1984): 23.

## Chapter Two

[1]John McPeck, Critical Thinking and Education (New York: St. Martin's Press, 1981), 2.

[2]Ibid.

[3]Edward D'Angelo, The Teaching of Critical Thinking. (Amsterdam: B.R. Gruner N.V., 1971).

[4]McPeck, Critical Thinking and Education, 4.

[5]Ibid.

[6]John McPeck, "Paul's Critique of Critical Thinking and Education," Informal Logic 7, no. 1 (Winter 1985): 49.

[7]McPeck, Critical Thinking and Education, 5.

[8]Ibid., 5.
In Richard Miller, "Toward an Empirical Definition of Thinking Skills," Informal Logic 8, no. 3 (Fall 1986): 113, he notes that McPeck modifies his stance in "The Evaluation of Critical Thinking Programs: Dangers and Dogmas" from trying to prove the negative existence claim that general reasoning skills do not exist to defying opponents to prove that critical thinking skills do exist.

[9]McPeck, "Trivial Pursuit," 296.

[10]Leo Groarke and Christopher Tindale, "Critical Thinking: How to Teach Good Reasoning," Teaching Philosophy 9, no. 4 (December 1986): 306.

[11]Harvey Siegel, "McPeck, Informal Logic, and the Nature of Critical Thinking," in Philosophy of Education 41st Proceedings in New Orleans, Louisiana April 12-15 1985, ed. David Nyberg (Normal, Ill.: Philosophy of Education Society and Illinois State University, 1986), 63.

[12]John McPeck, "Response to H. Siegel," in Philosophy of Education 41st Proceedings in New Orleans, Louisiana April

12-15 1985, ed. David Nyberg (Normal Ill.: Philosophy of Education Society and Illinois State University, 1986), 73.

[13]Harvey Siegel, Educating Reason: Rationality, Critical Thinking, and Education (New York: Routledge, 1985), 21.

[14]Mark Selman, "Another Way of Talking About Critical Thinking," in Philosophy of Education 43rd Proceedings in Cambridge, Massachusetts April 3-6 1987, ed. Barbara Arnstine and Donald Arnstine (Normal, Ill.: Philosophy of Education Society and Illinois State University, 1988), 171.

[15]Robert Ennis, "Logic and Critical Thinking," in Philosophy of Education 37th Proceedings in Houston, Texas April 26-29 1981, ed. Daniel R. DeNicola (Normal, Ill.: Philosophy of Education Society and Illinois State University, 1982), 231.

[16]McPeck, "Stalking Beasts," 33.

[17]McPeck, Critical Thinking and Education, 32.

[18]Ibid., 14.

[19]McPeck, "Trivial Pursuit," 296.

[20]See Stephen M. Cormier and Joseph D. Hagman, eds., Transfer of Learning: Contemporary Research and Applications (San Diego: Academic Press, Inc. and Harcourt Brace Jovanovich, Publishers, 1987); George M. Haslerud, Transfer, Memory, and Creativity: After-Learning as Perceptual Process (Minneapolis: University of Minnesota Press, 1972).

[21]McPeck, "Stalking Beasts," 40.

[22]John McPeck, "The Evaluation of Critical Thinking Programs: Dangers and Dogmas," Informal Logic 6, no. 2 (July 1984): 10.

[23]McPeck, Critical Thinking and Education, 5.

[24]Ibid., 158.

[25]Stephen Toulmin, The Uses of Argument (Great Britain: Cambridge University Press, 1964), 38.

[26]Trudy Govier, "Review: Critical Thinking and Education," Dialogue 22, no. 1 (March 1983): 172.

[27]Govier, "Review," 171-172.

[28]McPeck, Critical Thinking and Education, 75.

[29]Ibid.

[30]McPeck, "Paul's Critique," 45-46.

[31]McPeck, Critical Thinking and Education, 24.

[32]Ibid., 22.

[33]Ibid., 28.

[34]Ibid., 26.

[35]Ibid.

[36]Ibid., 23.

[37]Govier, "Review," 172.

[38]McPeck, Critical Thinking and Education, 23.

[39]Ibid.

[40]Ibid., 24.

[41]Ibid.

[42]Ibid., 34.

[43]Ibid.

[44]Ibid., 36.

[45]Ibid., 37.

[46]Ibid., 127.

[47]Ibid.

[48]Ibid., 131.

[49]Ibid., 7.

[50]Robert Ennis, "Testing Teachers' Competence, Including Their Critical Thinking Ability," in Philosophy of Education 43rd Proceedings in Cambridge, Massachusetts April 3-6 1987, ed. Barbara Arnstine and Donald Arnstine (Normal, Ill.: Philosophy of Education Society and Illinois State University, 1988), 415.

[51]McPeck, Critical Thinking and Education, 11.

[52]Ibid., 17.

[53]Ibid., 6.

[54]Ibid., 7.

[55]Harvey Siegel, Educating Reason, 22.

[56]Ibid., 23.

[57]McPeck, Critical Thinking and Education, 11.

[58]Ibid., 7.

[59]Frederick Oscanyan, "Critical Thinking in California: Response to Brooke Moore," Teaching Philosophy 7, no. 3 (July 1984): 245.

[60]Weddle, "McPeck's Critical Thinking," 25.

[61]Ibid.

[62]McPeck, Critical Thinking and Education, 6.

[63]Ibid., 9.

[64]Siegel, "Nature of Critical Thinking," 64.

[65]Ibid.

[66]Ibid., 65.

[67]Ibid.

[68]Ennis, "A Concept of Critical Thinking," 115.

[69]McPeck, Critical Thinking and Education, 153.

[70]Ibid., 3.

[71]Ibid., 6.

[72]Ibid., 23.

[73]Ibid.

[74]McPeck, Critical Thinking and Education, 3.

[75]Ibid., 4.

[76]Ibid., 23.

[77]Ibid.

[78]Ibid.

[79]Ibid.

[80]Ibid., 43.

[81]Ibid., 44.

[82]Ibid., 11.
    Query: is reasoning then equivalent to rationality?
This question is never addressed but is, nevertheless, an
intriguing consideration.

[83]Ibid.

[84]Ibid.

[85]Ibid.

[86]Ralph H. Johnson, "The Problem of Defining Critical
Thinking," The Generalizability of Critical Thinking: Multiple
Perspectives on an Educational Ideal, ed. Stephen R. Norris
(New York and London: Teachers College Press, 1992), 41.

[87]McPeck, Critical Thinking and Education, 9.

[88]Ibid., 11.

[89]Ibid., 4.

[90]Ibid.

[91]Ibid., 6.

[92]McPeck, Critical Thinking and Education, 15.

[93]Micheal Scriven, Reasoning (New York: McGraw-Hill
Ryerson Ltd., 1976), 36.

[94]Robert Ennis, "Rational Thinking and Educational
Practice," Philosophy of Education 80th Yearbook of the
National Society for the Study of Education 1981, ed. Jonas
F. Soltis (Chicago, Ill.: The National Society for the Study
of Education, 1981): 145-146.

[95]McPeck, Critical Thinking and Education, 17.

[96]McPeck, "Trivial Pursuit," 303.

[97]McPeck, "Dangers and Dogmas," 9.

[98]Jonathon Adler, "Critical Thinking, A Deflated Defense:
A Critical Study of John E. McPeck's Teaching Critical
Thinking: Dialogue and Dialectic," Informal Logic 13, no.
2 (Spring 1991): 67.

[99] McPeck, _Critical Thinking and Education_, 55.

[100] McPeck, _Critical Thinking and Education_, 140.

[101] Ibid., 141.

[102] McPeck, _Critical Thinking and Education_, 66.

[103] Ibid., 67.

[104] Ibid., 75.

[105] Ibid.


## Chapter Three

[1] Ibid., 155.

[2] Ibid., 156.

[3] McPeck, _Critical Thinking and Education_, 2.

[4] McPeck himself uses many of these terms in his arguments as if they mean the same thing. In _Critical Thinking and Education_ he talks about 'subjects' and 'subject areas'; in "Critical Thinking Without Logic: Restoring Dignity to Information" he uses both 'domain' and 'field'; in "Paul's Critique of _Critical Thinking and Education_" he uses the same language Paul does to facilitate his reply; namely, 'domain'. Robert Ennis attempts to clarify the differences between the terms in Robert Ennis, "Critical Thinking and Subject-Specificity: Clarification and Needed Research."

[5] McPeck, _Critical Thinking and Education_, 161.

[6] Robert Ennis, "Critical Thinking and Subject Specificity: Clarification and Needed Research," _Educational Researcher_ 18, no. 3 (April 1989): 5.

[7] McPeck, _Critical Thinking and Education_, 161.

[8] Ibid., 153.

[9] Ibid., 72.

[10] Ennis, "Logic and Critical Thinking," 231.

[11] McPeck, _Critical Thinking and Education_, 155.

[12] Ralph H. Johnson and J. Anthony Blair," _Informal Logic: the First International Symposium in Windsor, Ontario June 26-28 1978_, eds. J. Anthony Blair and Ralph H. Johnson

(Inverness, CA: Edgepress, 1980) quoted in John McPeck, _Critical Thinking and Education_ (New York: St. Martin's Press, 1981), 74.

[13]McPeck, _Critical Thinking and Education_, 74.

[14]Ibid., 72.

[15]Ibid.

[16]Ibid.

[17]Ibid., 23.

[18]Ibid., 11.

[19]Ibid.

[20]See pages 53-55 in Chapter Two of this thesis.

[21]McPeck, "Stalking Beasts," 28.

[22]McPeck, _Critical Thinking and Education_, 91.

[23]McPeck, "Stalking Beasts," 30.

[24]McPeck, _Critical Thinking and Education_, 86.

[25]McPeck, "Stalking Beasts," 31.

[26]Ibid.

[27]John McPeck, "What is Learned in Informal Logic Courses?," _Teaching Philosophy_ 14, no. 1 (March 1991): 7.

[28]McPeck, "Stalking Beasts," 36.

[29]McPeck, _Critical Thinking and Education_, 69.

[30]Ibid.

[31]Ibid., 71.

[32]Ibid., 68.

[33]Ralph H. Johnson and J. Anthony Blair, "The Current State of Informal Logic," _Informal Logic_ 9, no.'s 2 and 3 (Spring and Fall 1987): 150.

[34]McPeck, "Stalking Beasts," 28.

[35]Harvey Siegel, "Educating Reason: Critical Thinking, Informal Logic, and the Philosophy of Education: Part

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[36]Siegel, <u>Educating Reason</u>, 36.

[37]Siegel, "Educating Reason," 76.

[38]Siegel, <u>Educating Reason</u>, 37.

[39]Ibid.

[40]<u>Encyclopedia of Philosophy</u>, 1967 ed. s.v. "Epistemology, History of."

[41]McPeck, <u>Critical Thinking and Education</u>, 24.

[42]Richard Paul, "McPeck's Mistakes," <u>Informal Logic</u> 7, no. 1 (Winter 1985): 40.

[43]Ibid., 41.

[44]Ibid., 38.

[45]Ibid., 37-38.

[46]McPeck, "Paul's Critique," 51.

[47]Ibid.

[48]Ibid., 51.

[49]Ibid., 48.

[50]McPeck, <u>Critical Thinking and Education</u>, 7.

[51]Ralph H. Johnson and J. Anthony Blair, <u>Logical Self-Defense</u> (Toronto: McGraw-Hill Ryerson Ltd., 1983), 100.

[52]'Critical thinking' replaces 'epistemology' in the original quotation, i.e. "epistemology is to be replaced by a series of epistemologies," which is taken from Harvey Siegel, <u>Educating Reason: Rationality, Critical Thinking, and Education</u> (New York: Routledge, 1988), 36.

[53]McPeck, <u>Critical Thinking and Education</u>, 152.

[54]McPeck, "Stalking Beasts," 41.

[55]McPeck, <u>Critical Thinking and Education</u>, 153.

Conclusion

[1]Ibid., 157.

[2]Ibid., 7.

[3]Ibid., 15.

[4]Ibid., 8.

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