

Ayn Rand on Concepts
Another Approach to Abstraction, Essences, and Kinds

Allan Gotthelf
Department of History and Philosophy of Science
University of Pittsburgh

Abstract

The following paper was prepared for another occasion. In my session I intend to summarize key aspects of it that relate to some of the issues of our conference. Although issues concerning (natural) kinds and their essences have long been thought to be primarily *metaphysical*, the work of some of our conference's participants suggests (if only implicitly) that an understanding of the nature of kinds requires a theory of the nature of *concepts*, one which could provide norms governing their formation and use. I support this suggestion, elaborating on the sort of theory required, and argue that such a theory is already available. It was developed over forty years ago by Ayn Rand, in work that is still little known among professional philosophers.

The paper presents an overview of Rand's theory of concepts and essences. In the session I'll highlight the theory's most radical aspects: (i) its account of *abstraction* as "measurement-omission," an account which is not vulnerable to the familiar objections to abstractionism; (ii) Rand's view that *essences* are "epistemological," which allows her to accommodate changes in definition as knowledge grows; and (iii) her thesis that concepts and essences (and kinds) are "neither *intrinsic* nor *subjective* but *objective*." At the heart of this theory is an analysis of similarity in terms of *commensurability*, and an account of how this relation grounds our *integration* of similar particulars into a concept. Rand shares the common view that concept-formation (beyond the simplest level at least) also involves a grasp of common causes underlying many other characteristics. She insists, however, that there is no place in metaphysics per se for a concept of essence: a feature is designated as *essential* insofar as it plays a certain "unit-economizing" role by condensing of our knowledge about the individuals grasped via a concept. This does not, as I'll explain, make an essence subjective or merely pragmatic. Concepts and essences depend, as I say in the paper, "in part on *reality* (for instance, mind-independent commensurability and causal relationships) and in part on *the requirements of a conceptual consciousness* (for instance, the need to integrate via measurement-omission and the need of unit-economy)." Rand designates this status with the term "objective", in opposition to "intrinsic" (in reality independent of consciousness) and "subjective" (in consciousness independent of reality). I will elaborate on this conception of *objectivity*, discussing its relation to the goals for the sake of which knowledge (scientific and otherwise) is sought, and its application to the issue of kinds.

Ayn Rand on Concepts
Another Approach to Abstraction and Essences

Allan Gotthelf

1. Introduction: the issues

One notable change in the philosophical literature of the last twenty years has been the extent of attention to the nature of *concepts*. Although philosophers have been concerned with “conceptual analysis” and related issues since the early 20th century (and in fact since Kant), sustained attention to what concepts are, to their “possession conditions,” to their acquisition and—especially—to their epistemic role is quite recent. The problem of the nature of concepts is, of course, much more ancient, since the traditional problem of universals, today thought of as primarily a metaphysical issue, originally had as an important component the explanation of the universality of our *knowledge*. In this connection, I should say at the outset that I am using the term “concept” as Rand does, to refer not to an object of thought but to *the grasp of* objects of thought, where the grasp is of the appropriate unitary sort.¹

¹ Cf., for example, Peter Geach, *Mental Acts: Their Contents and their Objects* (London: Routledge & Kegan Paul, 1957), 18–19, who cites for the former “Russell’s use of [the term “concept”] in *The Principles of Mathematics* and again ... the use of it to translate Frege’s ‘*Begriff*’; Russell’s ‘concepts’ and Frege’s *Begriffe* were supposed to be objective entities, not belonging to a particular mind.” As Geach and others have pointed out, viewing concepts as “mental particulars,” and thus your concept of electricity as a distinct existent from mine, does not preclude speaking of you and me as having the *same* concept of electricity. “Mental particulars” is Jerry Fodor’s term (see, for example, *Concepts: Where Cognitive Science Went Wrong* [Oxford: Clarendon Press, 1998], 23); Rand speaks (with some reservation) of “mental entities” (see below, 00–00 with n. 29). Throughout this paper, I will follow Rand in putting terms for particular concepts in quotation marks.

A number of philosophers, including, for example, John McDowell in *Mind and World* (building especially on the writings of Wilfrid Sellars), have come to speak of the role of concepts in the justification of propositional knowledge.² Now, if one thought of perceptual awareness as pre-conceptual, and justification of perceptual judgments as non-inferential, one would need, it seems to me, a normative theory of concepts as the bridge. On this view, the proper application of the subject and predicate concepts in a judgment would be crucial to the justification of perceptual judgments employing those concepts. McDowell, of course, does not think such a picture is plausible, and views the relationship of concepts to perceptual experience quite differently. He speaks of the picture of concept-formation I have just pointed to as “a natural counterpart to the idea of the Given,” and argues that such a view would require the abstraction of “the right element in the presented multiplicity.” But, he writes, “[t]his abstractionist picture of the role of the Given in the formation of concepts has been trenchantly criticized, in a Wittgensteinian spirit, by P.T. Geach.”³

² John McDowell, *Mind and World* (Harvard University Press, 1994; hereafter *MW*); see, for example, Lecture I, sec. 2, where he refers to Sellars’ “Empiricism and the Philosophy of Mind” (hereafter *EPM*) in Wilfrid Sellars, *Science, Perception and Reality* (London: Routledge & Kegan Paul, 1963); see also *MW*’s index, s.v. Sellars, Wilfrid. Both McDowell and Sellars acknowledge the Kantian source of their views on this topic. Cf. McDowell, *MW*, 1. Sellars isn’t explicit in *EPM* about its Kantian roots, but, as McDowell observes at the opening of his 1997 Woodbridge Lectures, “In his seminal set of lectures, ‘Empiricism and the Philosophy of Mind,’ Wilfrid Sellars offers (among much else) the outlines of a deeply Kantian way of thinking about intentionality—about how thought and language are directed toward the world. Sellars describes *Science and Metaphysics: Variations on Kantian Themes* (London: Routledge, 1967), his major work of the next decade, as a sequel to “Empiricism and the Philosophy of Mind” (ibid., p. viii). The later work makes explicit the Kantian orientation of the earlier . . .” (McDowell, “Having the World in View: Sellars, Kant, and Intentionality,” *Journal of Philosophy* 95 [1998], 431).

³*MW*, 7, referring to Geach, *Mental Acts*, §§ 6–11.

The view that Geach criticizes under the name of “abstractionism” involves, however, a crude, Lockean notion of abstraction.⁴ Those of us disinclined to think that the “Given” is a myth should consider the possibility that a more sophisticated view of abstraction could provide just the bridge between pre-conceptual perceptual awareness and conceptually-structured perceptual judgments (and in general between perceptual awareness and conceptual knowledge) this is needed to put knowledge on a perceptual foundation.⁵

My own view is that this is in fact the case, and that Ayn Rand has produced just such an account of abstraction, as part of her theory of concept-formation. In this paper I will not be focused on the issue of propositional justification per se, though I will say something about norms for the formation of concepts and definitions. My aim is rather to sketch out Rand’s theory of concepts and their formation, including its more sophisticated, non-Lockean view of abstraction, sufficiently enough to show its appeal. I will take us through the theory of concepts and definitions, and the view of essences that goes with the theory of definitions. The paper will conclude with a brief account of the key normative

⁴ "I shall use 'abstractionism' as a name for the doctrine that a concept is acquired by a process of singling out in attention some one feature given in direct experience—*abstracting* it—and ignoring the other features simultaneously given—*abstracting from* them." (Geach, *Mental Acts*, 18.) Compare the accounts of *abstraction* and the coming to have a general idea in John Locke, *An Essay Concerning Human Understanding*, ed. Peter H. Nidditch (Oxford: Clarendon Press, 1979), e.g., II.iii.7, II.xi.9.

⁵ Recent work in the philosophy of science has suggested that a proper theory of concepts is important as well to the understanding of the process of discovering and justifying scientific theories. See, for example, the work on “exploratory experimentation” by Friedrich Steinle and Richard Burian among others. A good place to start is Steinle’s “Concept Formation and the Limits of Justification: ‘Discovering’ the Two Electricities,” in *Revisiting Discovery and Justification: Historical and Philosophical Perspectives on the Context Distinction*, ed. Jutta Schickore and Friedrich Steinle (Berlin: Springer Verlag, for Max-Planck-Institut für Wissenschaftsgeschichte, 2006), 183–95. (Thanks to Dick Burian for bringing work on this topic to my attention.) An understanding of the role of concept-formation in the reaching and justification of both propositional judgments and scientific theories helps one in seeing the unified epistemological character of issues (and work) that tend today to be divided among philosophy of mind, epistemology, and philosophy of science.

concept in Rand's epistemology—*objectivity*—the concept which provides the bridge between Rand's theory of concepts and her views on issues of justification.

Rand (1905–82) presented her theory of concepts in a monograph titled *Introduction to Objectivist Epistemology* (hereafter *ITOE*). It was first published in installments in 1966–67, then as a single volume later in 1967. An expanded edition, including edited transcripts of portions of several workshops on *ITOE* she held in 1969–71, was published posthumously in 1990.⁶ The heart of the theory itself she had developed in the late 1940s.⁷

The issue of concepts is for Rand primarily an *epistemic* issue. Concepts for her are *cognitive vehicles*, and more, are themselves cognitive grasps: they are *forms of awareness of* an indefinite number of individuals, and an account of them will be a crucial part of a general theory of the nature *and means* of knowledge. They are best understood by contrast with *perceptual awareness*, on which, she holds, they are built.

Her theory of concepts thus depends on a theory of perception, and both theories depend on a key proposition of her metaphysics, pertaining to the general relation between consciousness and existence, between mind and world. This is the thesis which has often been called “metaphysical realism,” and which she calls *the primacy of existence*. It is the thesis that existence has metaphysical priority over consciousness: that things exist and are what they are independent of consciousness, and that consciousness is a faculty of *discovery*—it neither creates its objects nor contributes in any way to their constitution.

⁶ “Introduction to Objectivist Epistemology,” *The Objectivist*, July 1966–January 1967, reissued as a single volume by *The Objectivist* later in 1967. The monograph was reissued by Mentor Books in 1979 with a companion essay, “The Analytic-Synthetic Dichotomy,” by Leonard Peikoff (itself first published in *The Objectivist*, May–September 1967). The 1990 expanded second edition was edited by Harry Binswanger and Leonard Peikoff, and was published by Meridian Books. All citations herein are from the 1990 edition. Peikoff's *Objectivism: the Philosophy of Ayn Rand* (New York: Dutton, 1991; hereafter *OPAR*), esp. chs. 3–4, is also an important resource for Rand's theory of concepts.

⁷ *ITOE*, 307.

Consciousness, as Rand has put it, is *metaphysically passive*. It is, however, she says, *epistemologically active*.

“Consciousness, as a state of awareness,” Rand writes, “is not a passive state, but an active process that consists of two essentials: differentiation and integration.”⁸ This is true, she holds, at all levels of awareness: sensation,⁹ perception, conceptual knowledge. But at each of these levels, consciousness is directed outward, at objects that have an existence and a nature independent of that act of consciousness.

Perception is for Rand a *distinct* form of awareness, different from both sensation and conceptual awareness. It is a direct awareness of persisting things, of entities, discriminated from each other and from their backgrounds. The integration of sensory data into *perceptual* awareness, Rand holds, is done automatically by the brain and nervous system. Concepts are not required for perceptual awareness as such (though once acquired on the basis of prior perception, they may of course facilitate perceptual recognition).

There are various features of Rand’s account of perception that may need more explanation and defense than can be given here. First, perceptual awareness is a form of awareness. Perception is the product of a causal interaction between perceiver and independent entity (with its attributes), but this product is irreducibly a state of awareness of the independent entity (not to be analyzed, for example, functionally or information-theoretically) and as such is a form of knowledge, a form of cognitive contact with the world. But—secondly—it is a non-propositional form of awareness. Rand held that

⁸ *ITOE*, 5.

⁹ Rand characterizes a sensation as “produced by the automatic reaction of a sense organ to a stimulus from the outside world; it lasts for the duration of the immediate moment, as long as the stimulus lasts and no longer.” (*The Virtue of Selfishness* [New York: NAL, 1965 (cloth edn.)], 9). She views it as a scientific, not philosophical, question whether human beings pass through a distinct sensory level of awareness prior to perception (as here explained).

philosophers often confuse the character of the content of perceptual awareness with the character of our (inevitably conceptual) description of the content of perceptual awareness. Perception is not an awareness *that* [say] this ball is red, nor of a ball *as red* [which is to classify the perceived attribute], but is rather [so far as one can describe a non-conceptual awareness conceptually] an awareness *of* the red ball, as discriminated from other objects in one's field of view and noticed perceptually as *different* from, say, the blue ball next to it.

Thirdly, such awarenesses, Rand says, are unerring: they are neither true nor false, they just *are*. But, as cases of awareness, they are, I have mentioned, forms of knowledge, which provide evidence, once one has reached the conceptual level, for or against perceptual *judgments* (for example, *that* this ball is red), which do have truth values. On Rand's view, for instance, perceptually grasped similarities and differences between perceived entities (and their attributes), though non-propositional, support the claims regarding those similarities and differences that are implicit in the formation of concepts such as "ball," "red," "blue," and of subsequent propositions such as "This ball is red." This understanding of perception, as I say, needs further elaboration and defense. Part of the elaboration is precisely the theory of concepts that I go on in this paper to present.)¹⁰

¹⁰ There is a detailed discussion of Rand's view of perception, comparing and contrasting it with various contemporary views, in Onkar Ghate, "Perceptual Awareness as the Epistemically Given," a paper presented to a conference on "Concepts and Objectivity: Knowledge, Science, and Values," at the University of Pittsburgh, September 2006. The view is outlined in Peikoff, *OPAR*, 37–48. See also David Kelley, *The Evidence of the Senses: A Realist Theory of Perception* (Baton Rouge: Louisiana State University, 1986) which builds on Rand's theory of perception. Robert Efron's Rand-influenced "What is Perception?" (*Boston Studies in the Philosophy of Science* 4 [1966–68], 137–73) builds an account of perception similar to Rand's on a fascinating analysis of a case of visual object agnosia. Efron also discusses how attributes of consciousness are to be scientifically measured, and in that connection introduces the notion of "the specificity" of perceptual awareness, by reference to thresholds of perceptual discrimination. On perceptual awareness as a form of knowledge, compare Colin McGinn, *Knowledge and Reality: Selected Papers* (Oxford: Oxford University Press, 1999), ch. 1: "The Concept of Knowledge" (repr. from *Midwest Studies in*

Now, most animals are not able to survive by isolated sensory data alone; they need the perceptual awareness that their brain's automatic integration of sensory data provides. Likewise, human beings are not able to survive by perceptual awareness alone. In order to live, we need to *integrate perceptual data into concepts*, and these concepts into a vast body of hierarchically structured, higher-order concepts, thereby permitting a correspondingly vast body both of propositional knowledge and of conceptually based skills.

Philosophy 9 (1984), 529–54). On perception as non-representational and thus neither true nor false, see also, among others, Bill Brewer, "Perception and Content," *European Journal of Philosophy* 14 (2006), 165–81; Charles Travis, "The Silence of the Senses," *Mind* 113 (2004), 57–94, and of course J. L. Austin, *Sense and Sensibilia*, ed. G. J. Warnock, 2nd rev. edn. (Oxford: Oxford University Press, 1962), esp. 11. For discussion of the idea of non-propositional justification, see (e.g.) James Pryor, "There is Immediate Justification," *Contemporary Debates in Epistemology*, ed. Matthias Steup and Ernest Sosa (Blackwell, 2005), 181–202, and "Highlights of Recent Epistemology," *British Journal for the Philosophy of Science* 52 (2001), 107–8.

Central to Rand's view of perception is also her insistence that what we perceive—both entities and their characteristics—is particular. Universality, as we will see, is not for her a feature of the objects of awareness, but of the form in which, on the conceptual level, we are aware of particular objects. This distinction between the object and the form of perceptual awareness, properly understood, provides the basis for a one of Sellars' main arguments against the "given," as Gregory Salmieri has pointed out in an important paper, "Justification as an aspect of Conceptualization: How Rand's theory of concepts provides 'a new approach to epistemology'" (below, n. 00, though I quote here from an earlier version of Salmieri's paper, in which the relevant point is more self-contained). In *EPM* §3, Sellars remarks:

Now if we bear in mind that the point of the epistemological category of the given is, presumably, to explicate the idea that empirical knowledge rests on a "foundation" of non-inferential knowledge of matter of fact, we may well experience a feeling of surprise on noting that according to sense-datum theorists, it is *particulars* that are sensed. For what is *known*, even in non-inferential knowledge, is *facts* rather than particulars, items of the form *something's being thus-and-so* or *something's standing in a certain relation to something else*.

But Salmieri writes:

Notice that Sellars is contrasting *particulars* with *facts*, rather than with its proper foil universals. We're in a position to see why he is doing this. Sellars' facts are inherently universal. They are "items of the form *something's being so and so*", such "items" are propositions, propositions are built of concepts, and concepts are universal. Sellars' facts *have propositional* (i.e. conceptual/universal) *form, so they cannot be particulars*. Now certainly, at the conceptual level, our *knowledge* of facts has a propositional form, but it no more follows from this that the *facts themselves* have this form than it follows from the change in the way we taste wine when we get sick that the wine itself has changed. To think otherwise is to confuse the form of awareness with its object.

On this distinction between the form and the object of perception, see, in addition to Salmieri's paper, Gotthelf, *On Ayn Rand*, chs. 6 and 7, and Peikoff, *OPAR*, 44–55.

It is worth seeing in simple terms some of the ways, according to Rand, in which concepts vastly expand our cognitive power and thereby our ability to deal with reality. With this in mind we can ask what sort of mental entities, formed by what sort of process, make these cognitive achievements possible. The answers will shed light on why Rand called a monograph on her theory of concepts an introduction to her *epistemology*.¹¹

To start, concepts extend our cognitive reach well beyond perception, to things not directly accessible to the senses—via concepts, we can grasp, for instance, things (and properties) that are too distant in space from us, too large or small in size, too many in number, to be perceived. Concepts also allow us to grasp differences that are too subtle, and similarities that are too remote, to be grasped perceptually. They give us cognitive access, in short, to an enormous range of things, attributes, actions, relationships (and so forth) not directly available to perception. In fact, a developed system of concepts allows a *classification* of the things, attributes, actions, relationships (and so forth) in the world, grouping these myriad particulars into manageable cognitive units. And this classification allows us to organize and condense the vast amount of knowledge we acquire, according to the relevant subject matters and predicates; it is analogous, Rand says, to a complex file-folder system with extensive cross references. This makes possible, among other things, specialized study—by studying some members of a properly conceptualized group, Rand observes, we are able to learn about all members of the group, and thus to apply that

¹¹ Cf. *ITOE*, 1-3. In the next paragraph I draw on my presentation in *On Ayn Rand* (Belmont, CA: Wadsworth Publishing, 2000), 57. See also Peikoff, *OPAR*, 73–4.

knowledge to new individuals of that group which we encounter.¹² That is, concepts make possible induction,¹³ and thus science, and technology, and indeed all rational action.

The integration distinctive of concept-formation begins with multiple perceptual grasps of a small number of individuals (for example, a child's noticing of some tables similar to each other and different from some nearby chairs), and moves to an *open-end*¹⁴ grasp of all relevantly similar individuals, past, present and future (for example, a grasp of *all* tables, past, present, and future). Later concepts will be formed from earlier ones via wider integrations (for example, "furniture" from "table," "chair," "dresser") and narrower subdivisions (for example, "beagle" from "dog"), and combinations thereof (such as "female" from, say, "man," "dog," "horse," and concepts regarding reproductive role); and also via bodies of observation and theory that establish the existence of unobserved or unobservable particulars that need to be conceptualized (for example, "electron"), and in other ways that we will discuss (in the case of psychological concepts, for example). But the principle that the formation of a new concept is a move to a *single* grasp of all the relevantly similar particulars remains the same.

¹² As Gregory Salmieri and I write elsewhere: "The concept 'man,' for example, enables us to think and learn about all men (past, present and future) at once; and to call someone a man is to bring the whole of our knowledge about men (medical, psychological, philosophical, etc.) to bear on them" (Gregory Salmieri and Allan Gotthelf, "Ayn Rand," in *Dictionary of Modern American Philosophers*, ed. John J. Shook [London: Thoemmes Press, 2005], 1996; reprinted, with revisions as "Ayn Rand and Objectivism: An Overview," at <http://www.aynrandsociety.org/#Overview>.) Cf. *ITOE*, 27–8. On the file-folder metaphor, see *ITOE*, 66–7, 69.

¹³ This is a point that has also been stressed, to a greater or lesser degree, by "natural kind" theorists. See, for instance, Paul E. Griffiths, *What Emotions Really Are: The Problem of Psychological Categories* (Chicago: University of Chicago Press, 1997), ch. 7: "Natural Kinds and Theoretical Concepts;" and the exchange between Ian Hacking and Richard Boyd at The Twenty-Ninth Oberlin Colloquium in Philosophy, published in *Philosophical Studies* 61 (1991): I. Hacking, "A Tradition of Natural Kinds," 109–26; R. Boyd, "Realism, Anti-Foundationalism and the Enthusiasm for Natural Kinds," 127–48; I. Hacking, "On Boyd," 149–55. (See also n. 4 above.)

¹⁴ *ITOE*, 00–00. Rand typically uses "open-end" rather than "open-ended," perhaps because she has in mind a point that is more about the object (or content) of the grasp than about the grasp itself.

To understand this process, and the concepts that result, and the cognitive powers they make possible, we have to ask what is the nature of that integration. Indeed, says Rand, because concepts are *products of a certain kind of integration*, we won't understand the product—the *concept*—unless we understand the process—*concept-formation*. But, given the primacy of existence discussed above, to understand the process we will have to understand the *basis in reality* for the groupings that concepts ought to supply us with. Since conceptual groupings start from a grasp of *similarity* we need an understanding of the nature of similarity, and this is where we will start, contrasting Rand's distinctive account of similarity with those of traditional realism and nominalism. This will address the heart of her view of the metaphysical basis of concepts, from which we will be best able to see her distinctive theory both of the process by which concepts are formed, and the nature of a concept once formed. This will be discussed in Section II: *Nature, basis, and formation of concepts*.

The process of concept-formation is not complete, Rand maintains, without proper *definitions*, and such definitions must specify the *essential* distinguishing characteristic(s) within the conceiver's context of knowledge. Understanding Rand's view of definitions and essences (including their contextual character) is, then, crucial to understanding her theory of concept-formation and its implications for understanding the development both of human knowledge in general and of science in particular. Section III: *Definitions and essences* will provide an account of Rand's views on these matters.

Rand's theory of concepts has both descriptive and normative dimensions—the theory seeks to identify how concepts *are* formed, but also, where there is choice, how (and when) they *ought* to be formed. Although the descriptive dimension will be the focus of my

exposition of the basic theory in the next section, normative elements of the theory will be implicit. They will come to the fore in the third section's discussion of proper methods of definition, and in the identification of what characteristics are *essential*; and in the final section I look more directly, if briefly, at the normative dimension of the theory of concepts. Finally, the very character and basis of conceptual norms will point us towards Rand's general theory of *objectivity*. These matters will all be discussed in the fourth and final section: *Norms of conceptual activity*.

II

Nature, basis, and formation of concepts. Traditional realists have held that the basis of proper conceptual grouping is a mind-independent universal or abstract element—an identical Form or essence or property which the individuals of a group somehow share (or otherwise stand in the same relation to). Conceptual groups come ready-made, as it were.¹⁵ Similarity is *identity within difference*. On this view, a concept is essentially a retained intuitive gaze at, or grasp of, that identical element. The acquisition of that grasp (or reacquisition, in Plato's version of realism) might involve a complex process of dialectic, or even a scientific discovery of causes, but at its final stage is the successful direction of cognitive attention to that identical element.

Traditional nominalists have held that they can find no such mind-independent universal or abstract element, nor is any such "universal" necessary to explain the

¹⁵ Such mind-independent kinds are often referred to as "natural kinds." although this terminology is sometimes used by those who do not subscribe to realism as here defined.

groupings required for knowledge of general truths. Reality is through and through particular and determinate. Conceptual groupings, most nominalists hold, are based on *resemblances*—primitive, unanalyzable similarities, which we select out arbitrarily or pragmatically from the myriad of such similarities we find in experience. A concept for nominalism is either the *word* we select to represent the class of resembling individuals (or a capacity to use such a word), or some sort of mental image or images (or construct thereof) of a typical (or prototypical) instance, or small set of instances, with which we associate the word. The formation of such a concept is often viewed as a psychological and not a philosophical matter. Of philosophical significance, in that case, is only the fact that the selection of which resemblance-classes will serve as cognitive units is arbitrary or merely pragmatic.

Rand agrees with realists that there is a basis in reality determining conceptual groupings, but disagrees that this basis is any sort of mind-independent universal or abstract element. Similarity is not, for her, shared identity within difference. She agrees with nominalists that reality is irreducibly particular and determinate, and that members of a proper conceptual grouping might vary in every particular respect. But she rejects their view that similarity is unanalyzable and that conceptual groupings are either arbitrary or merely pragmatic. In a given context, how groupings are to be made is, in most cases, mandatory, if our knowledge is to be retained, organized, and systematically expanded.¹⁶

Rand begins by observing that we can detect similarity only against a background of difference. For example, we can detect that two tables are similar to each other only against the background of other, different objects, such as chairs. Or, to take another

¹⁶ This thesis of hers will be explained in sec. IV below.

example, once a child has reached the stage of isolating colors, two shades of blue will be experienced as different, until put up against something red, in contrast to which the blue shades can now be experienced as similar. Some philosophers have claimed that similarity cannot be grasped without concepts (nor in particular without the concept “similarity”). This is patently untrue: similarities and differences at the first level of conceptualization are perceived directly, and at very early ages.¹⁷

In looking back and forth from one table to another and from each to the chairs, the child is not, Rand holds, responding to some identical, *universal* element shared by the tables. Each table has a particular shape (for instance) that (in most cases) will differ detectably from table to table. Likewise, there’s no identical “blueness” shared by (for example) the light blue and royal blue shirts. But the similarity experienced is not an unanalyzable primitive either, she says. Rather, the similarity of the tables relative to the chairs, or the blues relative to the red, is a matter of *lesser difference* along some quantitative, or more-and-less, axis.¹⁸ The tables experienced as similar are perceived to be less different from each other than either is from the chairs, the blues to be less different from each other than either is from the red.

The similar items must therefore share with the contrasting items a *commensurable* characteristic, “such as shape in the case of tables, or hue in the case of colors.”¹⁹ In connection with its role in concept-formation, Rand calls this commensurable

¹⁷ Cf. David Kelley and Janet Krueger, “The Psychology of Abstraction,” *Journal for the Theory of Social Behaviour* 14 (1984), 43-67. Of course, as will be made clear shortly, the grasp of similarities at a more abstract level does require concepts (including the concept “similarity”).

¹⁸ The explanation of similarity by reference to “lesser difference” is clearly implied in *ITOE*, but this terminology may have first been used in print to explain Rand’s view of similarity in Kelley, “A Theory of Abstraction,” *Cognition and Brain Theory* 7 (1984), 329-57.

¹⁹ *ITOE*, 15.

characteristic “the Conceptual Common Denominator” (and abbreviates it as “CCD,” as I will).

The grasp of similarity, Rand thus holds, is a matter of implicit *measurement*, a relating of existents along an axis of quantitative, or more-and-less, comparison: “The element of *similarity* is crucially involved in the formation of every concept; similarity, in this context, is the relationship between two or more existents which possess the same characteristic(s), but in different measure or degree.”²⁰

²⁰ *ITOE*, 13. See also 143–7. This essential condition on similarity applies as well, Rand argues, to the similarity that is the basis of higher-level concepts, although there the similarity must be grasped conceptually. For instance, tables, chairs, beds, etc.—*furniture*—will not be experienced as similar, prior to the formation of the concepts of “table,” “chair,” “bed”; they are too different for their similarity, against the background say of walls, floors, and windows, to be noticed perceptually. One would need first to form the lower-level concepts. But once one is positioned to notice the similarity of pieces of furniture, one can do so only against the background of other parts of a human habitation, that vary in quantity or degree from them along one or more commensurable characteristics, one or more axes, such that the pieces of furniture are less different from each other than they are from the contrasting items. The fact that, as in this case, the grasp of the similarities that underlie the formation of a concept typically depends on the possession and use of other, already-formed concepts is the basis of Rand’s thesis that concepts are *hierarchical*—that, for the most part, they must be formed in a certain order. See below, 00-00.

The similarities involved in higher order theoretical concepts, such as, for example, the concept “nominalism,” will be graspable only on the basis of substantial propositional knowledge, for example, about the problem of universals, about theories thereof, and about the fundamentality of that issue to epistemology, all held in terms of prior concepts. As a concept of a certain range of theories produced by a human consciousness, “nominalism” can be fully understood, on Rand’s theory, only against the background of her general account of “concepts of consciousness” (*ITOE*, ch. 4); but we can at least note what the “Conceptual Common Denominator” (CCD) here would be, and what range of measurements along that CCD is given to the distinguishing characteristic. Thus, she would have us note that the grasp of the similarity across the range of particular nominalist theories (for example, Hobbes’ or Hume’s or Wittgenstein’s) requires identifying (conceptually) these theories as varying in quantity or degree along at least one commensurable characteristic shared by these theories such that the theories are less different from each other along that axis or axes than they are from (for example) the realist theories from which they are differentiated when we form the concept of “nominalism.” This CCD might be, for instance, *degree of resemblance of particulars in virtue of which they are (or are to be) grouped*. The range across that CCD is from zero degree of resemblance (in the case of wholly arbitrary Hobbesian nominalism) to multiple partial resemblances each shared by only some of the particulars (in the case of Wittgenstein’s family-resemblance nominalism) to whole resemblances (in the case of Hume’s resemblance-nominalism) to the sameness of qualitatively-indistinguishable numerically distinct essences (in the case of one interpretation of Aristotelian realism) to the sameness of numerically one and the same essence (in the case of another interpretation of Aristotelian realism). It is no accident, then, that we often view such theories as lying on a continuum, sometimes speaking of one theory of universals (e.g., Aristotle’s) as *between* two others (e.g., nominalism and Platonic realism).

Each of the concepts of the actions and products of consciousness involved in there being such a thing as nominalist theory, and each of the concepts of the particulars that are the object or content of those actions

This reference to “the same characteristic” is not an endorsement of realism. Characteristics exist only as particular and determinate. Their sameness is real but is not itself a particular property or attribute, just as those who speak of *determinates* and *determinables* might insist that the ultramarine and the blueness of something are not two properties or attributes of it, standing side-by-side, as it were, in the entity, even if (and indeed precisely because) the ultramarine is a determinate form of blueness. In the process of forming the concept *blue*, starting from the light blue and the royal blue shirt against the background of, say, a red one, what one is aware of are the two noticeably different but similar hues, standing in a relation to each other *along an axis that allows one to relate them as each more or less close to the other*. It is the commensurability of the two blue hues that is perceived – their “sameness” (in Rand’s sense) is something graspable only abstractly and subsequent to the concept-forming process. The basis in reality for the formation of concepts, according to Rand, are these commensurability relationships across particular, determinate attributes.²¹

of consciousness, would likewise be formed from similarities analyzable in terms of commensurable characteristics possessed both by the particulars integrated by the concept and by the particulars from which those particulars are differentiated. (For discussion of some of the issues of this note, see *ITOE*, 215, 217–22.)

²¹ As this discussion suggests, Rand’s view of the similarity relationship (and of the relationships both of lower-level concepts to particulars and of higher-level concepts to lower-level ones) has some parallels with (and differences from) the notion of similarity implied by the traditional accounts of the *determinable-determinate* relationship; but those parallels are best examined after Rand’s conception of *objectivity* is explained, and so I will not discuss them in this paper.

In thinking both of Rand’s account of the relation of lower level concepts to particulars and of higher-level concepts to lower-level ones, and of the use she makes of this account to explain the abstractness of concepts, some readers will benefit (as I have) from a comparison of her views with Aristotle’s conception of the similarity (or, as Aristotle says, “sameness”) involved in things under the same *genos* (which I will translate “kind”). In the opening lines of *History of Animals* (*HA*), where he is laying down ways in which the parts of animals can be the same or differ, Aristotle speaks first of *sameness in form*, and then of *sameness in kind*. In introducing the latter, he says of animal parts (and of the animals that possess them) that “others, while the same, differ with respect to the more and the less” (*HA* 1.1 486a21–3). At *Parts of Animals* 1.4 644a14–20, he says that “. . . those animals that differ by degree and the more and the less have been brought together under one kind . . . I mean, for example, that bird differs from bird by the more or by degree

How, then, is the perceptual (or prior conceptual) awareness of a small number of similars integrated into an “open-end” concept, one that subsumes all relevantly similar instances, past, present, and future? By a process, Rand says of *measurement-omission*. She introduces this idea as follows:

Let us now examine the process of forming the simplest concept, the concept of a single attribute (chronologically, this is not the first concept that a child would grasp; but it is the simplest one epistemologically)—for instance, the concept “*length*.” If a child considers a match, a pencil and a stick, he observes that length is the attribute they have in common, but their specific lengths differ. The *difference is one of measurement*. In order to form the concept “length,” the child’s mind retains the attribute and omits its particular measurements. Or, more precisely, if the process were identified in words, it would consist of the following: “Length must exist in *some* quantity, but may exist in *any* quantity. I shall identify as ‘length’ that attribute of any existent possessing it which can be quantitatively related to a unit of length, without specifying the quantity.”

(for one has long feathers, another short feathers) . . .” (tr. James G. Lennox, *Aristotle On the Parts of Animals I-IV* [Oxford: Clarendon Press, 2001]). Aristotle’s non-realist but non-subjectivist account of the unity of the instances under a kind is instructive here. (See, on the Aristotle-Rand relationship, my “Ayn Rand as Aristotelian: Concepts and Essences,” unpublished paper presented as part of a program on “Ayn Rand as Aristotelian” held by The Ayn Rand Society at the APA Eastern Division meetings in 2005; and for a fuller discussion of Aristotle’s views on the type of unity possessed by a *genos*, Gregory Salmieri, “Aristotle and the Problem of Concepts,” dissertation in progress at the University of Pittsburgh. On these Aristotelian topics, including difference in the more and the less, see also James Lennox’s “Kinds, Forms of Kinds, and the More and the Less in Aristotle’s Biology,” in *Philosophical Issues in Aristotle’s Biology*, ed. A. Gotthelf and J. G. Lennox [Cambridge: Cambridge University Press, 1987], 339-59.)

The same principle directs the process of forming concepts of entities—for instance, the concept “*table*.” The child’s mind isolates two or more tables from other objects by focusing on their distinctive characteristic: their shape. He observes that their shapes vary, but have one characteristic in common: a flat level surface and support(s). He forms the concept “table” by retaining that characteristic and omitting *all* particular measurements, not only the measurements of the shape, but of all the other characteristics of tables (many of which he is not aware of at the time).²²

Concepts, for Rand, are thus open-end, not only in that they include in their reference all relevantly similar instances, past, present and future, but also in that (contrary, say, to the view of Kant or the logical positivists) they include in their content all of the characteristics of their instances, known or unknown. I’ll discuss this feature of her theory further in the next section.

After indicating what would be explicitly retained and what would be omitted in the context of an adult’s grasp of the concept *table* (including how “the utilitarian

²² *ITOE*, 11–12. We may think of this reference to omitting measurements of characteristics of which he is not yet aware, as a standing order that, as one discovers new characteristics shared, in different measure or degree, by tables, one will omit the measurements of these as well. To illustrate, let us imagine a child who has recently formed the concept of *table* by retaining the range of table shapes while omitting the measurements within that range. Rand is holding that, when he discovers that tables have a distinctive use, namely to support objects of one sort or another, that newly discovered characteristic can be expected to take its place in the concept of *table* alongside the shape as one of the retained characteristics distinctive to tables, with the measurements omitted of the particular variations along this range of use. Rand’s formulation is a way of emphasizing that inherent in integrating mind-independent units into a concept is the expectation that these existents will have numerous other characteristics one is as yet unaware of, which will come in varying measure or degree.

requirements of the table set certain limits on the omitted measurements”²³), Rand writes the very important paragraph:

Bear firmly in mind that the term “measurements omitted” does not mean, in this context, that measurements are regarded as non-existent; it means that *measurements exist, but are not specified*. That measurements *must* exist is an essential part of the process. The principle is: the relevant measurements must exist in *some* quantity, but may exist in any quantity.²⁴

This “some but any” principle needs to be carefully understood. Harry Binswanger, co-editor of the 2nd edition of *ITOE*, has observed, in lectures on Rand’s theory of concepts,²⁵ that it is crucial not to equate the process here described with the realist account of concept-formation. Rand is not saying that attention is to be directed away from the quantitative variation and to an identical “*length*” or “*table-shape*.” Measurement-omission is not an *insight* into a universal element. It is rather an *interrelating* of the commensurable determinate particulars. Measurement-omission, as Binswanger puts it, is *measurement-inclusion*. In retaining the attribute—length, or table-shape—one retains not some “universal” but a *range* along an *axis* of measurement. That is, one recognizes that the commensurability of the various lengths or table-shapes allows for many more particular lengths or table-shapes, indefinitely many along (the relevant portion of) that axis of measurement. It is precisely this grasp of the axis of measurement, and the relevant

²³ *ITOE*, 12.

²⁴ *ITOE*, 12.

²⁵ H. Binswanger, *Consciousness as Identification*, taped course (Irvine: Second Renaissance Books, 1989), Lecture 3.

range along it, with all its available points or slots, that open-ends the awareness to include *all* lengths (or table-shapes), past, present and future, and creates the concept.²⁶

Based on this account of concept-formation, Rand offers the following definition of a concept:

*A concept is a mental integration of two or more units possessing the same distinguishing characteristic(s), with their particular measurements omitted.*²⁷

The process of integrating the particulars into the concept—into, what I called earlier a retained unitary grasp—must be completed by attaching a word to the concept. She writes:

In order to be used as a single unit, the enormous sum integrated by a concept has to be given the form of a single, specific, *perceptual* concrete, which will differentiate it from all other concretes and from all other concepts. This is the function performed by language.²⁸

²⁶ Locke's famous question of what sets the boundaries of such ranges will be addressed in section IV of this paper. At the beginning level of concepts, the boundaries are set by the *perceived* similarities, which themselves are determined in part by the closeness of the relevant physical features and in part by our perceptual mechanisms.

²⁷ *ITOE*, 13. Various aspects of this definition are discussed in detail in the workshop transcripts, *ITOE*, 153–8. On the usefulness but yet the limitations of the term “mental entity” to capture the idea that a concept is a new mental existent, the persisting product of a mental process, see, in particular, *ITOE* 157–8.

²⁸ *ITOE*, 10. See also 19, 40, 163–75.

A concept, for Rand, is thus the product of a certain mental process: “The uniting involved is not a mere sum, but an *integration*, i.e., a blending of the units into a *single*, new *mental* entity which is used thereafter as a single unit of thought...”²⁹ It is a *relational* entity, inherently *of* the units—the existents integrated—which existents exist independent of that act of integration. And that act—a uniting via measurement-omission into a single, abstract mental unit—is something that only human beings can perform. The concept produced by that process is not an “image” or “copy” of a sensory “impression,” nor any sort of special percept. And, though it is a mental particular (even if inherently relational), it is a mental particular of a sort only human beings can form. Hume was thus wrong, Rand holds, to insist on “the ... proposition, *that the mind cannot form any notion of quantity or quality without forming a precise notion of degrees of each.*” For, in support of this proposition, he writes:

But 'tis evident at first sight, that the precise length of a line is not different nor distinguishable from the line itself, nor the precise degree of any quality from the quality. These ideas, therefore, admit no more of separation than they do of distinction and difference. They are consequently conjoined with each other in the conception; and the general idea of a line, notwithstanding all our abstractions and refinements, has *in its appearance in the mind a*

²⁹ *ITOE*, 10. On “mental entity,” see above, n. 27. Two people have *the same concept* (paradigmatically), I imagine Rand would say, when their concepts have the same content, i.e. integrate essentially the same sort of existents, notwithstanding the level of knowledge within which one distinguishes those existents from other existents (along a shared CCD) on the basis of the similarities and differences between those groups of existents. See, e.g., *ITOE*, 42–5, and below, n. 53.

precise degree of quantity and quality; however it may be made to represent others, which have different degrees of both.³⁰

Hume's argument here presupposes his general thesis, stated at the very opening of the *Treatise*, that "ideas" are "the faint images of [impressions] in thinking and reasoning,"³¹ and are not a more radically distinct sort of mental phenomenon.

But "'tis evident at first sight," Rand would insist, that this thesis is false, as is the claim that, in effect, we cannot separate in thought a line's being of "some length but any" from the precise length of that line. Surely, we are able to form the idea of lines (and other lengths) as being of some length but any, or as we might say, of being "x inches long." Of course there is for Rand no *object*, "being x inches long"—the object of the concept is all the particular, determinate lengths; but what makes possible our thought's having the latter sort of object is there being a new mental entity *by means of which* we can grasp those (indefinitely) many particulars. If Hume were right about the nature of the "ideas" with which we think, Rand

³⁰ David Hume, *A Treatise Concerning Human Nature*, ed. L. A. Selby-Bigge and P. H. Nidditch (Oxford: Clarendon Press, 1978), 1.1.7 ("Of Abstract Ideas"), 18-19. The italics in the several Hume quotations are all in the original text, except for "*its appearance in the mind*" here, which is my own emphasis.

³¹ Hume, *Treatise*, 1.1.1, p. 1. I take this premise to be behind the following argument "Now as 'tis impossible to form an idea of an object, that is possest of quantity and quality, and yet is possest of no precise degree of either; it follows, that there is an equal impossibility of forming an idea, that is not limited and confin'd in both these particulars." (1.1.7, 20)

maintains, *algebra* would be impossible,³² not to mention the endless discoveries of science and technology that our lives benefit from in so many ways.³³

Abstraction—the process of forming a general idea, a concept—is not for Rand simply a selective attention to “some one feature given in experience.”³⁴ Though concept-formation starts from the isolation of similar particulars, its heart is the *integration via measurement-omission* we have been discussing, the quantitative interrelating of indefinitely many particulars under a single mental entity, a concept. And this more sophisticated conception of abstraction, Rand would maintain, is not subject to the sorts of objections to the Lockean-like selective-attention theory that are presented by Geach.³⁵

In *ITOE* Rand shows how the theory I’ve outlined in this section applies to a wide range of sorts of concepts beyond the first level of concepts of things and of attributes we have already discussed. In chapter 3, for instance, she addresses “abstraction from abstractions,” that is, the process by which lower-level concepts are integrated and a wider

³² “The basic principle of concept-formation (which states that the omitted measurements must exist in *some* quantity, but may exist in *any* quantity) is the equivalent of the basic principle of algebra, which states that algebraic symbols must be given *some* numerical value, but may be given *any* value. In this sense and respect, perceptual awareness is the arithmetic, but *conceptual awareness is the algebra of cognition*. . .” (*ITOE*, 17).

³³ In the title essay of her *For the New Intellectual: The Philosophy of Ayn Rand* (New York: Random House, 1961), Rand remarks that “If it were possible for an animal to describe the content of his consciousness, the result would be a transcript of Hume’s philosophy. Hume’s conclusions would be the conclusions of a consciousness limited to the perceptual level of awareness, passively reacting to the experience of immediate concretes, with no capacity to form abstractions, to *integrate* perceptions into concepts . . .” (30).

³⁴ Above, n. 4.

³⁵ This thesis is developed in n. 45 below. As is well known, Berkeley (and Hume, following him), condemns Locke’s theory of abstraction for maintaining the existence of such things as “the general idea of a triangle, which is ‘neither oblique nor rectangle, neither equilateral, equicrural nor scalenon, but *all and none* of these at once’.” (Berkeley, *A Treatise Concerning the Principles of Human Knowledge*, ed. Jonathan Dancy [Oxford University Press, 1998], Introduction, §13 [quoting Locke from *Essay* 4.7.9, italics added by Berkeley]; cf. Hume, *Treatise*, 1.1.7, 17–18.) To put Rand’s view in these terms, one might say that for her the concept of “triangle” is a concept of triangles as being equilateral *or* isosceles *or* scalene. (This isn’t strictly correct, since the concept “triangle” is formed by differentiating triangles from [e.g.] squares and circles and other plane figures, along the axis of *number of sides*, and the measurements omitted when “three sides” is retained are a continuum of (among other things) side length and angle size. Nevertheless, offering the disjunctive picture in place of the self-contradictory “*all*” and the realist “*none*” is here a useful way of capturing the force of Rand’s “some but any” principle.)

concept formed (for instance, “furniture” from “table,” “chair,” “bed,” “dresser,” etc.), or a previously-formed concept is subdivided and one or more narrower concepts formed (for instance, “beagle,” “poodle,” “greyhound,” etc. from “dog”). She explains how measurement-omission is involved in the formation of these sorts of concepts as well.³⁶

The implication of Rand’s presentation in this chapter is that, for the most part, concepts must be formed in a certain *order*. Concepts are, as Rand puts it, *hierarchical*. Concepts are formed on the basis of grasped similarities along commensurable characteristics, and we have already seen in the case of the concept of “furniture,” the relevant similarities in the case of most concepts can be grasped only with the aid of already-formed concepts; we will see more evidence of this in a moment. The hierarchical character of concepts was already adumbrated in Rand’s discussion of lower-level concepts in chapter 2, when she observed that concepts of attributes (as well as of materials, motion, relationships, and so forth) can be formed only after some concepts for the entities they characterize have been formed.³⁷ This fact about our concepts—that they are hierarchical—is of great epistemological importance, according to Rand, because it leads to norms for the formation and validation both of concepts and of the propositions composed from them—and thereby leads to a distinctive conception of the discipline of

³⁶ “When concepts are integrated into a wider one, the new concept includes *all* the characteristics of its constituent units, but their distinguishing characteristics are regarded as omitted measurements, and one of their common characteristics becomes their distinguishing characteristic. When a concept is subdivided into narrower ones, its distinguishing characteristic is retained and is given a narrower range of specified measurements or is combined with an additional characteristic(s) to form the individual distinguishing characteristics of the new concepts.” (*ITOE*, Summary, 84; summarizing ch. 3: “Abstraction from Abstractions,” 19–28.)

³⁷ “It is only after he has grasped a number of concepts of entities that he can advance to the stage of abstracting attributes from entities and forming separate concepts of entities” (*ITOE*, 15, best read in its surrounding context, 15–17). On “furniture” see above, n. 20.

epistemology. It also has profound consequences in her metaethics (and in much else in her philosophical thought).³⁸

Rand's discussion in *ITOE* chapter 4, of "concepts of consciousness" (i.e., concepts of states, aspects, functions, products, and so forth of consciousness), illuminates the wide-ranging character of her theory of concept-formation as well as her thesis that concepts are hierarchical, and so is worth examining at some length. Though the methods and standards of measurement in the case of such concepts are somewhat different from those involved in conceptualizing material entities and their attributes, concepts of consciousness, she shows, *are* formed by a process of measurement-omission. This is made possible by the fact that phenomena of consciousness share commensurable attributes:

Two fundamental attributes are involved in every state, aspect or function of consciousness: content and action—the content of awareness, and the action of consciousness in regard to that content.

³⁸ Rand's presentation of this thesis is spread throughout *ITOE*: cf. its Index, s.v. Hierarchy. Along with *hierarchy*, Rand treats as a fundamental to concepts the fact that they are *contextual*, i.e., formed within a certain context of knowledge, and integrated to one's other concepts; her presentation of this thesis—one that must carefully be distinguished from various other theses in contemporary thought that go under that name—is also spread through *ITOE*; cf. Index, s.v. Context. One aspect of this complex thesis—viz., the role of context in producing objective definitions—is discussed in the next section of this paper. On *hierarchy* and *context*, and their place in Rand's epistemology, see also Peikoff's excellently systematized account in *OPAR*, ch. 4: "Objectivity." On the implications of these aspects of Rand's theory of concepts for the discipline of epistemology, see Gregory Salmieri, "Justification as an Aspect of Conceptualization: How Rand's Theory of Concepts Represents a New Direction in Epistemology," unpublished paper presented to the June 2007 Workshop on Normativity and Justification, sponsored by the University of Pittsburgh Fellowship for the Study of Objectivism, at Harvey Mudd College. For very brief accounts of the way the hierarchical nature of concepts bears on Rand's metaethics, see Gotthelf, *On Ayn Rand*, 22, 79–81, and Salmieri and Gotthelf, "Ayn Rand and Objectivism: An Overview" (above, n. 12). Rand first presented her view that the concept of "value" (and thus all ethical concepts) rests hierarchically on the concept of "life" in John Galt's speech in *Atlas Shrugged* (New York: Random House, 1957), 1012-13, repr. in *For the New Intellectual*, 147. Her fullest presentation is in "The Objectivist Ethics," the first chapter of *The Virtue of Selfishness* (above, n. 9).

These two attributes are the fundamental Conceptual Common Denominator of all concepts pertaining to consciousness . . .

In the realm of introspection, the concretes, the *units* which are integrated into a single concept, are the specific instances of a given psychological process.

The measurable attributes of a psychological process are its object or *content* and its *intensity*.³⁹

Rand's fascinating discussion of different measures both of content and of intensity (with respect to the various sorts of conscious phenomena) is too complex to summarize here. With respect to the intensity of a particular cognitive process, for instance, she speaks of the *scope* of the content and the *hierarchy* of concepts required to perform that process (taking into account the differing extent of knowledge required to possess concepts at various levels). In the case of "concepts pertaining to evaluation (including 'value,' 'emotion,' 'feeling,' 'desire,' etc.)," she speaks of a hierarchy of a different kind, and also of a form of measurement unique to concepts of evaluation, which she calls "teleological measurement." In general, phenomena of consciousness, she holds, are all of them particular and determinate, and exist along measurable axes. Forming concepts of consciousness thus also involves, in their distinctive ways, *measurement-omission*.⁴⁰

³⁹ *ITOE*, 29–31.

⁴⁰ See esp. *ITOE*, 38–9. The notion that conscious phenomena are subject to measurement of a sort (in a way that does not depend on any reducibility thesis), while anathema in some circles, is not an entirely unfamiliar to analytic philosophers. See, for example, the extensive contemporary discussion of the commensurability of *values*. See also the discussion by Robert Efron, in his Rand-influenced "What is Perception?" (above, n. 10), of how the specificity (or degree of determinateness) of perceptual awareness can be measured—and, in

She goes on in the chapter to discuss “concepts pertaining the *products* of psychological processes, such as ‘knowledge,’ ‘science,’ ‘idea,’ etc., and “a special sub-category of these, concepts of *method* [which] may be purely psychological (such as a method of using one’s consciousness) or it may involve a combination of psychological and physical actions (such as a method of drilling for oil).” She includes in this sub-category (because she views these disciplines as essentially normative) concepts for disciplines devoted to the discovery of methods, such as logic, epistemology, ethics, medicine, “and all the applied sciences (i.e., technology).” “The concepts of method,” she goes on to say “are the link to the vast and complex category of concepts that represents integrations of existential concepts with concepts of consciousness, a category that includes most of the concepts pertaining to man’s actions.” As examples, she cites “marriage,” “property,” “law,” and, later, “justice.” She then concludes the survey of concepts of consciousness with concepts of grammar, such as conjunctions.

The hierarchical character of concepts of consciousness is evident in the foregoing. Concepts of consciousness are formed by differentiating the actions (or reactions) of consciousness from their content, which requires concepts for “some aspect[s] of the external world.” Concepts of method necessarily depend for their formation on the possession of concepts for the goals, actions (psychological and/or physical), tools, and products of the method. And the “integrations of existential concepts with concepts of consciousness” obviously presuppose the formation of concepts of the two types integrated: “The concept ‘marriage’ [for instance] cannot be formed or grasped merely by observing

this connection, the more recent literature about the fine-grainedness of perception (some of which could benefit by taking into account Efron’s discussion).

the behavior of a couple: it requires the integration of their actions with a number of concepts of consciousness, such as ‘contractual agreement,’ ‘morality,’ and ‘law’.”⁴¹

In a later chapter of *ITOE*, Rand discusses *axiomatic concepts*—such as “existence,” “identity,” “consciousness”—explaining their cognitive role and the manner of their formation, including the ways in which their formation does and doesn’t involve measurement-omission as compared with the formation of concepts previously discussed. Their status as the primary concepts in our conceptual hierarchy, and as concepts that grasp primary facts about the world, give them certain special features as concepts.⁴²

In a portion of the workshops not transcribed for the expanded 2nd edition of *ITOE*,⁴³ Rand briefly discussed the transition from a concept of a type of entity hypothesized by scientific researchers to the same concept when the existence of such entities has been established (the example is “archaeopteryx”). But neither there nor anywhere in *ITOE* does she identify a special category of concepts that depend for their formation on a complex body of scientific theory as philosophers who speak of “theoretical concepts” sometimes mean to do. (Nor does she isolate a corresponding sort of existent, a “theoretical entity”.) She does not do so, I suspect, because she holds that all concepts beyond the simplest ones depend for their formation on a complex, hierarchical body of knowledge, itself connected to a complex hierarchy of concepts. In that sense, the difference between theoretical concepts of science and other higher-order concepts probably did not seem a fundamental one to her—not, one might say, because she underestimated the cognitive complexity of scientific concepts, but because she understood

⁴¹ *ITOE*, 34–8, 70.

⁴² *ITOE*, 55–61. For more details, see also 5–6 and large parts of 240–79.

⁴³ Folder A, L, H, P–18 in the Special Collections of the Ayn Rand Archives (Irvine, CA).

the cognitive complexity of concepts which one might think of as outside the realm of theoretical science.^{44 45}

⁴⁴ See, in this regard, *ITOE*, 48, and the passages cited on the hierarchical character of concepts of consciousness in n. 41; see also the last two sentences of the quotation from James Lennox in n. 69 below.

As for the formation of “theoretical” concepts, such as “electron” (which she mentions in passing in *ITOE*, 47), Rand would certainly hold that they too are formed by a process involving measurement-omission, in essentially the same way as other (non-axiomatic) concepts. (That electrons might not vary *at all* in the basic characteristics that distinguish them from other particles does not count against this; see *ITOE*, 142-4 and Per F. Dahl, *Flash of the Cathode Rays: A History of J. J. Thomson’s Electron* [Bristol and Philadelphia: Institute of Physics Publishing, 1997], 187-8.) The difference between this sort of concept and most of the concepts we have discussed would lie in the basis for knowing (or, perhaps first, hypothesizing) that their units—the things they integrate (e.g., electrons, in the case of the concept “electron”)—*actually exist*, with similarities that warrant their being conceptualized. (As an example of such an “existence proposition,” as I like to call it, consider the following from J. J. Thomson: “. . . the experiments just described, taken in conjunction with previous ones on the value of m/e for the cathode rays . . ., show that in gases at low pressures negative electrification, though it may be produced by very different means, is made up of units each having a charge of electricity of a definite size; the magnitude of this negative charge is about 6×10^{-10} electrostatic units, and [in light of Townsend’s results] is equal to the positive charge carried by the hydrogen atom in the electrolysis of solutions.” [Quoted in Dahl, *Flash of the Cathode Rays*, 187-8])

This basis for knowing (or, perhaps first, hypothesizing) that such and such things exist would not be perceptual awareness alone (as in the initial formation, e.g., of “table), or perceptual awareness plus a few simple cognitive steps therefrom (as in the initial formation of, say, “furniture”), but a complex body of propositional, and indeed theoretical, knowledge, itself built on prior concepts and propositions—which concepts and propositions are themselves ultimately built up from perception. (Note, then, that on Rand’s view, though all concepts [e.g., “electron”] are built hierarchically *from* perceptual awareness, the units of a concept need not be directly discernible *in* perceptual awareness [as, e.g., “electron” is not].)

Though there are certain interesting similarities between Rand’s theory of concepts and the so-called “theory theory” of concepts, I hope it will be clear from my exposition of Rand’s theory throughout this paper (including in the following section on definitions and essences) that the two theories differ fundamentally. The amplification of this point will have to await another occasion (though see below, n. 58).

⁴⁵ In his critique of “abstractionism” in *Mental Acts*, referred to at the opening of this paper, Peter Geach says that “the supposed process of abstraction” (18) cannot explain our acquisition of (to use his terms) (i) concepts of sensible things (including material stuffs) (19–20), (ii) psychological concepts (20–2), (iii) logical concepts (22–7), (iv) arithmetical concepts (27–32), (v) relational concepts (32–3), or even (vi) color concepts (not to mention concepts of other sensible qualities) (33–8); in short, Geach concludes, “no concept at all is acquired by the supposed process of abstraction” (18). This is true enough, if abstraction is what Geach and his abstractionists take it to be, but his arguments against abstractionism, I suggest, have no force against Rand’s theory of concept-formation. For instance, the view being criticized in (i) and (vi) holds that (e.g.) particular instances of red have an identical core of *redness*, and particular color ranges (*red*, *blue*, etc.) an identical core of *hue*; but we have seen that Rand rejects this, holding that the instances need only be commensurable, i.e., comparable along a scale of more and less. Geach’s argument in regard to (ii) depends, among other things, on a primitive view of introspection, over-analogized to perception; this is not Rand’s view, since for her introspection typically involves the use of prior-formed concepts (*ITOE*, 225-9). In regard to (iii), Geach’s abstractionists, incredibly, take concepts such as “and” and “or” to be formed from things like feelings of hesitation. Rand much more sensibly looks to their role in capturing, and facilitating, “relationships among thoughts,” and indicates what sort of measurement-omission is involved in their formation (*ITOE*, 37-8). Finally, given the priority in Rand’s theory of the formation of concepts of kinds of entities, she has no difficulty accounting for the kind-relative dimensions of both (iv) and (v). Indeed, Rand’s general account of mathematics and mathematical concepts, though not fully developed, is well worth further study. (Cf. *ITOE*, Index, s.v. Numbers; Mathematics.)

In this section, I have of course only been able to outline Rand's theory of concepts. My aim has been to lay down the elements of the theory, to aid readers in the study of her work, and to provide a platform from which students of her theory (myself included) could go on to expand on this presentation, and to develop its implications for a host of epistemological issues. But even an outline of Rand's theory would not be complete without an account of the place of definitions in concept-formation, and of their relation to essences, as she conceives essences, so to that I now turn.

III

*Definitions and essences.*⁴⁶ In the formation of a concept, as we have seen, the units (for example, tables) are first *isolated* from certain other objects (for example, chairs) by focusing on a distinguishing characteristic or characteristics (for example, a specific shape, and, later, also a use). Then the units are *integrated* by retaining those characteristics, with their axes of measurement, while implicitly omitting all particular measurements (of that shape, and that use, and of all the other common characteristics of tables). The integration is turned into a retainable mental unit by being assigned a word. To complete the process the concept is given a *definition*. "A definition," says Rand, "is a statement that identifies the nature of the units subsumed under a concept. . . . The purpose of a definition is to

⁴⁶ In this section I borrow heavily from my presentation in *On Ayn Rand*, ch. 7.

distinguish a concept from all other concepts and thus to keep its units differentiated [in one's mind] from all other existents.”⁴⁷ I quote from her discussion:

The rules of correct definition are derived from the process of concept-formation. The units of a concept were differentiated—by means of a distinguishing characteristic(s)—from other existents possessing a commensurable characteristic, a “Conceptual Common Denominator.” A definition follows the same principle: it specifies the distinguishing characteristic(s) of the units, and indicates the category of existents from which they were differentiated.

The distinguishing characteristic(s) of the units becomes the *differentia* of the concept's definition; the existents possessing a “Conceptual Common Denominator” become the *genus*.

Thus a definition complies with the two essential functions of consciousness: differentiation and integration. The *differentia* isolates the units of a concept from all other existents; the *genus* indicates their connection to a wider group of existents.⁴⁸

⁴⁷ *ITOE*, 40. The only concepts which cannot “be defined and communicated in terms of other concepts. . . . are concepts referring to sensations, and [axiomatic concepts, such as *existence* and *consciousness*].” These must be defined ostensively (40–1, 55–61).

⁴⁸ *ITOE*, 41.

A definition thus both *differentiates* a concept from other concepts and *integrates* it to them, allowing us, as our knowledge expands, to retain the hierarchical structure of our concepts and to keep our knowledge integrated into a single whole.⁴⁹

The units of a concept normally have many distinguishing characteristics, however, and to specify them all in its definition would defeat the purpose of a definition: it would make it impossible for a mind to hold the concept as a single unit, clearly grasped. What's needed is a single distinguishing characteristic, or a very small number of them, that can be held as a single mental unit and yet can bring readily to mind all the other characteristics. It's here that Rand introduces her conception of *essence*.

She observes that the distinguishing characteristic(s) of a concept's referents that readily bring to mind the referents' other characteristics will be the ones on which those others, or the greatest number of them, depend. The distinguishing characteristic(s) on which the others depend are *essential* to the concept's referents: without those characteristics (and the others which depend on them) the referents would no longer be the kind of things they are.⁵⁰ This is Aristotelian rule of *fundamentality* put to epistemological use. The essential characteristic is the *fundamental* distinguishing characteristic—that is, the distinguishing characteristic or characteristics that are *responsible for* (and thus explain) the greatest number of other distinguishing characteristics.

Thus, in the familiar example of the definition of *man*—where we observe that man is the only animal that can tell time with a watch, catch a joke, speak a language, experience certain complex emotions, grasp things conceptually, etc.—it is the ability to reason, to

⁴⁹ On the importance for Rand of the hierarchical (and contextual) nature of concepts, see above, 00 (with n. 38).

⁵⁰ *ITOE*, 42.

grasp things conceptually, that makes the others possible and explains them. And so, by defining man as *a rational animal*, one brings readily to mind the other characteristics one knows to follow from the capacity to form concepts and to reason. Were we to define man as *the time-telling animal*, the mental effort of moving up and down the causal chain to hold one's knowledge of man's distinguishing characteristics as a single whole would be stultifying.

Two facts about this account of definition have significant implications, Rand observes. First, a concept is an integration of *existents*, not just of selected aspects of them, so that the meaning of a concept is not exhausted by its definition.⁵¹ Second, knowledge about the units of a concept is acquired over time, and new knowledge may require a revised definition. Both facts are best seen in the context of Rand's general approach to concepts, discussed in my previous section.

A concept, as I've said, is an integration ultimately of perceptual (or introspective) data, an integration of particular existents either discernible in perception or inferable therefrom. It is not an awareness of special "abstract objects," but a distinct and powerful form of awareness of particular existents—past, present, and future—with all their attributes, known and unknown. The concept is formed by a certain *means* (isolation and integration via measurement-omission) and held in a certain *form* (an integration of retained characteristics with measurements omitted, fixed by a word and specified by a definition). But neither the means by which conceptual awareness of existents is achieved

⁵¹ On Rand's view of meaning, see the next note.

nor the form in which it is held is the *object* or content of conceptual awareness. The object or content is the units, the *existents* grouped together, with all of their attributes.

The concept's content is thus not to be equated with its definition. As one comes to discover additional distinguishing characteristics of the units of a concept, one's knowledge of those units changes—it expands. But, except in special cases, *one's concept does not change*. The concept still integrates essentially the same units, the same existents.⁵²

However, if one should discover a more fundamental distinguishing characteristic of the existents integrated into a concept, the definition will need to change to reflect that new knowledge. In the new context of knowledge, the old defining characteristic is *no longer essential* and falls out of the definition. The earlier definition is still a true statement, and the earlier essential characteristic (and its causal relationship to the other earlier known

⁵²The concept itself will change—or, strictly, be replaced—only in those cases where new information, or a newly established scientific theory, so modifies our understanding of the similarity relationships as to require a reclassification of the relevant existents. (The abandonment of the concept of “humours,” or of the concept of “phlogiston,” is an example of that.) Much that philosophers of science today call “conceptual change” does not in fact involve an actual replacement of one concept with another. See James G. Lennox, “Ayn Rand on Concepts, Context, and the Advance of Science,” unpublished paper read at a conference at the University of Pittsburgh on “Concepts and Objectivity: Knowledge, Science, and Values,” in September 2006.

In the contemporary discussion of scientific change, the notion of *meaning* (and change of meaning) often plays a central role, so I ought to say a word about Rand's own view of meaning and meaning change. Although the concept of *meaning* does not play a central theoretical role in Rand's theory of concepts, she does occasionally make use of it to contrast her view that a concept is a grasp of existents (including all their attributes) with the view (as for instance in Locke or Frege, in different ways) that a concept is a grasp of a small number of *known* attributes of those existents, which then determines which existents fall under the concept. In that context she would typically say that “the meaning of a concept consists of the units—the existents—which it integrates, including all the characteristics of these units.” (See Peikoff's discussion in “The Analytic-Synthetic Dichotomy,” his contribution to *ITOE* [n. 6 above], 97–106, esp. 98, from which I've just quoted, and Rand's own remarks in response to questions about meaning in the workshop discussions, *ITOE*, 165–6, 174–7, 235–8.) That being so, in the same contexts in which Rand would say that the concept does not change, she would say likewise that the concept's meaning does not change. (See again Lennox, “Concepts, Context, and the Advance of Science,” just mentioned.) Why Rand holds that the notion of *meaning* should not have the sort of theoretical role in philosophy that it has had at least since the early 20th century is a complex matter, which I plan to discuss elsewhere.

distinguishing characteristics) is still included in the content of the concept, but it is replaced in the definition. Our knowledge has *expanded* and our definition reflects that.⁵³

The essential characteristic of a concept, then, is that distinguishing characteristic of its units, *from among those known*, which is *known* to be responsible for (and thus explanatory of) the greatest number of other *known* distinguishing characteristics.

Definitions are thus *contextual*. They depend in part on the definer's context of knowledge. But within a given context of knowledge they are, Rand says, *absolute*—that is, determined by the *actual* causal-explanatory relationships between the distinguishing characteristics known within that context. “An objective definition, valid for all men,” says Rand, “is one that designates the *essential* distinguishing characteristic(s) and genus of the existents subsumed under a given concept—according to all the relevant knowledge available at that stage of mankind's development.”⁵⁴

⁵³ See, for instance, the historical move from defining chemical elements in terms of atomic weight to defining them, after subatomic particles had been discovered and the understanding of chemical interaction had advanced, in terms of atomic number. The move is described in Eric R. Scerri, *The Periodic Table: Its Story and Significance* (New York: Oxford University Press, 2006), ch. X, and in Robin Findlay Hendry, *The Metaphysics of Chemistry* (forthcoming Oxford University Press; draft manuscript available as of 4 September 2007 at <http://www.dur.ac.uk/r.f.hendry/#books>), ch. 4: “Elements, compounds and other chemical kinds,” pp. 59-60; cf. also ch. 3: “The elements of chemistry from Lavoisier to IUPAC,” pp. 45-50. (Ch. 3 is based in part on “Lavoisier and Mendeleev on the Elements,” *Foundations of Chemistry* 7 (2005), 31-48; ch. 4 is based on an article of the same name published in *Philosophy of Science* 73 [2006], pp. 864–875. Thanks to Michael Weisberg for pointing me towards the very interesting literature in history and philosophy of chemistry.) For other examples, see Peikoff, *OPAR*, 96-105; and Lennox, “Concepts, Context and the Advance of Science.”

⁵⁴ *ITOE*, 46. James Bogen (below, n. 74) has expressed reservations about Rand's thesis (or at least its universality), noting among other things that (i) some scientific definitions (e.g. of the “action potential” of a nerve) are functional (in full or in part), while on her account they should, today at least, specify the underlying mechanism known to be responsible for transmission, and that (ii) certain psychiatric definitions (e.g. of schizophrenia) do not attempt to specify underlying causes. While there is more to say about these matters, I would just note the following here. (i) In biology functions are explanatorily prior to the sorts of mechanism that enable their performance, and, where inclusion of the mechanism in the definition is called for, it would need to be specified only in terms of *its* essentials. And (ii) in medical-diagnostic science, one may have concepts of *syndromes* ahead of concepts of the underlying disease (not to mention the still primitive stage of psychological science, in which there is as yet little good systematic understanding of mental disease).

Definitions are also *factual statements*. “A definition is the condensation of a vast body of observations”⁵⁵—observations of similarity-and-difference-relationships, observations of which characteristics distinguish a particular group of existents from others, and observations that establish which of those characteristics are in fact responsible for the rest. They are neither stipulations nor conventions.

If definitions are contextual for Rand, so are essences. Or, as she puts it, essences are *epistemological*, not metaphysical. (Here she differs from those in the realist tradition.) A distinguishing characteristic that is causally prior to other distinguishing characteristics is not more “real” than those other characteristics, nor more what an existent integrated by the concept “really is,” nor is it the sole or primary referent of the concept.⁵⁶ The concept refers to the existents it integrates, including all of their characteristics, known and unknown. But the characteristic designated “essential” does perform a distinct *epistemological* function. Its ability to perform this function, then, depends in part on the factual (causal) relations between the characteristics, but also in part on the way a

There is, however, more to say about cases of the latter sort. Consider, in particular, two additional cases. (a) Hendry (above, n. 54) speaks of “syndrome kinds” in chemistry, such as *acid*, which are defined not by their compositional structure (which can vary widely) but by their behavior. And (ii) it is now common in the philosophical literature to note that the concept “lily” is not a concept of a biological kind, but groups biologically different sorts of flowers on the basis of their similar appearance, because that appearance plays a role in floral decisions. Rand views concepts such as “acid” or “lily” as entirely legitimate (and not second-class relative to “natural kind” concepts [see below, n. 58 and sec. IV]); what we need to see now is that their standard definitions fully meet her conditions for proper definition. Acids have numerous (typically relational) characteristics in common (e.g. their particular sour taste or corrosiveness), as do lilies (e.g. their suitability to some but not other floral arrangements). Their defining characteristics – say, ability to supply a hydrogen ion or having an appearance of a certain type—are just those which are thought to be responsible for, and so to explain, their other distinguishing characteristics.

⁵⁵ *ITOE*, 48.

⁵⁶ Nor is a causally prior distinguishing characteristic any sort of deep identity running through the concept’s referents: it too varies within a range. (Thanks to Gregory Salmieri for this point.)

conceptual consciousness must function if it is to acquire, retain, and expand its knowledge.⁵⁷

IV

Norms of conceptual activity. Our focus in regard to concepts per se has been, so far, on their nature and formation, and their basis in reality. In speaking of their basis in reality, we have been speaking of a necessary condition of their formation: concepts can be

⁵⁷Jerry Fodor et al. (among others) have insisted that any theory which identifies concepts with definitions must fail, because there are no definitions of that type, or at least very few. (Jerry A Fodor, Merrill F. Garrett, Edward C. T. Walker, and Cornelia H. Parkes, "Against Definitions," in *Concepts: Core Readings*, ed. Eric Margolis and Stephen Laurence [Cambridge, MA and London: MIT Press, 1999], 491-512; excerpted from *Cognition* 8 [1980].) So, it is important to underscore two things that may be clear already. First, Rand does not identify concepts with their definitions, and second, Rand's definitions are not "analytic" definitions of the sort Fodor et al. denigrate. As Paul Griffiths commented, in a 2003 APA session at which an earlier version of this paper was read: "Rand's use of the term 'definition' to refer to a temporary stopping point in our attempts to understand nature, with its implication that definitions are defeasible by empirical facts seems odd to analytic philosophers but is, in reality, very much in the spirit of Mill and Whewell [as founders of the modern natural kinds tradition]. This way of thinking about definitions is so much part of the practice of the inductive sciences that it is not hard to find scientists speaking explicitly in these terms. [After quoting examples from "two emotion researchers," Griffiths continues:] Nevertheless, in philosophical discourse, 'definition' is more typically used to refer to a description associated with a term by stipulation and any change of which reduces the terms on either side of that change to mere homonyms. This notion of 'definition' has its uses, especially in the formal sciences, but in the tradition of natural kinds it has no obvious use and we can usefully adopt Rand's usage and regard a definition as a temporary resting place in our ongoing search for knowledge." (Paul E. Griffiths, "Commentary on 'Ayn Rand on Concepts, Definitions, and Essences' by Allan Gotthelf and 'Ayn Rand on Concepts, Context, and the Advance of Science' by James G. Lennox, [Ayn Rand Society meeting, APA Eastern Division, December 2003], unpublished. See also Peikoff, "The Analytic-Synthetic Dichotomy," [above, n. 6].)

In his commentary, Griffiths goes on to note two important aspects of "the mainstream tradition of thought about natural kinds": their association with "a picture of *conceptual dynamics*" and their association with "a vision of *naturalness*." Though he thinks Rand converges on the former picture, he questions whether she converges on the conception of "naturalness." This latter conception "implies a single best taxonomy of nature independent of any particular human purposes," a taxonomy our developing concepts should be aiming to capture. This, he acutely observes, does not seem to be Rand's view, in which concepts "are for *life* in all its aspects and we need criteria for judging them in many domains besides the fundamental sciences."

Such a view, he says, would still have to deal with several phenomena which have been difficulties for the natural kinds view, and which it is not clear her view can accommodate, viz. "multiple dimensions of efficiency; multiple epistemic projects; non-epistemic projects." Addressing these observations and concerns of Professor Griffiths, and placing Rand's theory of concepts (and kinds) relative on the one hand to the modern natural kinds tradition (well-expounded and developed in Griffiths' *What Emotions Really Are: The Problem of Psychological Categories* [University of Chicago Press, 1997], ch. 7: "Natural Kinds and Theoretical Concepts") and on the other to the "promiscuous realism" of John Dupré (whom Griffiths cites in his commentary) would, I agree, illuminate Rand's theory (and her resources for addressing the "difficult phenomena" Griffiths points us to), and I plan to do so elsewhere.

formed only by an active process of *differentiating* (similar from different along shared commensurable characteristics) and *integrating* (those isolated similars into a unitary, open-end grasp). Similars can be integrated *only* if they share a commensurable characteristic.⁵⁸

This condition on concept-formation is a condition from the side of reality, as it were: the quantitative relations that underlie commensurability are mind-independent facts about the world, and as such provide what I've called a "basis in reality" for conceptual integrations.⁵⁹ (The causal relations crucial to the determination of essential characteristics are, of course, another part of that basis.)

However, though this condition sets limits on what concepts we *can* form, it does not by itself tell us what concepts we *should* form. Existents are similar (in Rand's sense) in myriad ways, and can be grouped and integrated in myriad ways. Yet we do not have concepts for all these groupings. We often identify unconceptualized groups by descriptive phrases; for example, someone might speak (to use Rand's example) of "beautiful blondes with blue eyes, 5'5" tall and 24 years old." But we can easily see that an attempt to form a new concept (with a single word) for each such grouping would clutter our consciousness and stultify our thinking (or those "concepts" would fall out of use).

⁵⁸ *ITOE*, 13.

⁵⁹ Actually, the commensurability of the units to be integrated is a condition only because our conceptual apparatus is such that our mode of conceptual integration involves measurement-omission. In that sense, this condition, though from the side of reality, involves a coordinate condition from the side of consciousness (a point we will return to later). Still, *given* our apparatus, the relevant quantitative relations required for integration are themselves, as I say, mind-independent, and should be classified as a *basis in reality* for our concepts.

We spoke at the beginning of this paper of the role of concepts in both organizing our knowledge and facilitating its expansion. Forming a concept every time we notice a similarity would do neither. What else, then, is involved in proper concept-formation, and what normative principles should guide our conceptual faculty in deciding what integrations to make and what concepts to form? Rand observes that “one of that faculty’s essential guiding principles” is “the principle of *unit-economy*.” She explains that

the range of what man can hold in the focus of his conscious awareness at any given moment is limited. The essence, therefore, of man’s incomparable cognitive power is the ability to reduce a vast amount of information to a minimal number of units.⁶⁰

This is a pattern throughout successful conceptual activity. We have seen some of the ways in which concepts themselves expand our knowledge by radically reducing the number of units: “A concept substitutes one symbol (one word) for the enormity of the perceptual aggregate of the concretes it subsumes.”⁶¹ And we have seen the principle of unit-economy at work in guiding the formation of definitions: the *essential* characteristic (or characteristics) of a concept condenses into a single mental unit our knowledge of all the many distinguishing characteristics.⁶² Think too of how *outlining* a complex argument, or an article or book one is reading, facilitates understanding it: the larger whole, which

⁶⁰ *ITOE*, 63; cf. 172-3.

⁶¹ *ITOE*, 64.

⁶² *ITOE*, 65. Likewise, the definition’s genus enables condensation of the many characteristics had in common with nearby groupings.

one cannot hold in mind as a whole, is reduced, via the outline, to a relatively few manageable units. That is the principle of unit-economy at work.

This principle, Rand holds, plays a crucial role in determining which concepts should be formed and (as a direct consequence) what, in Locke's term, their "boundaries" should be.⁶³ In her discussion of "The Cognitive Role of Concepts," in *ITOE*, chapter 7, Rand lists some cases where the principle of unit-economy makes it mandatory that we form concepts.

Among the types of concepts that it is mandatory to form, says Rand, are

such categories as: (a) the perceptual concretes with which men deal daily, represented by the first level of abstractions; (b) new discoveries of science; (c) new manmade objects which differ in their essential characteristics from the previously known objects (for example, "television"); (d) complex human relationships involving combinations of physical and psychological behavior (for example, "marriage," "law," "justice").

These four categories represent existents with which men have to deal constantly, in many different contexts, from many different aspects, either in daily physical action or, more crucially, in mental action and further study. The mental weight of carrying these existents in one's head by means of perceptual images or lengthy verbal descriptions is such that no human mind

⁶³ Cf. Locke, *Essay*, 3.6.27, among many other passages.

could handle it. The need of condensation, of unit-reduction, is obvious in such cases.⁶⁴

Later, in discussing her response to the nominalist “borderline case argument,” Rand stresses the role of unit-reduction in regard to the issue of specialized study. Speaking of black swans, she explains that it is mandatory to classify them as *swans*, and not as a separate, coordinate group, since “virtually all their characteristics are similar to the characteristics of the white swans, and the difference in color is of no cognitive significance.”⁶⁵ I take it that the difference in color’s being “of no cognitive significance” refers to the fact that black swans do not need separate, specialized study. They don’t need it because they do not have anything *essential* to them as such—that is, they don’t have any distinguishing characteristics that bring along many other distinguishing characteristics, such that there is a wealth of unique information to be condensed by a concept.⁶⁶ Forming a separate, coordinate *concept* for black swans, therefore, “would lead to senseless duplication of cognitive effort (and to conceptual chaos)”⁶⁷

Were we, however, to discover that a group previously classified among the swans actually has essential similarities among themselves in this way, that is, has characteristics, not possessed by the other birds with which it has been grouped, that bring along many others, requiring specialized study, then a new, coordinate concept would have to be formed. It is the principle of unit-economy that mandates, in such cases, the forming of a separate major grouping, and a concept integrating it. (This was presumably the case with

⁶⁴ *ITOE*, 70.

⁶⁵ *ITOE*, 73.

⁶⁶ I owe the formulation in the latter part of this sentence to Gregory Salmieri.

⁶⁷ *ITOE*, 71; cf. 70–3.

regard to the formation, probably first by Aristotle, of the concept *cetacean*, incorporating whales, dolphins, and porpoises.⁶⁸)⁶⁹ And because the principle mandates the formation of new concepts in order to integrate *certain ranges* of things, the norms it provides for when concepts should be formed also serve as norms for the “boundaries” of the kinds of things (e.g., swans, fishes) to be recognized by these concepts.

Generalizing on this discussion, Rand identifies a broad norm for the formation of concepts, a kind of “epistemological ‘razor’”:

The requirements of cognition determine the *objective* criteria of conceptualization. They can be summed up best in the form of an epistemological “razor”: *concepts are not to be multiplied beyond necessity*—the corollary of which is: *nor are they to be integrated in disregard of necessity*.⁷⁰

These brief illustrations of the role of the principle of unit-economy in determining when new concepts need be formed (and when not) and what existents these concepts need to integrate, illustrate a wider fact about Rand’s theory of concepts, and indeed about her philosophy in general. They show that the nature and formation of a concept depends in part on *reality* (for instance, mind-independent commensurability and causal relationships)

⁶⁸ Aristotle, *History of Animals* 1.6 490b8-9, 7(8).2 589a31-590a18. Interestingly, in the almost certainly earlier work, *Parts of Animals (PA)*, Aristotle has not yet separated off such a wider kind (*PA* 4.13 697a14-b1 and Lennox, *Aristotle On the Parts of Animals I-IV*, 343).

⁶⁹ In “Ayn Rand on Concepts, Context, and the Advance of Science” (above, n. 53) James Lennox identifies five types of changes in an existing conceptual structure that new discoveries might lead to, “each of which is acknowledged at some point by Ayn Rand in *Introduction to Objectivist Epistemology*.” After doing so, Lennox writes: “Since I am focusing on the philosophy of science, I will refer to these as *developments in the conceptual structure of a science*. It is worth noting, however, that such conceptual advances—the introduction, replacement, reclassification, or sub-categorization of concepts, or the generation of a wider concept—are not peculiar to the sciences. They are a pervasive aspect of cognitive development.”

⁷⁰ *ITOE*, 72.

and in part on *the requirements of a conceptual consciousness* (for instance, the need to integrate via measurement-omission and the need of unit-economy). Concepts, then, are neither *subjective* products of conscious choices, as nominalism claims, nor intuitive grasps of *intrinsic* universals or essences, as realism claims. They are, on Rand's view, essentially distinct from what both of these theories take concepts to be. And because grasping their nature is central to our understanding of human cognition and to the establishment of norms thereof, we need a new concept—and a term—for the actual relationship between concepts and the world. Rand's term for this third status is: *objective*. As she writes:

None of these schools regards concepts as *objective*, i.e., as neither revealed nor invented, but as produced by man's consciousness in accordance with the facts of reality, as mental integrations of factual data computed by man—as the products of a cognitive method of classification whose processes must be performed by man, but whose content is dictated by reality.⁷¹

“Objectivity” here can refer both to the status that a properly formed concept achieves, when it is formed in accordance with a process based on facts of mind-independent reality, and to that process when it is guided according to a systematic

⁷¹ *ITOE*, 54. Cf. Salmieri and Gotthelf (above n. 12), esp. the concluding paragraph; Gotthelf, *On Ayn Rand*, ch. 7; and especially Peikoff, *OPAR*, ch. 4. In response to Locke's question as to whether the boundaries of the kinds of existents we recognize are set by “nature” or by “the workmanship of the understanding,” Rand's answer, then, is (in effect): “Both, jointly”—understanding that that workmanship must be in accordance with an objective method (as we are about to discuss).

body of norms (i.e., to a *method*) required for such a process to adhere to mind-independent reality. For Rand, then, as Peikoff summarizes, “To be objective in one’s conceptual activities is volitionally to adhere to reality by following certain rules of method, a method based on facts *and* appropriate to man’s form of cognition.”⁷² And to simplify a large issue, on Rand’s view a conceptual consciousness will be *justified* in its conclusions if and when it has followed such a method.⁷³

This status—*objective*—in the context of its distinction from *intrinsic* and *subjective*—and the general conception of *objectivity* that underlies it—is central to Rand’s philosophy. It characterizes not only her view of concepts and definitions, but also her view of knowledge generally, and of values, and much more. Its centrality is one reason why she called her philosophy “*Objectivism*.” A fuller account of Rand’s original and far-reaching conception of *objectivity* is for another time. Such an account, however, will have to rest on an understanding of her theory of concepts, and that is what I have here aimed to provide.⁷⁴

⁷² *OPAR*, 117. Peikoff continues:

People often speak of “objective reality.” In this usage, which is harmless, “objective” means “independent of consciousness.” The actual purpose of the concept, however, is to be found not in metaphysics, but in epistemology. Strictly speaking, existents are not objective; they simply are. It is minds, and specifically conceptual processes [including their products], that are objective—or nonobjective.

The concept of “objectivity” is essential to a rational epistemology; it is a requirement of the proper development of human consciousness and, ultimately, of human survival. . . . A conceptual consciousness must focus on reality by a deliberate resolve, and it must discover and then choose to practice the method required to implement this resolve. Such is the fundamental state of mind that the concept of “objectivity” identifies and upholds . . .

⁷³ As mentioned at the beginning of this paper, there is not space here to discuss the implications of Rand’s view of conceptualization and objectivity for the familiar problems of contemporary epistemology. For an extended discussion of these matters, see now Salmieri, “Justification as an aspect of Conceptualization: How Rand’s theory of Concepts represents ‘a new approach to epistemology’” (above, n. 00).

⁷⁴ A precursor of this paper (called “Similarity, Sameness and Kinds in Aristotle, Locke and Ayn Rand”) was presented to a colloquium at the University of Texas at Austin in November 2002; my thanks to my

commentator, Rob Koons for his comments, and to all those who participated in discussion there and privately afterwards, especially David Sosa. The paper's first version was read to a meeting of the Ayn Rand Society at the American Philosophical Association Eastern Division in December 2003 as part of a panel on "Ayn Rand on Concepts, Essences, and Scientific Progress;" James Lennox read the second paper (above, nn. 53, 58) and Paul Griffiths commented (above, n. 58). My thanks to Jim Lennox, Paul Griffiths, our chair, Harry Binswanger, and all those who participated in what was a very lively discussion. A later version was read at a conference in Pittsburgh on "Concepts and Objectivity: Knowledge, Science, and Values," jointly sponsored by University of Pittsburgh and University of Texas at Austin Fellowships for the Study of Objectivism. Jim Bogen's comments on sec. III (on definition) were thought-provoking, and I had rewarding discussion with many others in and out of session, especially Jackie Sullivan and Dick Burian. The paper was also discussed at two work-in-progress workshops organized, in 2006 and 2007, by Tara Smith at the University of Texas at Austin, with participation also by Harry Binswanger and, at one or another, by Onkar Ghate and Robert Mayhew. Thanks to them all for fruitful sessions. Throughout my work on this paper I have received immensely valuable advice and comments from my research assistant, Greg Salmieri, and from Harry Binswanger. Thanks, also, to the Anthem Foundation for Objectivist Scholarship, and its president, Dr. John McCaskey, for support of my research and writing.