

University of Windsor

## Scholarship at UWindsor

---

OSSA Conference Archive

OSSA 11

---

May 18th, 9:00 AM - May 21st, 5:00 PM

### Definition: A Three-Dimensional Analysis with Bearing on Key Concepts

Robert H. Ennis PhD

*University of Illinois at Urbana-Champaign*

Follow this and additional works at: <https://scholar.uwindsor.ca/ossaarchive>



Part of the [Philosophy Commons](#)

---

Ennis, Robert H. PhD, "Definition: A Three-Dimensional Analysis with Bearing on Key Concepts" (2016). *OSSA Conference Archive*. 105.

<https://scholar.uwindsor.ca/ossaarchive/OSSA11/papersandcommentaries/105>

This Paper is brought to you for free and open access by the Conferences and Conference Proceedings at Scholarship at UWindsor. It has been accepted for inclusion in OSSA Conference Archive by an authorized conference organizer of Scholarship at UWindsor. For more information, please contact [scholarship@uwindsor.ca](mailto:scholarship@uwindsor.ca).

# Definition: A Three-Dimensional Analysis with Bearing on Key Concepts

ROBERT H. ENNIS

*Emeritus Professor of Philosophy of Education*  
*University of Illinois*  
*3904 Trentwood Place, Sarasota, FL 34243*  
*USA*  
[RHEnnis@illinois.edu](mailto:RHEnnis@illinois.edu)

**Abstract:** This essay presents a three-dimensional analysis of definition (form, stance, and content) with application to making and evaluating definitions; teaching how to define; avoiding equivocation with ‘argument’ and ‘bias’; and, using the concept-conception distinction, avoiding being deterred by the many definitions of ‘critical thinking’, and seeing the usefulness of objectivity in everyday arguments in spite of existing conflict and confusion about aspects of objectivity.

**Keywords:** definition, definition form, definition stance, definition content, concept, conception, equivocation, argument, bias, objectivity, critical thinking

## 1. Introduction

In this essay I explore a three-dimensional analysis of definition and its application to some issues regarding “critical thinking”, “argument”, “bias”, and “objectivity”.

Themes are 1) that every definition has three dimensions: form, stance, and content; so that, for example, it is incorrect to think that a definition cannot be both a stipulated definition (a stance) and an equivalent-expressions definition (a form); 2) that a definer can concurrently take more than one stance toward the same definition; 3) that equivocation is a lurking background danger for which we must be on guard when a term (like “argument” and “bias”) is used in more than one way; 4) that the abundance of definitions of “critical thinking” is not really a problem; and 5) that there is a widely-accepted reported definition of “objectivity” useful in everyday argumentation.

The presented analysis of definition is an outgrowth of my two-dimensional analysis (1996), which in turn is an outgrowth 1) of Scheffler’s detailed insightful discussion of definitional stance (1960, pp. 11-35), as well as 2) of standard definition lore (e.g., Copi 1953, pp. 84-122). The content dimension is a newly-added feature, as is using the *concept/conception* distinction to deal with definitional issues, as will be seen.

## 2. Common forms of definition (1-6) and meaning conveyors (7 and 8)

Some common forms of definition are classification, equivalent-expression, range, synonym, extended-synonym, and operational definition. Two auxiliary forms, giving an example/non-example/borderline case, and using a term in a situation, are aids to conveying meaning in some situations, but are not strictly speaking forms of definitions because they do not try to give the full meaning of a term. They are non-definitional forms, often very helpful, of attempts to convey a crucial aspect of a meaning. I shall call them “auxiliary forms of definitions” (Note: a stipulated definition).

## 2.1. Classification definition form (genus-differentia)

Definitions of the classification form consist of a general class and a feature or features that distinguish the members of the class being defined from other members of the general class. Note: In order to facilitate communication and familiarity, I stipulate that “classification definition” shall mean what in definition lore is called “genus-differentia definition”. (Note again my use of the definitional stance, stipulating.)

Here are two simple definitions of the classification form, which together provide a simplified reported distinction between two senses of the word “argument”. For the sake of simplicity, I am neglecting definitions involving hostility:

Definition A1: *Arguments are attempts to justify a position.*

Definition A2: *Arguments are attempts to persuade someone to accept a position.*

The general class in each case is “attempts”. The distinguishing features in the first case are “to justify” and “position”, and in the second case “to persuade” and “accept a position”.

Classification definition requires that the term being defined be a noun. If some other part of speech, for example, “argue”, is to be defined using the classification form, perhaps because classification definition is a familiar form to the definer, it often helps to convert it to a noun, define it as a noun, and then infer what the original word means. If we can infer the meaning of the corresponding two senses of “argue” from Definitions A1 and A2, then the two examples of classification definition work indirectly for two senses of “argue”. But in this case, other forms, especially the equivalent-expression form, might work as well or better.

The key difference between the two meanings is essentially the difference between justification and persuasion. There are a number of possible refinements but they are unnecessary for the present.

Because each of these two definitions is intended to identify a somewhat-different concept of argument, there is danger of equivocation. Philosophers, most of whom are accustomed to the A1 sense of “argument”, might be misled by, for example, announcements using the label “Argumentation” to refer to a course teaching the evaluating of arguments in the A2 sense and thus concerned with rhetoric and debate as well as critical thinking. Such courses would at least apparently leave less time available for critical thinking than would a straight critical thinking course. Hence someone who is aware of how most philosophers use the term, but who uses the word “Argumentation” in the spirit of the A2 sense in a proposal that philosophers will face, should, in order to avoid equivocation, provide a statement of the assumed meaning of “Argument”.

## 2.2. Equivalent-expression definition

Equivalent-expression definition (called “contextual definition” by Hempel (1952, p. 5)) is a very convenient form, because it does not require a general class, and so does not require that the term being defined be a noun. Only for nouns can we find a general class, and even for some nouns, it is difficult to provide a general class that is informative.

An equivalent-expression definition embeds the term to be defined in a larger expression and equates that larger expression with another expression, thus avoiding the requirement that

the term being defined be a noun. It does require an inference back to the exact meaning of the term but that is usually easy to do. Here is an equivalent-expression definition of “bias”:

*To say that a person is biased is to say that the person is letting his or her prejudices influence his or her judgment.*

I found this definition easy to formulate, easier to formulate than a classification definition of “bias”. Furthermore, even though no equivalent for the term “bias” is given by this equivalent-expression definition of the adjective “biased”, it leaves no doubt about what is meant by the term “bias”. However, there is danger of something akin to equivocation in a use of the term that I have sometimes encountered:

“Bias” is ordinarily a pejorative term. But I have seen speakers disarm audiences by commencing with the statement, “My bias is my assumption that X”, where “X” is, for example, the proposition that computers can grade critical thinking essay tests validly. In such a case the speaker has transformed the word “bias” into a non-pejorative term because the speaker applied it to him-or-herself. People seeking agreement with the conclusion of their argument do not admit that they are letting their prejudices influence them. It would destroy their (A2) argument. The speaker has taken the sting out of the term by treating it as a non-pejorative term, and made it unlikely for someone to accuse him or her of being biased because the speaker has already admitted it. This is akin to equivocation. The speaker is creating and exploiting an equivocation by redefining the term “bias”, thus avoiding a future charge of bias (in its everyday sense) against him or her.

### **2.3. Range definition**

Range definition, named by Max Black (1954), is somewhat like classification definition in form because it specifies a general class and distinguishes the referents of the term being defined from other members of the class, but here the term being defined has somewhat vague boundaries, which Black likened to the vague boundaries of a mountain range. The following range definition of “scientific method” exhibits this vagueness:

*Scientific method is a method of investigation characteristically involving a substantial number, but rarely all, of the following characteristics: observation, generalization, experimentation, measurement, calculation, use of instruments, formulating and testing hypotheses that get support from their being able to explain the facts and their competitors’ being inconsistent with the facts, and being more or less tentative when concluding.*

The general class is “method of investigation”. The vagueness comes from the terms, “characteristically”, “substantial”, “rarely”, and “more or less”.

### **2.4. Synonym definition**

One advantage of synonym definition is its brevity. Here is an example:

*“Biased” means prejudiced.*

I do not claim that this is the best way to define this term in all circumstances. But its convenience makes it appropriate in some circumstances.

## 2.5. Extended-synonym definition

Often it is convenient to approach the synonym form but have more than one word in the defining part in order to better conform to usage, as in this example of a definition of “objective” from *Dictionary.com* (2016):

*“Objective” means “not influenced by personal feelings, interpretations, or prejudice; based on facts; unbiased.”*

Since it is offered by a dictionary as a definition of this term, this extended-synonym definition of “objective” is a reported definition (a stance soon to be discussed), and when converted into a classification definition using the general class term, “quality”, becomes what I believe to be a true reported definition of one of the terms of concern in this conference, “Objectivity”:

*Objectivity is the quality of not being influenced by personal feelings, interpretations, or prejudice; based on facts; unbiased.*

Further consideration of this term appears later. It seems like such an appealing idea.

## 2.6. Operational definition

Development of operational definitions is often attributed to Percy Bridgman (1927) working in theoretical physics, where often the meaning of a term was and is heavily dependent on the instrument used to measure the quality to which the term refers. Operational definitions exhibit this dependence. The operation is the use of the measuring instrument to produce an observation (a reading resulting from the operation).

Strict operational definition was adopted by the reductionist, behaviorist, logical-positivist tradition of the time, which *equated* the meaning of a theoretical concept (for example, IQ) with the use of a particular measuring instrument (such as the *Wechsler Intelligence Scale for Children*) and the resulting score (together an operation/observation pair). I feel that the strict rigidity of this approach to operational definitions needs to be loosened (as has been done in the example below) to handle exceptions, variations, and unexpected developments, and leave room for human judgment in the situation. This loosening is in conflict with the reductionist, behaviorist, logical-positivist spirit that supported its version of operationism.

Operational definitions can be useful in cases where test scores are important and meaningful indicators of the things being measured. If the definition-maker feels that a test is a good measure of, for example, critical thinking, this might be loosely expressed in a loose operational definition. For example:

*If someone is given the Cornell Critical Thinking Test, Level Z, under standard conditions, then, if and only if that person gets a score of X, that person has probably mastered critical thinking to the degree of about X.*

Note that I have introduced a degree of vagueness with “probably”, “about”, and “standard conditions” (which unavoidably includes conditions that cannot all be precisely specified). This requires human judgment in the situation. The definition makes a loose connection in meaning between critical thinking and the test/observation pair, thus loosely defining “critical thinking”. To see a number of possible variations of an operational definition, see Ennis (1964).

Some people have abandoned the original spirit of operational definition (which claims a connection between an operation/observation and the meaning of a term), and just think of operational definitions as examples. I have avoided that change because I think that the indicated connection (between the meaning of a term and an operation/observation pair) is often helpful. However, conveying meaning by example is also a useful technique -- to be considered next.

## **2.7. Example/non-example/borderline case used to convey meaning**

Strictly speaking, examples, non-examples, and borderline cases are not definitions, but they can be very informative conveyors of meaning in some situations. Non-examples and borderline cases can sometimes be especially instructive because they indicate limits. In some situations they can convey meaning sufficiently for the situation. In the following examples, the terms whose meanings are being conveyed are “general critical thinking” and “subject-specific critical thinking”.

*Judging the credibility of a source is an example of a general critical thinking ability, because it is used in all fields. Doing, and judging the bearing and significance of the results from, analysis of covariance is a non-example of general critical thinking ability because this ability is not used in all, or even most, fields. It is, however, an example of a subject-specific critical thinking ability. Judging the real significance of a case of statistical significance is a borderline case, borderline between being a general critical thinking ability and a subject-specific critical thinking ability. It is general in that it is useful to everyone – in their personal and civic roles, and subject –specific in that it deals with statistical significance, a statistical concept not used in many fields. Assessing inference to best explanation is a non-example of subject-specific critical thinking ability, because, even though inference to best explanation is heavily used in the sciences, it is also extensively used in almost all other fields and in our personal, civic, and vocational lives.*

These example/non-example/borderline cases are very useful in my stipulating a distinction between general critical thinking abilities and subject-specific critical thinking abilities.

In my work dealing with critical thinking across the curriculum (Ennis, in process) I introduced this concept of subject-specific critical thinking and distinguished it from general critical thinking (an introduction that exemplifies the positional stance). The above examples, non-examples, and borderline case are helpful in clarifying this position.

However, because the notion of a subject-specific critical thinking ability is not used in the balance of this essay, for economy of words, henceforth I shall mean “general critical thinking” whenever I mention “critical thinking” (another stipulated definition – a temporary one this time).

## **2.8. Using the term in a sentence to convey meaning**

Here is an example of a helpful meaning-conveying use of the term “objective” in a sentence, provided by *Cambridge Dictionaries Online* (2016):

*I can't really be objective when I'm judging my daughter's work.*

This example employs the prohibition against being influenced by personal feelings, which appears in the previously-presented extended-synonym form of definition of “objectivity”.

## **3. Stance**

Stance, the second dimension of definition, is what you intend to be doing with the definition. There are three basic types of stance: stipulating a meaning, reporting a meaning, and taking a position, though there are overlaps and borderline cases. Scheffler has a very sensitive discussion of these three stances (1960, pp. 11-35) showing, among other things, that combinations of stances often occur. He used the term “programmatically” to express what I mean by “positional”.

### **3.1. Stipulating a meaning: Stipulated definition**

To stipulate a meaning is to deem that this meaning is what the term shall mean in a given type of situation. Doing so is an arbitrary action, but subject to some limitations. For example, such stipulations should be convenient and helpful in a particular situation. Avoiding, or diminishing, the risk of equivocation is also important.

When I introduced classification definition in Section 2.1, for the sake of communication ease and convenience, I stipulated that “classification” was to mean what “genus-differentia” means in definition lore. The labeling was just a matter of ease of communication, though the actual form (classification definition), no matter how labeled, is important.

### **3.2. Reporting a meaning: Reported definition**

I have *reported* that Definition A1 indicates what philosophers generally mean by “argument” (the justification meaning of “argument”). So Definition A1 is a reported classification definition. It is a report of philosophers’ usage. Reporting a standard meaning is a very common stance. It is what dictionaries generally do. But we could also report a meaning that is not standard, as in “By “bad”, he meant “good””, which is still a report and in some situations a true one. Reported definitions can be true or false. Stipulated definitions, as stipulations, do not have that capacity.

### **3.3. Taking a position: Positional definition**

Some definitions express a position on an issue or question. Suppose a state department of education proposes a definition of “segregated” that specifies that a percentage greater than 80% of a school’s population’s being of a given minority race means that the school is segregated. Assuming that segregated schools are illegal, the definition is then a positional definition. By

implication it expresses the position that a school with more than 80% of its students of a given minority race is in violation of the law. It is a definition that takes a position on an issue.

In 2006, the International Astronomical Union (IAU) reached a decision about Pluto that was implied by the following positional classification definition of “planet” (International Astronomical Union, 2006):

*Planet: A celestial body that (a) is in orbit around the Sun, (b) has sufficient mass for its self-gravity to overcome rigid body forces so that it assumes a hydrostatic equilibrium (nearly round) shape, and (c) has cleared the neighbourhood around its orbit.*

According to this definition, Pluto is not a planet, because it does not meet criterion (c). There is a nearby large mass called Eris. The positional definition is part of astronomical theory, which is what helps justify it. This is a common situation: a definition is advocated by a scientific community because the definition is part of a larger scientific body of theory/knowledge which is being advocated.

But there is interesting controversy. Former NASA scientist Phil Metzger provided conflicting reported usage with a contrasting position: “We are free to call it a planet right now. The planetary science community has never stopped calling bodies like Pluto “planets”” (Wiener-Bronner, 2015). This situation should remind us that positional definitions are often subjected to challenge.

A definition of “atom” as the smallest unit of an element that is still identifiable as that element is positional. Its defense is the defense for the theory in which it plays a role. It is part of the total scientific theory being advanced.

A definition of “marriage” that requires that it be a union of a man and a woman is a positional definition. Its defense as a positional definition lies in a set of values concerning people and sexual orientation and in statements and decisions by some authorities. Some other positional definitions of marriage hold a conflicting position.

A definition can be both positional and reported. For example, I take the position that what fits my definition of “critical thinking” (appearing in Table 1 later) is a good thing and should be promoted in our educational system, making it positional. It is reported because I am also claiming that it provides a true report of the mainstream meaning of “critical thinking” (one of a number of true reports of the meaning, I shall later urge).

#### **4. Content**

A third dimension of definition is the actual content of the definition, that is, the words that are used and what they mean. The content dimension has long been an obvious dimension, though not so claimed. There is not much to say here except to note the obvious fact that the words are very important. It is the meanings of a number of combinations of words offered as definitions of “critical thinking” that I shall soon be judging to be essentially the same.



## 5. Possible problems with “critical thinking” and “objectivity”

With “critical thinking”: There appears to be a variety of definitions of “critical thinking” provided by theorists in the field of critical thinking, making some people wonder whether the field is in chaos. I shall urge that it is not a field in chaos.

With “objectivity”: There is obviously considerable agreement among standard sources, that is dictionaries, about the meaning of “objectivity”, but there seems to be chaos among theorists. I hold that there is chaos among theorists, but that for everyday argumentation, objectivity is a valid criterion.

### 5.1. Critical thinking

It is daunting for someone who is becoming acquainted with the field of critical thinking to find the assortment of definitions provided by long-time participants in the field. It might seem from this assortment of definitions that the field of critical thinking is in chaos. But I do not think it is. What seems more reasonable to me is that the set of definitions in Table 1 below are different descriptions of the same *concept*, as used by philosophically-oriented people in the field – and in the media – which I hold is the “mainstream” concept of *critical thinking*. I shall also hold that the differences among *conceptions* of critical thinking (to be discussed soon) are not a serious problem.

**Table 1. Fourteen Definitions of the Mainstream Concept of Critical Thinking**

These are definitions with which over the years I have become familiar while pursuing my interests in critical thinking.

- 1) “Active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends” (Dewey, 1933, p. 9 (first edition 1910)).
- 2) “The ability to think critically ...involves three things: (1) an attitude of being disposed to consider in a thoughtful way the problems and subjects that come within the range of one's experiences, (2) knowledge of the methods of logical inquiry and reasoning, and (3) some skill in applying those methods (Glaser 1941).
- 3) “Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action” (Scriven and Paul 1987).
- 4) “Critical thinking is reasonable reflective thinking that is focused on deciding what to believe or do” (Ennis 1987a; 1987b; 1991; 2011, 2015).
- 5) “A critical thinker is one who is appropriately moved by reasons” (Siegel 1988, p. 32).
- 6) “Skillful, responsible thinking that is conducive to good judgment because it is sensitive to context, relies on criteria, and is self-correcting” (Lipman 1988).
- 7) “Purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual,

- methodological, criteriological, or contextual considerations upon which that judgment is based” (Facione 1990, Table 1).
- 8) “Critical thinking is skilled, active interpretation and evaluation of observations, communications, information, and argumentation as a guide to thought and action” (Fisher and Scriven 1997, p. 20)<sup>1</sup>.
  - 9) “The practice of identifying, having, and giving good reasons for one's beliefs, values, and actions, given one's goals of truth and avoidance of error” (Possin, 2002).
  - 10) “Thinking that attempts to arrive at a judgment only after honestly evaluating alternatives with respect to available evidence and arguments” (Hatcher and Spencer, 2006, p. 1).
  - 11) “The careful examination of an issue in order to reach a reasoned judgment” (Bailin and Battersby, 2010).
  - 12) “The careful, deliberate determination of whether we should accept, reject, or suspend judgment about a claim, and the degree of confidence with which we accept or reject it” (Moore and Parker, 2014).
  - 13) “The articulated judgment of an intellectual product arrived at on the basis of plus-minus considerations of the product in terms of appropriate standards (or criteria)” (Johnson, 2014).
  - 14) “[Reasonable] inquiry and argument” (Kuhn, 2015, p. 47).
- 

Non-academic internet-dictionary definitions of ‘critical thinking’, which I assume have captured current use of the term in the media, also express the concept of critical thinking. See Table 2.

**Table 2. Current Definitions of “Critical Thinking” on the Internet**

- 1) “Disciplined thinking that is clear, rational, open-minded, and informed by evidence” (Dictionary.com, 2016)
  - 2) “The objective analysis and evaluation of an issue in order to form a judgment” (Oxforddictionaries.com, 2016)
  - 3) “A mental process of reviewing clear, rational thoughts based on evidence to reach an answer or a conclusion” (Yourdictionary.com, 2016)
- 

**5.2. The mainstream concept of ‘critical thinking’**

Though the words used are different and the amount of detail varies from one definition to another in Tables 1 and 2, they strike me as different descriptions of the same concept. They seem to be just different ways of cutting the same conceptual pie. Another reason for my belief that the definitions are basically the same is that I do not see the authors of these different wordings disagreeing strongly among themselves about the wording. Another is that I could have

---

<sup>1</sup> On page 21 Fisher and Scriven repeat this definition without the phrase, “as a guide to thought and action”, and defend the omission with the rhetorical question, “What else could it guide?” To this my reply is that it could guide only belief or thought, though not action, so I include the phrase.

based my detailed conception (which I call the “Alpha Conception of Critical Thinking”)<sup>2</sup> on any one of the definitions, even though I had only one of them in mind as I developed it. This conception is outlined, and sources containing elaboration are indicated, in Appendix A1.

I characterize the concept defined by the list of definitions in Table 1 as the mainstream concept held by philosophically-oriented people in the field and by the media. I assume that philosophically-oriented people who teach critical thinking, write articles about critical thinking, and write critical thinking textbooks, etc. are within the field. I emphasize philosophically-oriented people because critical thinking grew out of philosophy. The father of the current critical thinking movement is the philosopher, John Dewey (1910), whose definition is the first in Table 1.<sup>3</sup> But I could have gone back to John Stuart Mill, a philosopher who wrote a book with many editions, *A System of Logic* (defining “logic” broadly) in the mid Nineteenth Century, or even further to Plato and Aristotle. Furthermore, the author of the first textbook called “critical thinking” that I have found is the philosopher, Max Black (1945).

On the other hand, I assume that people who hold critical thinking to be primarily negative thinking (Roth 2010), people who hold critical thinking to be deductive thinking only, and people who define critical thinking to be what they are teaching – in order to bolster their enrollments in an academic environment requiring critical thinking, or to achieve other political purposes (see Freeman 2012), are not in the field of mainstream critical thinking.

I conclude that the apparent variety of basic reported definitions of the concept, critical thinking, does not exhibit chaos in the field regarding what critical thinking is. Rather it exhibits strong agreement among mainstream people in the field and the general public about the basic concept. The various reported definitions of “critical thinking” indicate a variety of aspects of the concept, critical thinking.

### 5.3. The distinction between concepts and conceptions

I am using the word “concept” in the same way I believe that Rawls (1971, p. 5), following Hart (1961), used it in distinguishing between the concept of *justice* and conceptions of *justice*. Although to my knowledge he did not define “concept” and “conception”, I infer that a concept is that to which a term refers as shown by general agreement in a significant and established group of people on similar reported definitions of the term, and a conception is a specific proposal to implement the concept.

There are a number of different definitions of justice. (See Appendix B.) But they all seem to be in agreement with each other. So the concepts of critical thinking and justice are also alike in this respect.

My house is an analogy that provides an image corresponding to what Rawls is saying about the concept, “justice”, and what I will say about the concept, “critical thinking”. There are many different identifying descriptions of my house, some more thoughtfully done than others, some in more detail than others, all successfully identifying my house, but there is only one house. The concepts, “justice” and “critical thinking” are like my house in this analogy: one house, a variety of descriptions; one concept, a variety of descriptions (in the form of definitions).

---

<sup>2</sup> Alpha is a hypothetical college for which I have designed a proposal for critical thinking across the curriculum (Ennis, in process).

<sup>3</sup> Actually Dewey called it “reflective thinking”; the Progressive Educators, who held Dewey in high regard, changed the label to “critical thinking” in the first half of the 20<sup>th</sup> Century. See Ennis (2011) for more history.

On the other hand, as I see it, a conception is a proposed plan for achieving the instantiation of the concept to at least some extent. Conceptions tend to be different from each other, and can be in conflict with each other.

I have argued that the population group, philosophically-oriented practitioners in the field of critical thinking and the educated general public, support basically the same concept of critical thinking, to which any of the so-far reported definitions of critical thinking refer. Accordingly, the variety of definitions of the concept critical thinking are not a problem at all.

But there are different conceptions of critical thinking, as can be seen in Appendices A-1 to 4, just as there are different conceptions of justice. Is this a serious problem?

#### **5.4. Conceptions of critical thinking**

The detailed Alpha Conception consists of Appendix A1 and its unexemplified elaboration in “The Nature of Critical Thinking” (Ennis 2011; 2016), but which is most fully clarified in Ennis (1996). The elaborations include not only sets of dispositions and abilities, but also principles and criteria. Here is an example of a criterion which an acceptable hypothesis should satisfy:

“Competitive alternative explanations are inconsistent with facts”.

This sort of elaboration is part of my total conception of critical thinking, which takes a position on specific things to teach in a total critical thinking curriculum.

As stated in *Clemson Thinks2* (Clemson 2016, pp. 29-30), a much less detailed eight-point conception of critical thinking (though no doubt there are more details elsewhere) is presented in Appendix A2, *Clemson’s Brief Conception of Critical Thinking*. Like Alpha, it too is a proposal or plan. They both take a position on how to interpret and apply the concept of critical thinking.

There are a number of conceptions of critical thinking, which really are different to varying extents from each other. But is there an overwhelmingly varying and debilitating set of conceptions? I think not, because the differences are for the most part understandable and acceptable, given the variety of situations in which we try to teach critical thinking. A conception should fit the situation in which it is to be used.

Situations vary in the amount of teaching and student time available, the initial critical thinking level of students, the interests of the faculty, the political background, and the desired emphases, rigor, depth, and comprehensiveness. It is reasonable for the conception to be designed to fit the local situation, so long as the mainstream concept is also the guide. The conception proposed in Appendix A2 was developed to suit Clemson’s situation. The Alpha Conception, which is outlined in Appendix A1, is designed for an ambitious institution with a good deal of student and faculty time to devote to critical thinking, and strong faculty, administrative, and student support. It is suited to my four-year proposal for critical thinking across the curriculum at hypothetical Alpha College (Ennis, in process).

The proposal for the California State University (Appendix A3) is somewhat on the borderline between being part of the agreed-upon definition of the concept of critical thinking and part of a conception of critical thinking. “Reason inductively and deductively” and understand “the formal and informal fallacies of language and thought” seem more like part of a conception, whereas “the abilities to analyze, criticize, and advocate ideas” and “reach well-supported ... conclusions” seem like part of the concept of “critical thinking”.

Appendix A4 is a list of items of the conception prepared by Glaser (1941), which was the basis for the making of an early critical thinking test, *The Watson Glaser Critical Thinking Appraisal*.

These four conceptions (Appendices A1, A2, parts of A3, and A4) might be criticized for what they say and do not say, but the fact of differences is not distressing. It is to be expected – in order to handle the variety of situations that exist. Furthermore conceptions of critical thinking developed for one situation can be adjusted to fit a different situation. The Alpha Conception is in fact a variable basis that can be simplified or elaborated further to provide a level of sophistication and emphasis suitable for various specific situations.

In sum, differences in the mainstream *concept* do not really exist, and differences in *conceptions* that are based on the mainstream concept of *critical thinking* are usually to a great extent attributable to and appropriate for the differences in the situations of the people promoting the conception. So differences in our definitions of critical thinking are not distressing indicators of chaos but rather indicators of a well-functioning field. Rawl’s and Hart’s concept/conception distinction facilitates reaching and expressing these conclusions.

#### 5.4. Objectivity

Similarly I suspect that the concept/conception distinction holds for, and is useful in examining and discussing definitions of the concept, “objectivity”.

#### 5.5. The mainstream concept of objectivity

Dictionaries typically define “objective” in an extended-synonym definition, and then adapt it to make a classification definition of “objectivity” as “the quality of being \_\_\_\_\_”, substituting the original definition of “objective” for the blank. In Table 3 I shall try to follow suit in a set of “adaptations”.

**Table 3. Definitions of “Objectivity”**

All but the last are adaptations:

- 1) Objectivity is the quality of not being influenced by personal feelings, interpretations, or prejudice; based on facts; unbiased (*Dictionary.com* 2016).
  - 2) The quality of not being affected by personal feelings or prejudices; based on facts; unbiased (Urdang & Flexner 1968, p. 916).
  - 3) The quality of being based on real facts, and not influenced by personal beliefs or feelings. (*Cambridge Dictionaries Online* (2016) UK)
  - 4) The quality of being based on facts rather than feelings or opinions; not influenced by feelings (*Meriam Webster* 2016).
  - 5) “The kind of viewpoint that is unbiased by individual prejudices, sensory and perceptual distortions, or misinterpretations” (Pense, *A Dictionary of Common Philosophical Terms*, 2000, p. 39).
- 

I see very little differences among these definitions of *objectivity*, and hold that these reported definitions all express a mainstream concept of *objectivity*, and that all well-educated native

speakers of English accept this mainstream concept – at least in their everyday lives when not wearing their theorizing hats – and regard it as generally desirable.

However, there is disagreement among a number of philosophers of science about the concept of *objectivity* in science, including disagreement about the meaning of most of the terms in the mainstream concept, and disagreement about whether objectivity is a good thing and/or is even possible (Reiss and Sprenger 2014). So what I call the mainstream concept of objectivity is not mainstream for some participants in that discussion. The argument here can get complex, as it has in the past about the possibility of *neutrality*, a similar concept (Ennis 1969, 1961). There is insufficient time or space here to deal with it. But I trust that others at this conference will be doing so.

### 5.6. Conceptions of objectivity

On the other hand, the dictionary definitions of the concept, “objectivity”, are appropriate for situations in which everyday arguments arise, such as investigating whether a new intersection is needed at some given point on a high-speed highway, or a basketball referee’s judging whether a foul was committed. I shall briefly sketch out a position.

These are situations in which there are accepted rules or guidelines. These rules and guidelines add structure to the concept of *objectivity* to produce conceptions of *objectivity*. For example, one rule for a basketball referee is that the referee see the play about which a judgment is made. Another is that the referee did not bet on the outcome of a game he or she is refereeing. There are different rules or guidelines for judging the objectivity of a highway intersection recommender, such as that the recommender be familiar with a number of such intersections. In such everyday situations, based on the rules and the original concept, we often usefully deem decision-makers and their decisions to be objective, or not objective, or for the most part objective, etc., and use this judgment in arguments. Sometimes it is difficult to make the judgments, but objectivity is generally a worthwhile and useful ideal in everyday arguments.

## 6. Summary

In this essay I provide a three-dimensional analysis of definition and conveying meaning, consisting of form, stance, and content. Standard forms include classification, equivalent-expression, range, synonym, extended-synonym, and operational; two auxiliary forms are example/non-example/borderline-case, and using the term in a sentence as means of conveying meaning. Stances, the second dimension, are stipulating, reporting and taking a position. A definer can take more than one stance toward a definition. Content, the third dimension, is the words used.

Equivocation is a continuing concern when different meanings are used accidentally or on purpose for a given term.

I use the distinction between multiple, compatible, true reported definitions of a term for a given group, and proposals for implementation – to interpret Rawls’ concept-conception distinction in definitional terms and suggest that this distinction is useful in dealing with complaints about there being too many definitions of “critical thinking”. I hold that the apparent differences between different representations of the mainstream concept of *critical thinking* are illusory because the basic reported definitions of critical thinking by people in the field and current internet definitions of critical thinking that I have found seem similar and all seem to be

true reported definitions of one mainstream concept, although they use various combinations of words (the content dimension).

On the other hand, differences among conceptions of critical thinking, which are attempts to be specific in implementing the critical thinking concept, are bound to be different because they need to fit local situations, and local situations differ. So having different proposed implementations of the concept of critical thinking is generally to be expected and acceptable.

On the whole then, differences in definition of “critical thinking” are not a significant problem.

With respect to the concept of *objectivity*, although there is disagreement among a number of philosophers of science, there is strong reported-definition (dictionary) agreement among non-philosophical definers of the concept of *objectivity*. My sense of the everyday use of the English language suggests that the conceptions of *objectivity* based on the dictionary-definition concept, and detailed for the type of situation, are places to provide and seek guidance in everyday argumentation, where objectivity is generally a good thing.

**Acknowledgements:** I deeply appreciate the help and advice of Jennie Berg in the preparation of this essay.

## References

- Bailin, S. and M. Battersby (2010). *Reason in the Balance: An Inquiry Approach to Critical Thinking*. Ontario: McGraw Hill.
- Black, M. (1954). The definition of scientific method. In: Black, Max (Ed.), *Problems of Analysis: Philosophical essays* (pp. 3-23). Ithaca NY: Cornell University Press.
- Blackburn, S. (1996). *The Oxford Dictionary of Philosophy*. Oxford: Oxford University Press.
- Bridgman, P. (1927). *The Logic of Modern Physics*. New York: Macmillan.
- California State University (2011). Executive Order 1065. Downloaded March 29, 2016, from <http://www.calstate.edu/eo/eo-1065.pdf>
- Cambridge Dictionaries Online* (2016). Examined April 2, 2016, at <http://dictionary.cambridge.org/us/dictionary/english/objective>
- Casslerly M. (2012). The 10 skills that will get you hired in 2013. *Forbes*, Dec 10.
- Clemson University (2016). Clemson Think2. Downloaded March 29, 2016, from <http://www.clemson.edu/academics/programs/thinks2/QEP-report.pdf>
- Copi, I. (1953). *Introduction to Logic*. New York: Macmillan.
- Dewey, J. (1933, first edition 1910). *How We Think*. Boston: D. C. Heath.
- Dictionary.com (2016), <http://www.dictionary.com/> Downloaded April 9, 2016.
- Ennis, R. (in process). Critical thinking across the curriculum: A vision. *TOPOI* (A much-revised development from Ennis, 2013 below).
- Ennis, R. (2016). The nature of critical thinking. Viewed April 12, 2016, at <http://criticalthinking.net/longdefinition.html>
- Ennis, R. (2015). Critical thinking: A streamlined conception. (A revised version of Ennis (1991) below). In: Davies, M. and R. Barnett (Eds.), *A Handbook Of Critical Thinking in Higher Education* (pp. 31-47). New York: Palgrave Macmillan.
- Ennis, R. (2013). Critical thinking across the curriculum: The Wisdom CTAC Program. *Inquiry: Critical Thinking across the Curriculum* 28 (2), 25-45.

- Ennis, R. (2011). Critical thinking: Reflection and perspective—Part I. *Inquiry: Critical Thinking Across the Disciplines* 26 (1), 4-18.
- Ennis, R. (1991). Critical thinking: A streamlined conception. *Teaching Philosophy* 14 (1), 5-25.
- Ennis, R. (1987b). A taxonomy of critical thinking dispositions and abilities. In Baron, J. and R. Sternberg (Eds.), *Teaching Thinking Skills: Theory and Practice* (pp. 9-26), New York: Freeman.
- Ennis, R. (1987a). A conception of critical thinking – with some curriculum suggestions. *APA Newsletter on Teaching Philosophy*: Summer, 1987, 1-5.
- Ennis, R. (1969). The possibility of neutrality. *Educational Theory* 19 (4), 347-356.
- Ennis, R. (1959). The “impossibility” of neutrality. *Harvard Educational Review* (29), 128-136. Reprinted as “Is it impossible for the schools to be neutral?” (1961). *Language and concepts in education*, B. Othanel Smith and Robert Ennis (eds.), Chicago: Rand McNally and Company, (102-111). Also (1971) “¿Es imposible que las escuelas sean neutrales?”, in Smith, B. Othanel and Robert Ennis (eds.), *Lenguaje y conceptos en la educacion*, Smith, B. Othanel and Robert Ennis (eds.). Buenos Aires: Al Ateneo, 113-123.
- Facione, P. (1990). Consensus statement regarding critical thinking and the ideal critical thinker. Millbrae, CA: California Academic Press.
- Fisher, A. and Michael S. (1997). *Critical Thinking: Its Definition and Assessment*. Point Reyes, CA: Edgepress.
- Freeman, J. (2012). Reply from AILACT Board of Directors to Peter Wood's comments on critical thinking. Posted on *Chronicle of Higher Education* Website, <http://chronicle.com>, under Blogs, Innovations/Peter Wood, March 14, 2012. Reprinted in AILACT Newsletter, April 2012, 2-4.
- Glaser, E. (1941). *An Experiment in the Development of Critical Thinking*. New York: Teacher's College, Columbia University
- Hart, H. L. A. (1961). *The Concept of Law*. Oxford: Clarendon Press.
- Hatcher, D. and L. A. Spencer (2006). *Reasoning and Writing: From Critical Thinking to Composition* (3rd ed). Boston: American Press. (Original work published by Copley Publishing, 1992, and Rowman and Littlefield, 1993.)
- Hempel, C. (1952). Fundamentals of concept formation in empirical science. *Foundation of the Unity of Science*, II 7. Chicago: University of Chicago Press.
- International Astronomical Union (2006). Pluto and the developing landscape of our solar system. Downloaded April 4, 2016, from [http://www.iau.org/static/resolutions/Resolution\\_GA26-5-6.pdf](http://www.iau.org/static/resolutions/Resolution_GA26-5-6.pdf)
- Johnson, R. (2014). *The Rise of Informal Logic* (digital edition). Windsor Studies in Argumentation.
- Kuhn, D. (2015). Thinking together and alone. *Educational Researcher* 44 (1), 46-53.
- Lipman, M. (1988). Critical thinking: What can it be? *Educational Leadership* 46 (September), 38-43.
- Meriam Webster (2016). Downloaded April 10, 2016, from <http://www.merriam-webster.com/dictionary/objectively>
- Moor, B. N. and R. Parker (2014). *Critical Thinking* (11<sup>th</sup> ed.). Boston: McGraw Hill.
- Pence, G. (2000). *A Dictionary of Common Philosophical Terms*. New York: McGraw-Hill.
- Oxford Dictionaries.com (2016). [http://www.oxforddictionaries.com/us/definition/american\\_english/critical-thinking](http://www.oxforddictionaries.com/us/definition/american_english/critical-thinking)



- Possin, K. (2002). *Critical Thinking*. Winona, MN: The Critical Thinking Lab
- Rawls, J. (1971). *Theory of Justice*. Cambridge, MA: Harvard University Press.
- Reiss, J. and J. Sprenger (2014). Scientific objectivity. *The Stanford Encyclopedia of Philosophy* (Fall 2014 Edition), Edward N. Zalta (ed.) Examined 4-17-16.  
<http://plato.stanford.edu/archives/fall2014/entries/scientific-objectivity/>.
- Roth, M. (2010). Beyond critical thinking. *Chronicle of Higher Education*, January 3, 2010. Accessed March 30, 2016, at  
<http://chronicle.com/article/Beyond-Critical-Thinking/63288>
- Scheffler, I. (1960). *The Language of Education*. Springfield, IL: Charles C Thomas.
- Scriven, M. and R. Paul (1987). Presentation. 8<sup>th</sup> Annual International Conference on Critical Thinking and Education Reform. Available March 1, 2016, at  
<http://www.criticalthinking.org/pages/defining-critical-thinking/766>
- Siegel, H. (1988). *Educating Reason: Rationality, Critical Thinking, and Education*. New York and London: Routledge.
- Weiner-Bronner, D. (2015). Is Pluto a planet? The answer may surprise you. Examined March 28, 2016, at <http://fusion.net/story/158379/is-pluto-a-planet-the-answer-may-surprise-you/>
- YourDictionary.com (2016). Downloaded April 17, 2016.  
<http://www.yourdictionary.com/critical-thinking>

## 7. Appendices A1 – A4

### **A1. An outline of a partial conception of critical thinking: Critical thinking dispositions and abilities**

#### *Background:*

The partial *conception* (an outline of critical thinking dispositions and abilities below) was based on the following definition of “critical thinking”:

“Critical thinking is reasonable reflective thinking focused on deciding what to believe or do” (Ennis, 1987a, 1987b, 1991, 1996, 2011, 2015).

This definition is one of the definitions in Table 1 in the text. However, the partial conception and the Alpha Conception (my total conception of critical thinking) could have been based on any of the other definitions in Table 1, as noted in the body of the essay.

The following partial conception, consisting of 12 dispositions and 18 general critical thinking abilities, is partial because it does not contain principles and criteria to be used in making decisions. The addition of a full set of critical thinking principles and criteria would convert this partial conception into a complete conception of critical thinking (like the “Alpha Conception”).

An example of a critical thinking principle is that a source’s having a conflict of interest counts against the credibility of the source. This principle helps elaborate Ability #5 below. Principles and criteria are not included in this Appendix because of space limitations.

However, “The Nature of Critical Thinking”, an item that contains the following abilities and dispositions, and is for-the-most-part elaborated with principles and criteria, though unexemplified, can be found in Ennis (2011), and at <http://criticalthinking.net/longdefinition.html> (2016). Ennis (1996) provides a heavily exemplified elaboration. Ennis (2015 and 1991) provides shorter but less comprehensive exemplified elaborations.

*General critical thinking dispositions:*

Ideal critical thinkers are disposed to

1. Seek and offer clear statements of the conclusion or question
2. Seek and offer clear reasons, and be clear about their relationships with each other and the conclusion
3. Try to be well informed
4. Use credible sources and observations, and usually mention them
5. Take into account the total situation
6. Keep in mind the basic concern in the context
7. Be alert for alternatives
8. Be open-minded
  - a. Seriously consider other points of view
  - b. Withhold judgment when the evidence and reasons are insufficient
9. Take a position and change a position when the evidence and reasons are sufficient
10. Seek as much precision as the nature of the subject admits
11. Seek the truth when it makes sense to do so, and more broadly, try to "get it right" to the extent possible or feasible
12. Employ their critical thinking abilities and dispositions

*General critical thinking abilities*

Ideal critical thinkers have the ability to:

(Basic Clarification)

1. Focus on a question
2. Analyze arguments
3. Ask and answer clarification questions
4. Understand and use elementary graphs and maths

(Bases for a Decision)

5. Judge the credibility of a source
6. Observe, and judge observation reports
7. Use existing knowledge
  - a. background knowledge, including (with discretion) internet material
  - b. their knowledge of the situation
  - c. their previously-established conclusions

(Inference)

8. Deduce, and judge deductions
9. Make, and judge inductive inferences and arguments

- a. Enumerative induction
  - b. Argument and inference to best explanation
10. Make, and judge value judgments  
(Advanced Clarification)
  11. Define terms, and judge definitions
  12. Handle equivocation appropriately
  13. Attribute and judge unstated assumptions
  14. Think suppositionally
  15. Deal with fallacy labels
  16. Be aware of, and check the quality of, their own thinking ("metacognition")
  17. Deal with things in an orderly manner  
(Not Constitutive, But Often Helpful If Not Misused)
  18. Employ rhetorical strategies

## **A2. Clemson's Brief Conception of Critical Thinking**

- “1. Determine the relevance of information for evaluating an argument or conclusion.  
2. Recognize flaws and inconsistencies in an argument  
3. Evaluate competing causal explanations  
4. Evaluate hypotheses for consistency with established facts  
5. Determine whether an artistic interpretation is supported by evidence contained in a work  
6. Recognize the salient features in a work of art  
7. Evaluate the appropriateness of procedures for investigating a question of causation  
8. Evaluate data for consistency with established facts, hypotheses, or methods” (Clemson Thinks 2, 2016, pp. 29-30)

## **A3. California State University's Executive Order 1065**

“In critical thinking ... courses, students will understand logic and its relation to language; elementary inductive and deductive processes, including an understanding of the formal and informal fallacies of language and thought; and the ability to distinguish matters of fact from issues of judgment or opinion...Students will develop the abilities to analyze, criticize, and advocate ideas; to reason inductively and deductively; and to reach well-supported factual or judgmental conclusions” (2011, p.7).

## **A4. Edward Glaser's Brief Conception of Critical Thinking**

“Critical thinking calls for a persistent effort to examine any belief or supposed form of knowledge in the light of the evidence that supports it and the further conclusions to which it tends. It also generally requires ability to recognize problems, to find workable means for meeting those problems, to gather and marshal pertinent information, to recognize unstated assumptions and values, to comprehend and use language with accuracy, clarity, and discrimination, to interpret data, to appraise evidence and evaluate arguments, to recognize the existence (or non-existence) of logical relationships between propositions, to draw warranted conclusions and generalizations, to put to test the conclusions and generalizations at which one

arrives, to reconstruct one's patterns of beliefs on the basis of wider experience, and to render accurate judgments about specific things and qualities in everyday life.”

### **8. Appendix B. Reported Definitions of ‘Justice’**

“Those who hold different conceptions of justice can...still agree that institutions are just when no arbitrary distinctions are made between persons in the assigning of basic rights and duties and when the rules determine a proper balance between competing claims to the advantages of life” (Rawls, p. 5).

“The quality of conforming to principles of reason, to generally accepted standards of right and wrong, and to the stated terms of laws rules, agreements, etc., in matters affecting persons who could be wronged or unduly favored” (Urdang & Flexner 1968).

“The condition of being morally correct or fair” (*Cambridge Dictionaries Online* (2016)).

“Righteousness, equitableness, or moral rightness.... rightfulness or lawfulness, as of a claim or title” (*Dictionary.com* (2016)).

“The fair allocation of benefits and burdens in society” (Pence’s *Dictionary of Common Philosophical Terms*, 2000, p. 30)).

“The just distribution of benefits and burdens [is] the outcome in which everyone receives their due” (Blackburn, *The Oxford Dictionary of Philosophy*, 1996, p. 203).