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Definition

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1. Introduction[1]

Definition, though often neglected, plays an important role in critical thinking by helping us make our positions, inquiries, and reasoning clear.

Every definition has three dimensions: *form, action,* and *content*. The *form* of a definition is essentially the structure of the definition. An example of form is definition by synonym, a simple form of definition in which the word being defined is equal in meaning to one other word.

Three definitional *actions* that can be performed with any form of definition are *reporting* a meaning, *stipulating* a meaning, and *advocating* a meaning that incorporates a *position* on an issue.

This chapter focuses on these first two dimensions, form and action.

The third dimension, *content*, deals with the meaning conveyed by the definition. The content dimension is enormous because it involves the definitional content of all subject matter areas, as well as all other areas of human life. Attention to the content dimension will here be exemplified only in a discussion of a case of probable equivocation with the term 'reliability'.

To the extent possible, a definition should be clear, brief, efficient, informative, responsive to background information, and easy to remember and understand. It should be at an appropriate level of sophistication and difficulty for the situation. It should employ an appropriate form and have a reasonable amount of vagueness and specificity. Because so much depends on the situation, and because these general criteria overlap to some extent, informed cautious judgment is required.

[1] I deeply appreciate the help and advice of Jennie Berg, David Hitchcock, and Kevin Possin in the development of this chapter.

There has been little recent work with practical application in the area of definition. I hope that in the future there will be more explicit attention given to this topic than has been afforded it so far.

2. Common forms of definition

Full-definition forms to be presented are: (1) classification, (2) equivalent-expression, (3) range, (4) synonym, (5) extended-synonym, (6) antonym, and (7) operational. Partial-definition forms to be considered are (8) giving examples, non-examples, and borderline cases (all three either verbally or ostensively), as well as using the term in a sentence.[2] There is much to consider in a given context in choosing what form is more successful in specifying the meaning of a term. It is often helpful to compare a definition with another definition of the same word in the same form or in a different form.

2.1 Classification definition

Classification definition is a very common form of definition of nouns. Here is one of a number of possible classification definitions of the noun, 'argument' (Example 1):

E1 *An argument is a reason-based attempt to justify a conclusion.*

I have called this popular type of definition "classification definition" because things labeled by the term being defined (in this case, 'argument') are *classified* as the members of a general class (e.g., *reason-based attempts*) and then further classified under one or more distinguishing features (e.g., *to justify a conclusion*).

In definition lore, classification definition is often called "genus-differentia definition", with the word 'genus' referring to the *general class* and the word 'differentia' referring to the *distinguishing features*.[3] I prefer the label "classification definition" over the label "genus-differentia definition" primarily because the words 'classification definition' are more user-friendly for beginners than 'genus-differentia'. Another reason is that in 'genus-differentia' terminology the differentia must be treated as one thing because the word, 'differentia' is singular. Even though there are ways around this, I usually find

[2] Recursive definition is not included because it is used too rarely by expected readers to warrant explaining its complexities. Those who need it will have good sources for it.

[3] Copi (1953 and later editions), in a popular book, used the label "genus-difference" definition (rather than "genus differentia"). He stated that by "difference" he meant "differentia".

it easier to develop and work with definitions that make it easy to treat multiple distinguishing features separately.

In logical terms the components mentioned in the defining part of a simple classification definition (the *general class* and the *distinguishing features*) are each necessary and jointly sufficient for something to be what is labeled by the term being defined. Most other definition forms do not have the strictness of 'necessary' and 'sufficient'.

2.1.1 Flexibility in offering and selecting the general class

In this classification definition of 'stapler', 'a *device* for fastening two or more pieces of paper together', *device* is the general class. In this classification definition of 'automobile' (adapted from *Dictionary.com*, accessed Sept. 5, 2017), 'a *vehicle* designed for operation on ordinary roads, able to carry passengers, and typically having four wheels and a gasoline or diesel internal-combustion engine', *vehicle* is the general class. In a classification definition, there must be a general class.

However there is often more than one legitimate choice of the general class for any given meaning of a term. One way to look at Example 1 (above) is to consider *reason-based attempt* as the general class and *to justify a conclusion* as a distinguishing feature. A different way to analyze this meaning of 'argument' is to treat *attempt* as the general class and the rest (*based on reasons* and *to justify a conclusion*) as the distinguishing features, as is explicitly exemplified in Example 2.

E2 *An argument is an attempt based on reasons to justify a conclusion.*

Such variations in general class and accompanying variations among the distinguishing features often are possible without changing the meaning of the term being defined. Note that in Example 3 (below), the same meaning of 'argument' is captured, though there is a considerably different general class, *set of reasons and a conclusion offered by the arguer,* and different distinguishing features, *in an attempt* and *to justify a conclusion*:

E3 *An argument is a set of reasons and a conclusion offered by the arguer in an attempt to justify a conclusion.*

One should be flexible in choosing the general class because one choice is often better than the others, so we should not hastily accept the first to occur to us. This flexibility calls for paying attention to the general criteria for a definition mentioned earlier.

Of the three general classes so far considered (each of which introduces what is basically the same meaning of 'argument'), the one that I prefer is *reason-based attempt.* I choose it over *attempt* because *attempt* seems to be too broad a category; it does not rule out enough things; that is, it does not

give much guidance. Furthermore, I prefer *reason-based attempt* over *set of reasons and a conclusion offered by an arguer* as the general class, because the definition in Example 1 using *reason-based attempt* seems to satisfy more of the above-mentioned criteria for a definition than Example 3. Example 1 seems clear, brief, efficient, easy to remember, and easy to understand.

One important thing to be learned from these examples is that there can be explicitly different definitions of a term, each of which defines the term adequately without changing the basic meaning. Elsewhere (2016), I have gathered fourteen definitions of 'critical thinking' by leaders in the field, starting with John Dewey (1933, first ed., 1910), who inspired the current critical thinking movement under the label "critical thinking". Most of these fourteen definitions are classification definitions They are essentially in agreement with each other about the meaning of 'critical thinking', even though they use different words and cite different features. Each one seems essentially right. This sort of occurrence is an interesting content-dimension fact about a number of concepts and definitions. Many concepts have more than enough necessary and/or sufficient conditions to identify them uniquely. And different definitions have different amounts of informative but not logically necessary material.

2.1.2 Imprecision

Ordinary language being what it is, we often must accept some imprecision, which often depends on the context. For instance, Example 3 does not tell us whether a pair of people working together can constitute an *arguer*. But specifics like that might not matter at all, given the context in which the term is being defined. Also the first three examples above do not specify what kind of justification is involved (for example, deductive validity, or validity in its non-technical sense, meaning roughly 'correctness'), but the context might settle that. If the context were a course in deductive logic, the "necessary-follows" sense of 'validity' would probably be appropriate.

In these cases, given that the context is the field of critical thinking, the three definitions are concerned with all kinds of justification, and are not limited to deductive validity.

The range definition form, which is soon to be considered, explicitly makes imprecision evident when defining obviously imprecise terms. But at some level of elaboration, most everyday terms have a degree of possible imprecision, and the definer must decide how much precision is available and desirable, given the context and the ordinary meaning of the term in the context, and implement that decision with appropriate wording.

2.1.3 Nouns and Non-nouns

Classification definition and genus-differentia definition require that the term being defined be a noun. If some other part of speech, for example, a verb (an example being 'argue') is to be defined using the classification form, perhaps because of familiarity with classification definition, or its completeness, the term 'argue' can be converted to a noun (possibly 'argument') and defined as a noun. From this definition the receiver must infer what the original word ('argue') means. If an expected audience can infer the meaning of 'argue' from Examples 1, 2, and/or 3, then these examples of classification definition might well be used to define 'argue' in this manner, that is, indirectly. But there are other definition forms, especially the equivalent-expression form, which might work as well or better in some cases.

2.2 Equivalent-expression definition

When the term we want to define is not a noun, another form, equivalent-expression definition might be appropriate. Equivalent-expression definition does not require that we convert the term to be defined to a noun, which can make problems, as I shall later show. Instead the term to be defined remains unchanged and is put in a larger expression that is equated with an equivalent expression. This type of definition, which I call "equivalent-expression definition", is called "contextual definition" by Hempel (1952, p. 5), and *Dictionary.com* (August, 2017). Example 4 is an equivalent-expression definition of the verb, 'argue':

E4 *'To argue in support of a conclusion' is 'to attempt to justify it'.*[4]

The expressions on each side of the word 'is' are claimed to be equal in meaning to each other, giving us a good idea of the meaning of 'argue' in the sense in which I believe it is usually used in the field of critical thinking.

The adjective 'biased' can be handled the same way, as shown in an equivalent-expression definition in Example 5:

E5 *To say "a person is biased" is to say "the person lets his or her prejudices influence his or her judgment".*

[4] Notes about punctuation of definitions: Equivalent-expression definitions equate expressions, so the things equated are in quotes. Classification definitions are about classes, so the items in the definition are not in quotes. Similar ideas apply to other definitions in this chapter. If the verb in the definition is 'means', the subject of the definition sentence is a word and is in quotes, and the part after 'means' is not in quotes. If the equating verbal phrase in the definition is 'means the same as', both sides of it are in quotes. The basic idea is that references to words are in quotes; other references are not.

However, if we try to convert the non-noun ('biased' for example) to a noun, such as 'bias', as we might in trying to make a classification definition for 'biased', the task might become difficult. I invite you to ask yourself, "What general class could one use to give a classification definition of the noun, 'bias'?" After rejecting a number of candidates that occurred to me, I chose 'disposition', resulting in Example 6:

E6 *A bias is a persistent prejudiced disposition toward issues and/or people.*

But it took me a while to come up with that. I considered 'quality', which is a common, but often not very informative, general class term, and feel it is too general to be of much help. The result in Example 6 is usable, but I prefer Example 5, the equivalent-expression definition. It seems more informative. Some readers might prefer Example 6. The important thing is that there are generally different alternatives in defining terms, and a definer should consider the alternatives and apply the general criteria for definitions. No one form is always best. Sometimes the classification form seems best, sometimes the equivalent-expression form, sometimes another form. This is a matter about which reasonable people can differ.

Another instructive example is the term, 'valid', as used by logicians. Although not a noun, its companion noun, 'validity' can be given a classification definition as a noun by introducing the very general noun, 'quality', followed by a user's inference back to the meaning of the adjective, 'valid' (assuming a logician's context). Here is such a classification definition:

E7 *Validity is the quality of an argument in which the conclusion follows necessarily from the premises.*

Here is an equivalent-expression definition of 'valid':

E8 *'An argument is valid' means the same as 'The conclusion follows necessarily from the premises.'*

The equivalent-expression form obviates the need to find a workable noun for a general class term, and generally provides a convenient definition, as noted in dealing with 'bias' (Examples 5 and 6), and 'valid' (Examples 7 and 8).

But the equivalent-expression form does not provide the general class and distinguishing features characteristic of the classification form, and so is not so clearly bounded as a classification definition of the term. For example, it does not necessarily provide an interpretation when the term being defined is not in the chosen context, and is in other contexts, or no context. Furthermore it does not require the necessary and sufficient condition guarantee provided by a classification definition.

One must decide, and not only between these two forms. There are other forms as well. In any case one must consider the definition criteria, the situation, and one's personal theoretically-motivated or pedagogically-motivated preferences.

2.3 Range definition

Range definition, a deliberately-vague form named by Max Black (1954), can be roughly a classification definition in form, specifying a general class and roughly distinguishing the term being defined from other members of the class. But it deliberately introduces explicit vagueness. Black likened the vagueness to that of a mountain range (hence the term "range"). The following range definition of 'scientific method', based on Black (1954), exhibits deliberate vagueness:

E9 *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 is deliberately introduced by the terms 'characteristically', 'substantial number', 'rarely all', 'more or less', and 'tentative'. The definer should use such qualifiers as these to indicate when defining a term that is clearly vague in the situation. Although this particular definition of 'scientific method' is close to being in a classification form, range definitions need not approximate the classification form. They can be similar to other forms. But of course they should satisfy definition criteria, as is feasible, given their vagueness.

2.4 Synonym definition

The synonym form uses one word to define another word. One advantage of the synonym form is that it is suitable for non-nouns. Another advantage is its brevity. Here is an example:

E10 *'Biased' means the same as 'prejudiced'.*

Although convenient when time is short, synonym definitions often do not capture the full meaning of the word being defined, sometimes because they are made in a hurry, but often because there is no single word that is equivalent. Synonym form may not be the best way to define a term in a given

situation because, although convenience and understandability are important, accuracy is often more important.

2.5 Extended-synonym definition

Instead of being limited to a one-word meaning as we are with a synonym definition, it is often helpful to add clarification to the defining component, producing an extended-synonym definition. This form does not embed the term being defined in a context, and thus is not the equivalent-expression form. Furthermore the extended-synonym form is useful for those terms that do not work well with the rigid necessary-and-sufficient-condition structure of a classification definition.

I think that 'objective' is such a term and suggest the following extended-synonym definition of 'objective' from *Dictionary.com* (2017):

E11 *'Objective' means not influenced by personal feelings, interpretations, or prejudice; based on facts; unbiased.*

The term 'objective' I believe loosely fits each part of the array of terms in Example 11. But it fits no one of these terms exactly, although as a group, they do a fairly good job, making the extended-synonym form appropriate for this term. Adding a use-in-a-sentence partial definition (see Example 17 below) to Example 11 provides what I believe is an even better grasp of the term, 'objective'.

I realize this is a somewhat subjective appraisal. But the principal goal of this chapter is to provide a choice of alternative forms that one can use. This requires using one's judgment (which often will be somewhat subjective) in each situation with due respect to the criteria for a good definition.

Example 12 is an unsuccessful attempt to convert Example 11 into a classification definition:

E12 *Objectivity is the quality of not being influenced by personal feelings, interpretations, or prejudice; being based on facts; being unbiased.*

Using *quality* as the general class does help in this case by somewhat narrowing down the alternatives. However, the rest of Example 12 does not provide a set of necessary-and-sufficient condition distinguishing features. So Example 12 is not a classification definition. It is basically another extended-synonym definition and, as such, is a helpful conveyor of the meaning of 'objective' and 'objectivity'. As I noted earlier for Example 11, it can helpfully be supplemented by Example 17, yet to be presented, which adds concreteness to this definition.

2.6 Antonym definition

In the antonym form the defining term is one that means the opposite of the term being defined, an antonym being the opposite of a synonym. According to *The Random House Dictionary of the English Language, College Edition* (1968) and *Dictionary.com* (August, 2017):

E13 *'Fast' is an antonym of 'slow'.*

When the antonym is clear, well understood, and accurate (as it is in this case), the anonym form is quite useful.

2.7 Operational definition

The idea of operational definitions is often attributed to Percy Bridgman (1927) working in theoretical physics, where he suggested that the value of the term being defined is the reading on an instrument, assuming that the appropriate operation has been performed. An example in everyday life is the use of the basic fever thermometer to determine one's temperature, when the appropriate operation (including placing the tip of the thermometer under one's tongue for two minutes) has been performed. Using an operational definition, the operation and the reading on the instrument operationally define the meaning of the word 'temperature', by providing helpful concrete interpretation.

Roughly speaking there are two different directions of emphasis in implementing this basic operational idea: *strict* and *loose*. In the strict approach, the language does not leave room for human judgment. Here is an example of the strict approach:

E14 *If student X is given the "Wechsler Intelligence Scale for Children", X has an IQ of Y if and only if X gets a score of Y.*

Note that there are no qualifications in this strict version. This definition does not allow for exceptions and unforeseen situations. If a person had been up all night with the flu and could hardly concentrate when taking the test, there is no leeway. The person's IQ is the score on the test, if the test is given and scored.

Strict operational definition was adopted by participants in the reductionist, behaviorist, logical-positivist tradition of the early part of the Twentieth Century, which equated the meaning of a theoretical concept (for example, IQ) with the use of a particular measuring instrument and the resulting score, as in Example 14 above. Especially in testing humans, precision is claimed at the cost of ignoring the obvious problems.

In the loose approach (Ennis, 1964), qualifying words are inserted in anticipation of possible problems. Human judgment is needed and accepted in

order to apply the words of the loose operational definition of Example 15, which contains qualifying words like ‘probably’, ‘roughly’, and ‘under standard conditions’:

E15 *If a native-English-speaking college student 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 roughly to the degree of X.*

Actually in my experience there never has been a complete precise list of standard conditions for any test, presumably because it is impossible to know everything that can go wrong. There is always some variation in conditions. Many people do not realize the looseness introduced by “standard conditions”. Furthermore the causal relationships between a student’s characteristics and a test score are a matter of continuing controversy. All this justifies the use of such terms as ‘probably’, and ‘roughly’ when the defined term applies to a human mental characteristic, such as “critical thinking” does in Example 15.

Operational definitions provide a basis for some of the current extensive school testing emphasis in United States schools, but so used should be of the loose interpretation form of operational definition because of reasons given in the previous paragraph.

Both Examples 14 and 15 apply to human mental characteristics. When the definitions apply to characteristics of physical objects (like the fever thermometer), at least a somewhat strict approach is generally appropriate. But watchfulness and care are still required.

Some people have totally abandoned both the strict and the loose interpretations of the original spirit of operational definition, and think of operational definitions as just examples, or alternatively, as criteria for good things like “walkable neighborhoods” (Moudon, *et al.*, 2006). I urge us not to abandon the loose spirit of operational definitions, because holding at least a loose connection among the meaning of a term, a test, and a test result is insightful. It is politically important in dealing with the current testing movement at all levels of education.

2.8 Partial-definition forms

Strictly speaking, examples, non-examples, and borderline cases, as well as the use-in-a-sentence form of definition, do not approximate being full definitions. So I call them ‘partial-definition forms’.

2.8.1 Examples, non-examples, and borderline cases

Examples, non-examples, and borderline cases are partial forms of definition that can sometimes be especially helpful in providing meaning because they indicate crucial limits and provide helpful concrete elaboration. Often they can convey meaning to an extent that is sufficient for the situation, and can often do so even more effectively than, say, a classification definition that lacks concreteness. However, combining examples, non-examples, and borderline cases with full classification definitions can sometimes be even better.

The example, borderline-case, and non-example passages in Examples 16a and 16b below were useful to me elsewhere in introducing and clarifying a new meaning of the term '*subject-specific critical thinking ability*' (Ennis, 2018, p. 169):

> ***E16a*** *An example of a subject-specific critical thinking ability is the ability to plan, perform, and judge the results and relevance of* ***analysis of covariance*** *(used in several social and psychological sciences in order to judge the practical and statistical significance of a difference) with an understanding of the limitations involved. However, just understanding the concept of* ***statistical significance****, including sensitivity to its major strengths and weaknesses, is arguably a general ability.*

Analysis of covariance is not used in most fields and is totally unfamiliar to most educated people I know. So the example of doing analysis of covariance as a *subject-specific critical thinking ability,* which is specific to certain subjects or fields, should I believe help make this new meaning of the term 'subject-specific critical thinking ability' clear.

Statistical significance on the other hand is a borderline case. It is arguably general because most people have some sense of what it means. But most educated people I know do not really know what *statistical significance* is (in the social sciences), so it is arguably also subject-specific. It is thus a borderline case, and helps further to clarify 'subject-specific critical thinking ability'.

Example 16b, from a list of critical thinking abilities (Ennis, 2011, 2017), is a striking non-example of *subject-specific critical thinking ability:*

> ***E16b*** *Make and judge inductive inferences and arguments:*
> *Enumerative induction*
> *Argument and inference to best explanation*

'Inductive inferences and arguments', including the subcategories 'Enumerative induction' and 'Argument and inference to best explanation', are widely used in almost all fields (although perhaps not by those names), including

such widely disparate fields as courtroom trials and Shakespearean criticism (Ennis, 1996, pp. 221-228). So they are helpful *non-examples* of 'subject-specific critical thinking ability'.

So because of their immediacy and concreteness, the example and the borderline case in Example 16a and the non-example in Example 16b can be helpful in introducing and clarifying a new and useful term, 'subject-specific critical thinking ability', a term that I have found helpful in advocating critical thinking across the curriculum (2018).

Examples, non-examples, and borderline cases need not be only verbally presented. They can be presented in part by physically pointing, as in for example pointing at an almost-leafless formerly-healthy grapefruit tree to show someone an example of citrus greening (a serious citrus tree disease). Such pointing is called "ostensive definition". Like most ostensive definitions, it usually requires some verbal supplementation as well as background experience on the part of the learner. In this example the learner must have some grasp of the appearance of a healthy grapefruit tree. Together the pointing and the background knowledge are helpful in understanding the ostensive act. This example shows that ostensive definitions can be quick and effective in the right conditions. Incidentally they are also helpful in teaching words to children.

2.8.2 Using the term in a sentence

Here is a helpful example of the use-in-a-sentence form of partial definition for the term 'objective', provided by *Cambridge Dictionaries Online* (October, 2016):

E17 *I can't really be objective when I'm judging my daughter's work.*

Example 17 recognizes the prohibition against being influenced by personal feelings when trying to be objective, and makes use of well-known strong feelings most people have about their offspring. By itself, the use-in-a-sentence form is often not sufficient to convey fully the meaning of a term. However, as noted earlier in discussing Examples 11 and 12, combining the use-in-a-sentence partial-definition form with some of the other definition forms I have described can contribute to a fuller understanding of the meaning of a term.

3. Three basic actions that definers perform: reporting a meaning, stipulating a meaning, and advocating a meaning that incorporates a position

The *form* of a definition is one basic dimension of defining. A second basic dimension is the *action* the definer is performing when offering a meaning of

a term. When the definition's form and content are combined with the action, the result is part of an act of human communication.

There are three basic definitional actions: (1) the definer's *reporting* what the definer claims to be a meaning, (2) the definer's *stipulating* a meaning, and (3) the definer's *advocating* a particular meaning that incorporates a *position* on an issue. A definition such as Example 4, an equivalent-expression definition of 'argue', can be used to introduce the distinctions among these three actions.

Example 18 uses Example 4 in a reporting action, Example 19 uses it in a stipulating action, and Example 20 uses it in a positional action. The exact same words (Example 4) are used as the definition in all three contexts, but a different action is being performed in each case.

E18 *On the basis of my experience communicating with critical thinking experts, I report that the following definition states what the experts generally mean by 'argue' in the field of critical thinking: 'To argue in support of a conclusion' is 'to attempt to justify it'.* (*reporting* ameaning)

E19 *As the instructor of this critical thinking course in this institution, I stipulate that in this course we shall mean the following by the word 'argue': 'To argue in support of a conclusion' is 'to attempt to justify it'.* (*stipulating* a meaning)

E20 *As long-time members of this department, we advocate the following definition of 'argue' for use in the critical thinking course we are developing: 'To argue in support of a conclusion' is 'to attempt to justify it.' We believe that this sense of 'argue' is the appropriate one for a course in critical thinking, because* (their position) *the major concern in a critical thinking course is how to tell whether the conclusion of an argument is justified. (advocating* a particular meaning that incorporates a *position*)

3.1 Reporting a meaning

In reporting a meaning, the reporter (the definer) claims that the reported meaning is a meaning of the term.[5] The definer in Example 18 claims the meaning in Example 4 to be a meaning of the term 'argue'. Such a report can be true or false, and thus requires critical thinking (including inference to best explanation, as well as observation and other data gathering) to judge its acceptability.

[5] By "a meaning" I mean a way the term has been used.

Note that Example 18 is a special case of reporting a meaning. It is also reporting *the* meaning held by a certain group of people. So it requires more information for its support than simply reporting *a* meaning.

The definition that results from reporting a (or the) meaning shall here be called a "*reportive* definition" a term suggested by David Hitchcock (personal communication).[6] If I used the label '*reported* definition' instead of '*reportive* definition', then according to the ordinary meaning of '*reported*', a *reported* definition could be a definition that the definer tells us about (reports) but does not claim to be a meaning of a term. This means that it would not necessarily be a product that the reporter (the definer) claims to be a (or the) meaning. I stipulate that a 'reportive definition' is one in which the definer claims that the meaning reported is a (or the) meaning of the term.

Although ordinarily we report a meaning that is widely used or at least used by a group, a specific person's meaning could be claimed in a reportive definition, as in Example 21:

E21 *By 'silly', she means good.*

3.2 Stipulating a meaning

Stipulating a meaning of a term is deeming that the meaning given is what the term shall be taken to mean in a given situation. Grammatically, the definer expresses the stipulation in the imperative mood, rather than the indicative mood. A stipulation of a meaning is neither true nor false.

In stipulating a meaning, a definer assumes that she or he has the right to determine what the term shall mean in the situation. As author, I have the right to stipulate the meaning of 'reportive' in this chapter. If the would-be stipulator does not have the right, then the stipulation fails, and the definition ordinarily would be considered a positional definition that incorporates a position on an issue (see next section), if the author desires to perform that action. A definer can choose both actions if the definer does have the right to stipulate. I treat my definition of 'reportive' not only as a stipulative definition, but also as a positional definition, because I advocate the theory of, and approach to, definition in which it is embedded.

In 2006, the International Astronomical Union reached a decision about Pluto that was implied by the following apparently stipulative classification definition of 'planet' (International Astronomical Union, 2006):

[6] Something like it is called "lexical definition" or "descriptive definition" by some other authors. I do not feel that these names are sufficiently descriptive of what this type of definition does.

E22 *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.*

An implication of this apparently stipulative definition is that Pluto is not a planet, because it does not meet criterion (c). There is a nearby large mass called Eris.

Stipulating a meaning as part of a theory is a common occurrence. The International Astronomical Union, I suspect, has a right to stipulate a definition of a key term ('planet') that plays an important role in a theory it is advancing, but in this case the extent of this right, or its existence at all, is a matter of some controversy.

Former NASA scientist Phil Metzger provided conflicting usage rejecting the apparent stipulation: "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). So, given this description of the situation, it is not clear that the International Astronomical Union has the authority to stipulate the meaning for 'planet' in Example 22. If it does not have the right, the definition cannot be considered a stipulative definition, and in this case would be considered a positional and reportive definition that conflicts with Metzger's positional and reportive definition, and so must be defended by critical thinking evidence and argument.

3.3 Advocating a meaning of a term incorporating a position on an issue (positional definition)

Sometimes definers advocate a meaning for a term that incorporates a position on an issue. Scheffler (1960) has given this topic a thorough treatment under the label, "programmatic definition". I will use the topics of segregation and marriage to exemplify definitions that take a position.

3.3.1 Segregation

School segregation was judged unconstitutional (but was not defined) by the United States Supreme Court (1954). Since it was not defined, it was too vague to provide specific guidance to a school system, which was needed. Then a possible result was that a superintendent in a large school system would propose to the governing board the following equivalent-expression positional definition of 'segregated':

E23 *To say 'a school is segregated' is to say 'it has a population more than 80% of which is of a given minority race.*

Example 23 advocates the position that a school with more than 80% of its students of a given minority race, but not a school with 80% or fewer of its students of a minority race, is in violation of the segregation law. Thus it is a definition that expresses a position on an issue. Argument is needed to support that position in the ensuing discussion.

A desirable condition for success of a positional definition is that the position being taken be a clear position, the clearer the better. A further condition for its success is that the position be justified. Critical thinking is called for in making this judgment.

3.3.2 Marriage

Here is a positional definition of 'marriage':

E24 *Marriage is a legal, committed union of a woman and a man.*

Inherent in this classification definition, assuming the 'is' is the 'is' of equality, when it was presented, was the position that two people of the same sex cannot and should not be married, currently a controversial issue. In this case the position of the definer was opposition to same-sex marriage. So it was a positional definition.

Example 24 was also a reportive definition because the definer claimed that this was a common meaning of the word 'marriage', which it was. The definition of 'marriage' in Example 24 thus is another instance of a definer's performing more than one definitional action with the same definition, in this case, positional and reportive.

4. A glimpse of the content dimension: equivocation and impact equivocation with the term, 'reliability'

Because words in virtually any subject matter or area of interest are subject to definition, and all definitions have content, any fully-exemplified discussion of definition *content* would be huge in scope. So, at least to give the flavor of dealing with a content issue, I shall present one example, which deals with the ambiguity of a term, 'reliability', and its possible exploitation.

Exploitation of the ambiguity of a term is equivocation and is a significant critical thinking concern. When such equivocation is inadvertent, I call it "impact equivocation", because it has the impact of equivocation, though it is unintentional. Equivocation is a topic within the area of the third dimension of definition, content.

In what follows, I shall describe an occurrence of impact equivocation, explain why I think it occurred, and hold that such impact equivocation occurrences are likely to happen often if the field of psychometrics retains its meaning of 'reliability', given the ordinary-language meaning of 'reliability'.

Impact equivocation faced me when, inquiring of a school principal about the *validity* of the academic aptitude test taken by my then 5th-grade son, I was told that the test was quite valid because it had a "reliability" of 0.94. This rating was thought by the principal to be a high *validity* rating. This was a case of impact equivocation. The principal believed that this "reliability" meant *validity*, which it did not.

The psychometric definition of 'reliability' does not specify anything about the quality of a performance; it only indicates consistency and patterns of consistency. Psychometric 'reliability' is defined as follows in the fourth edition of *Educational Measurement* (Haertel, 2006, p.65): Reliability is "concerned solely with how the scores resulting from a measurement procedure would be expected to vary across replications of that procedure". In simpler terms, 'reliability' in psychometrics basically means 'consistency'.

On the other hand, the ordinary meaning of 'reliability' incorporates consistency, but also requires good quality performance. Here are the two definitions of 'reliability' in *Oxforddictionaries.com* (accessed September 8, 2017):

1. The quality of being trustworthy or of performing consistently well.
2. The degree to which the result of a measurement, calculation, or specification can be depended on to be accurate.

Here is the definition of 'reliability' in *Dictionary.com* (accessed August 22, 2017):

> the ability to be relied on or depended on, as for accuracy, honesty, or achievement.

These dictionary definitions of 'reliability' are in accord with the ordinary meaning of 'reliability': 'dependability in getting things right'; more briefly, 'consistency plus quality'.

Furthermore, correlations of aptitude tests with later grades or other indicators of success (validity correlations) are only "modest" (Thorndike, 1971; Linn, 1982, p. 287, two major leaders in psychometrics over the years). For example, an analysis of the validity of the *Graduate Record Exam* (GRE) in predicting graduate school success found correlations of .30 to .45 between the GRE and both first year and overall graduate GPA. Correlations with faculty ratings ranged from .35 to .50 (Kunzel and Hazlett, 2001). Because validity correlations are generally "modest", and because the correlation of 0.94 on my son's test was called "reliability" in a psychometric publication, the 0.94 correlation clearly was not a validity correlation.

So given that psychometric reliability does not imply quality, which an inference to validity would require; given that ordinary reliability does

require good quality; and given that the correlations for validity run much lower than the 0.94 that was reported, the principal's reporting the 0.94 as indicating validity depended on a shift from the psychometric meaning of 'reliability' to the ordinary meaning of 'reliability'. So the principal was impact equivocating. I say "impact equivocating" rather than "equivocating" because it appeared that the principal did not realize that she was not answering my question about validity.

In view of the widespread ordinary meaning of 'reliability', I suggest that the field of psychometrics consider changing the label 'reliability' in their vocabulary to 'consistency' in order to minimize such impact equivocations. The ordinary-language meaning of 'reliability' is not likely to change.

This suggestion and accompanying discussion fit within the content dimension of definition. The meanings discussed here and their interaction are matters of content.

5. Summary: A three-dimensional theory of definition, encompassing form, action, and content

A variety of possible forms and variations thereof are available for defining terms, *form* being a first dimension of definition. Three different *actions*, reporting, stipulating, and advocating a position, comprise the second dimension of defining, *action*. And the broad area of *content* provides the third basic dimension of definition. In this chapter I have focused on the two dimensions, form and action, and provided one case of attention to content, a concern about equivocation.

To the extent possible, a definition should be clear, brief, efficient, informative, responsive to background information, and easy to remember and understand. It should be at an appropriate level of sophistication and difficulty for the situation. It should employ an appropriate form and have a reasonable amount of vagueness and specificity. Because so much depends on the situation, and because these general criteria overlap to some extent, informed cautious judgment is required.

The maker of a definition should be flexible in selecting an appropriate form for defining the term, given the situation. The *classification* form is used often, because it offers completeness in a simple structure, specifying a set of necessary and jointly sufficient conditions for the use of the term being defined. But it has the disadvantages of needing the term being defined to be a noun, or be convertible into a noun, a process which is not always easy to perform, leading on occasion to the use of the rather broad and often uninformative general class, *quality*. Furthermore classification definition generally lacks the helpful concreteness of some of the other forms of definition.

The *equivalent-expression* form puts the term to be defined in a larger expression, which is equated with another expression. It is often easier to construct than a classification definition, and usually provides sufficient coverage of the meaning, although it does not provide the clear necessary-and-sufficient boundaries of a classification definition.

The *range* form has the advantage of making vagueness quite explicit, a characteristic that we should acknowledge when it exists. *Synonym* and *antonym* definitions provide quick equivalence and the opposite when available, but are often overly simple. The *extended-synonym* definition provides more detail in the defining part of the definition than a pure synonym definition. Although it does not provide the precision of a classification definition, it can be quite useful, especially for terms that seem not to have exact equivalents.

The *operational* form provides a connection among the meaning of a term, a test, and a test result. Strict operational definition allows no exceptions in application, and is not generally suited to defining human characteristics. Loose-form operational definition loosens the connection among its elements with the use of such terms as 'generally' and 'probably' and is better suited for use when discussing human characteristics.

While *partial definitions*, such as example, non-example, borderline case, and the use-in-a-sentence form, are not full-blown definitions, they are often useful and can sometimes be sufficient to define a term. They can also be helpful as supplements to other forms of definition to provide better understanding of a term.

A definition in a form but not yet offered in an action is inert. The action of the definer transforms an inert definition into part of an act of human communication. The three major definer actions are: (1) reporting a meaning that the definer claims to be a meaning, (2) stipulating a meaning that the definer deems shall be the meaning of the term in some type of circumstance, and (3) advocating a meaning that incorporates a position on an issue. The results of these actions are reportive, stipulative, and positional definitions.

The result for the first action, reporting, can at least in part be judged by critical thinking criteria, including truth. The second action, stipulating a meaning, can be judged by its convenience in dealing with the situation, but not for its correctness, which in pure examples it is not claimed to possess. It is stated in the imperative mood. Stipulating can only be successfully done by someone who has the right to stipulate in the situation. Positional definitions are successful in part to the extent that the position they advocate is clear, and even more successful if their positions are justified. Critical thinking is relevant here. Care and sensitivity to the situation are crucial throughout.

Because many crucial terms have more than one meaning, there is often danger of equivocation and impact equivocation for which we must be on guard. The example used here is 'reliability'. I thus give some attention to the content dimension, which, because of its immensity, must be treated elsewhere, at greater length.

Language and its meanings are crucial aspects of critical thinking. Defining terms cannot be neglected. I hope that the ideas about definition in this chapter will contribute to more critical thinking.

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