

Symposium: Rand and Hayek on Cognition and Trade

Rand versus Hayek on Abstraction

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1. Introduction

Ayn Rand and Friedrich Hayek were two of the most important and influential theorists of a free society from the mid-twentieth century onward. Yet they defended the free society from radically different philosophical standpoints. Both were systematic thinkers whose defense of capitalism was rooted in more fundamental issues, and they differed systematically on a wide range of those issues, from metaphysics and epistemology to ethics and political philosophy. In this article, I will discuss the radical difference in their respective views about the nature and power of reason, focusing more narrowly on their respective views about a core issue in epistemology: the nature of abstractions—that is, our concepts for general kinds of things and their common attributes, and the abstract principles and rules that we form with our concepts.

2. Rand versus Hayek on the Power of Reason

Rand holds that reason is the cognitive faculty that produces conceptual knowledge based on the evidence of the senses and logical integration. It is a volitional faculty, one that we control by initiating the effort to think and taking responsibility for the results. On her view, reason is efficacious, allowing for the open-ended acquisition of objective knowledge of the world. The possibility of objective knowledge applies not only to descriptive matters of fact, but also to evaluative and prescriptive principles in ethics and politics. Rand holds that it is possible to establish a rational moral code based on the objective needs and capacities of human beings, a code whose values and principles of action are universal, not culturally relative. And she holds that individuals have the capacity (and responsibility) to rely on reason in choosing their specific goals and applying moral principles to their particular circumstances. Indeed, rationality is the primary virtue in her ethics. Though she is all too aware that many people do not think or act rationally, and analyzes a number of irrational syndromes, she holds that anyone *can* function rationally, at whatever level of intelligence and knowledge, by choosing to exercise reason and making it a practice.¹

¹ Ayn Rand, “The Objectivist Ethics,” in Ayn Rand, *The Virtue of Selfishness: A New*

Hayek, by contrast, is a critic of what he calls “constructive rationalism.”² His concept of rationalism is somewhat idiosyncratic, and is not equivalent to Rand’s conception of reason. Nevertheless, it leads him to claim that “no universally valid system of ethics can ever be known to us,”³ which is obviously not consistent with her view. For Hayek, moral rules have a status lying “between instinct and reason.”⁴ They are not literal instincts of the kind we ascribe to animals; they are not inborn. They are habits people acquire in the course of maturation and experience, as they are acculturated to the norms of their society. But neither are such norms the product of reason. People acquire them essentially by imitation of others, not by understanding their rationale or the long-term benefits of following them. Indeed, says Hayek, they are largely tacit. People incorporate them into their habitual modes of action because of social pressure, conformity, and sometimes coercion.

Neither, Hayek claims, do societies acquire their norms through the insights or teachings of previous thinkers, nor do the norms arise through any “social contract” among individuals. Instead, he offers an evolutionary account to the effect that rules evolve by a process akin to natural selection. Societies that adopt certain rules flourish, increasing in wealth and population; societies that adopt other rules fail and die out. If our rules of behavior and interaction are well-adapted to modern industrial-commercial society, it is because our society survived the winnowing process of social selection, in the same way that natural selection eliminates animal species that are ill-adapted to their physical environments.

This difference between Rand’s and Hayek’s views of moral knowledge carries over to politics, and gives a different cast to their respective defenses of freedom. Rand holds that the organizing principles of a proper society, like the principles of ethics, can be validated by reason. The core political principle is individual rights, which defines and sanctions “man’s freedom of action in a social context”⁵:

The source of rights is not divine law or congressional law [nor tradition nor “social selection,” she would certainly have added in response to Hayek], but the law of identity. A is A—and Man

Concept of Egoism (New York: New American Library, 1964), pp. 13-35.

² Friedrich A. Hayek, *Rules and Order*, Volume 1 of *Law, Legislation and Liberty: A New Statement of the Liberal Principles of Justice and Political Economy* (New York: Routledge, 1973), pp. 9-10; Friedrich A. Hayek, *The Fatal Conceit: The Errors of Socialism* (Chicago, IL: University of Chicago Press, 1988), pp. 61-62.

³ Hayek, *Fatal Conceit*, p. 20.

⁴ *Ibid.*, chap. 1.

⁵ Ayn Rand, “Man’s Rights,” in Rand, *Virtue of Selfishness*, p. 110.

is Man. Rights are conditions of existence required by man's nature for his proper survival.⁶

Rand is referring to the classical rights of life, liberty, property, and the pursuit of happiness. Embodied in a society's legal code, these rights protect individuals against coercive interference from others, including the state. But their essential function is positive: to enable individuals to live by their own rational judgment and to gain the values of trade with others.⁷

Hayek, too, affirms the classical conception of freedom from coercion, and holds that such freedom is essential to the operation of a market economy, with all of its benefits. He gives much less emphasis, however, to rights. And his anti-rationalist conception of moral rules covers political principles and institutions as well: "[M]orals, including, especially, our institutions of property, freedom and justice, are not a creation of man's reason but a distinct second endowment conferred on him by cultural evolution."⁸ Hayek regards this view of moral knowledge and moral psychology as the only protection against "constructive rationalists" who think that they can design and manage society by deliberate, scientific means.

In his famous essay "The Use of Knowledge in Society," Hayek argues that socialist economic planning is impossible because the vast bulk of the knowledge required for the effective allocation of resources is local knowledge of particular circumstances known to particular individuals, knowledge that cannot possibly be assembled in one place, in real time, by a central planning agency.⁹ Such knowledge can be put to use only within the price system of a market, based on individual property, freedom to trade, and protection of contracts. This case for market freedom is essentially negative. Hayek seems to think that if socialist planning were possible, socialism might be the morally ideal system. But the inescapable ignorance of would-be planners excludes that possibility: "If there were omniscient men, if we could know not only all that affects the attainment of our present wishes but also our future wants and desires, there would be little case for liberty."¹⁰

⁶ Ayn Rand, *Atlas Shrugged*, 35th anniversary ed. (New York: Dutton, 1992), p. 1061.

⁷ Rand uses broadly the term 'trade' to encompass not only economic exchange of goods and services, but "all human relationships, personal and social, private and public, spiritual and material," so that rights protect voluntary interactions in all of these realms; see Rand, "Objectivist Ethics," pp. 34-35.

⁸ Hayek, *Fatal Conceit*, p 52.

⁹ Friedrich A. Hayek, "The Use of Knowledge in Society," in *Individualism and Economic Order*, Friedrich A. Hayek (Chicago, IL: University of Chicago Press, 1948), pp. 77-91.

¹⁰ Friedrich A. Hayek, *The Constitution of Liberty* (Chicago, IL: Henry Regnery Company, 1960), p. 29. See also Hayek, *Fatal Conceit*, pp. 6-7.

In defending his view of how moral-political norms arise, Hayek takes the same analysis one step further. Here he argues that if such norms could be understood, assessed, and revised by reason, then utopians might be able and entitled to impose a new ethic of universal brotherhood and solidarity, à la Karl Marx, “from each according to his abilities, to each according to his needs.”¹¹ Hayek does not oppose these collectivist schemes on ethical grounds; he claims instead that they are factually impossible because of our inescapable ignorance—in this case, our ignorance of all of the historical circumstances that produced the norms, the benefits of following the norms, and the complex relation between the norms and society-wide consequences. Once again, his case for a free society is essentially negative.

Rand and Hayek can be seen as representing two different strands of Enlightenment thought. Rand is the best twentieth-century representative of the tradition of John Locke, Thomas Jefferson, and others who have prized man’s power of reason and have wanted to liberate that power in science, production, and the individual pursuit of happiness. What Rand adds to the tradition is an individualist moral theory based on man’s need to think and produce in service to his life, and epistemological insights regarding the nature and validation of reason, including the theory of concepts outlined below. Hayek represents the tradition of the Scottish Enlightenment, including thinkers such as David Hume, Adam Smith, and others who were more skeptical of the power of reason. Such thinkers tend to look at man not as the subject of rational knowledge or agent of rational action, but as the object of an inquiry about how societies function. This is the tradition that gave rise to the concept of “spontaneous order”—order that arises from human action, but not from human design. Hayek extends that concept from economics to the cultural order of norms and, as we shall see, to the functions of mind and brain.

3. Reason and Abstraction

Both Rand and Hayek recognize that the nature and power of reason depends on the nature of the abstractions by which we classify things and identify their common properties. The stark differences in their respective views of the power of reason are paralleled—and explained, at least in part—by the radical differences in their analyses of the nature, origins, and objectivity of abstractions. Before we turn to those differences, however, the fact that both of them identify the abstractness of human knowledge as the central issue in epistemology is worth noting as a striking point of connection. Both thinkers developed their theories outside of academic philosophy. For most of the past hundred years, philosophers have not considered the issue of concepts and abstractions as relevant to epistemology at all. The linguistic

¹¹ Karl Marx, “Critique of the Gotha Program,” in *Karl Marx: Selected Writings*, ed. Lawrence Simon (Indianapolis, IN: Hackett Publishing Company, 1994), p. 321.

turn in analytic philosophy shifted attention from thought to language, and the acquisition of abstract concepts has long been considered a question for psychology rather than philosophy.

In addition, there are striking similarities between Rand and Hayek in the way they employ the idea of abstractness outside of epistemology, as an explanatory term for understanding society. One similarity concerns the evolution of modern society. Hayek often states his view that what he calls “the extended order” of modern society emerged from earlier modes of tribal life, characterized by identification with the group, altruism toward other group members, hostility toward outsiders, and cooperation for common ends. The latter is the most significant aspect for our subject because those common ends are concrete. In tribal life, group members work together on specific tasks: hunting, building shelters, moving from summer to winter areas, and so forth. In the slow evolution to the extended order, the expansion of social contact and trade requires new habits. There are more interactions with strangers, chiefly through trade. Individuals are freer to pursue their individual ends and less bound up in the life of a tribe. Privacy increasingly replaces the completely public, communal life of primitive society.

As a result, the bonds of family and tribal relationships are increasingly replaced by standards of contract, commercial honesty, promise-keeping, and respect for the property of others on principle. The essence of this progression is a change in the way people coordinate their activities. Cooperation to pursue concrete common ends is possible for a small group, but not for a large, modern society, where coordination is achieved by abstract rules. Universal laws replace rule by edicts from tribal leaders. The use of resources is determined by impersonal markets, based on abstract rules of property and contract rather than deliberate distribution of specific goods to each member of a small group. Abstract rules allow the individual to adopt and pursue his own ends; the rules serve to coordinate his actions with those of others so that conflicts can be avoided, but the rules do not demand cooperation with others in any active sense. The rules of property and contract allow coordination among people who do not care about each other and may not even know about each other.¹²

Rand agrees with Hayek in seeing human progress as in large part a movement from tribalism in which people identify themselves with their kinship, ethnic, or other unchosen groups, to individualism in which people identify themselves with their own personalities, projects, and chosen relationships with others. At the core of this progress, in her view, is the increasing premium on the ability to think conceptually. Tribalism is characterized by what she calls “the anti-conceptual mentality,” a tendency to function mentally in a concrete-bound way, using basic-level concepts and language but unable to function with higher-level abstractions.¹³ The anti-

¹² See, e.g., Hayek, *Fatal Conceit*, chap. 1.

¹³ On the distinction among levels of abstraction, see Ayn Rand, *Introduction to*

conceptual mentality, Rand says, tends to treat such concepts as if they were perceptual givens, whose meaning is determined by association—“an indiscriminate accumulation of sundry concrete, random facts, and unidentified feelings”¹⁴—rather than by the logical integration of more basic concepts and a clear definition that specifies the referent of the concept. One aspect of the syndrome is the tendency to treat moral rules as concrete isolated injunctions—don’t lie, love your mother—rather than as principles. Such principles are not clearly distinguished from the rituals and traditions of the group; for that and other reasons, the anti-conceptual mentality breeds dependence on a group that shares the same constellation of values, practices, history, language, etc.¹⁵

Hayek regards socialism as a desire to restore the solidarity and altruism of tribal life within the modern extended order, and thus views its aspirations as a hopeless anachronism.¹⁶ In a similar way, Rand views socialism as a desire to remake modern society in a tribal form in order to free individuals from the need to take full responsibility for their lives, motivated fundamentally by the desire to escape the risk and effort of thinking for themselves. Socialism, in effect, is the desire to make the world safe for the anti-conceptual mentality.¹⁷

A second point of similarity is the recognition of generality as an essential element in law. This is one of Hayek’s major themes; he contributed in a significant way to the analysis and defense of the rule of law, and he stresses the abstract character of proper laws.¹⁸ A central requirement is that laws must apply uniformly to all people (or at least to all who meet a general condition set by the law). In particular, the law must apply to ruler as well as the ruled, an essential condition for the goal of being ruled by law, not by men. The function of such generality is not only to meet a standard of justice, but also to serve an epistemological function: to allow people to make long-

Objectivist Epistemology, ed. Harry Binswanger and Leonard Peikoff, 2nd expanded ed. (New York: New American Library, 1990), chaps. 2-3

¹⁴ Ayn Rand, “The Missing Link,” in Ayn Rand, *Philosophy: Who Needs It* (New York: Bobbs-Merrill Company, 1982), p. 47.

¹⁵ *Ibid.*, pp. 48-50.

¹⁶ Hayek, *Fatal Conceit*, chaps. 4-5.

¹⁷ Ayn Rand, “For the New Intellectual,” in Ayn Rand, *For the New Intellectual* (New York: New American Library, 1961), pp. 10-57. Unlike Hayek, Rand rejects socialism primarily on ethical grounds; she rejected the subjection of the individual to the collective and the underlying ethic of altruism. Nevertheless, as she explains in this essay, she regarded the anti-conceptual mentality as one of the cultural bases for altruist and collectivist doctrines.

¹⁸ See especially Hayek, *Constitution of Liberty*, part II.

range plans because they know in advance what the legal consequences of their actions will be.

Rand would certainly have agreed with this point, given her view that the principles of individual rights are required to allow individuals to act on the basis of reason in a social context. Law in her view must be objective, and her idea of objective law included the formal elements associated with the rule of law. Laws must be general in scope and uniformly applied, with objective procedures for proving criminal guilt and resolving civil disputes.¹⁹ She also wrote extensively about the destructive effects of the discretionary, non-objective nature of government regulations such as anti-trust.²⁰

Rand and Hayek, then, are aligned both in recognizing that the nature and power of reason depends on abstractions, and in using the distinction between concrete and abstract to explain a range of social phenomena. Despite these similarities, they differ radically about the nature, origins, and objectivity of abstractions. That difference is the chief topic of the rest of this article. In the next two sections, I summarize the theories Rand and Hayek put forward. I then turn to the significant points of difference between them.

4. Rand's Theory of Concepts

In her monograph *Introduction to Objectivist Epistemology*, Rand addresses the philosophical issue that is known variously as the problem of universals or the problem of concepts or abstractions. The core of the problem is to explain how concepts for types of things and attributes relate to the particulars we observe in the world. A concept such as 'human' is universal. It includes each and every individual human being. It is not a name for any one person or set of people, but refers indifferently to things that are numerically different. In addition, concepts are abstract. The concept 'human' abstracts from the specific characteristics on which individual people differ, such as height, hair and skin color, sex, occupation, etc. Any individual must have some particular height, color, sex, etc., but may have any within a certain range. Even the rational capacity, an essential feature of humans as such, comes in many specific forms; people differ in degree of intelligence, knowledge, and every other dimension of rationality, and the concept 'human' abstracts from all such differences. To say that John is human and that Jane is human is to make exactly the same claim about them, despite their many differences as individuals. In short, concepts are *universal*: they refer

¹⁹ Ayn Rand, "The Nature of Government," in Rand, *Virtue of Selfishness*, pp. 107-15.

²⁰ Ayn Rand, "America's Persecuted Minority: Big Business," in Ayn Rand, *Capitalism: The Unknown Ideal* (New York: New American Library, 1967), pp. 44-62. See also Ayn Rand, "Antitrust: The Rule of Unreason," in *The Voice of Reason: Essays in Objectivist Thought*, ed. Leonard Peikoff (New York: Meridian, 1989), pp. 254-59.

indifferently to instances that are *numerically* distinct. And they are *abstract*: they refer indifferently to instances that are *qualitatively* distinct.

What we observe in the world, however, are particular things, not universal types as such, and those things are specific, determinate, and concrete, not abstract. So the epistemological question is: How could we acquire cognitive devices with those properties? How—by what process—do we acquire concepts that are universal and abstract when everything present to our senses is particular and concrete? As John Locke puts the issue: “[S]ince all things that exist are only particulars, how come we by general terms; or where find we those general natures they are supposed to stand for?”²¹ The related question is: What justifies us in using concepts when they do not correspond to anything in the world that is actually universal or abstract? In what sense can they be objective?

Rand’s primary concern was to answer the second question—that is, to show how concepts are objective—but to do so she had to answer the first question, regarding the process of concept-formation. The process, she says, begins by grouping things together on the basis of their similarity to each other and their differences from non-similar (or significantly less similar) contrast objects. A child notices, for example, that the dogs he sees are similar, despite their specific differences in size, hair, degree of friendliness, etc. Those differences are certainly observable, but they are less salient than the substantive difference between any of the particular dogs and the cats or rabbits the child has seen. So the child groups those dogs together, isolating them mentally from the contrasting animals. That is the cognitive context in which the child can form the concept ‘dog’ to designate animals like the ones he has grouped together, a concept designating any animal that is similar to these along the relevant dimensions of similarity, such as shape and behavior.²²

In basing concept-formation on similarity, Rand is obviously rejecting the realist theory of universals put forward by many Aristotelians: that concepts correspond directly with some genuinely universal and/or abstract component in things. Abstractions do not exist as such in things, apart from our method of grouping and uniting them into a single object of thought. But she also rejects nominalist and conceptualist theories which explain concepts in terms of similarity, because those theories have never given an adequate account of similarity itself, something she regards herself as doing. For Rand, the grouping of similar objects in isolation from contrast objects is only the first stage in concept-formation. She refers to the members of such a group as “units,” a term reflecting her insight that similarity is a quantitative relationship. What makes two or more things similar is that their specific

²¹ John Locke, *Essay Concerning Human Understanding*, ed. Alexander Campbell Fraser (New York: Dover Publications, 1959), vol. 2, III.iii.6, p. 16.

²² Rand, *Introduction to Objectivist Epistemology*, chap. 2.

characteristics are *commensurable*: they differ in degree on some dimension of measurement. One dog is taller than another, for example, one has longer hair, etc. The second stage of the process is the omission of the measurements of the units. Since the units differ only in degree, we can abstract from the differences and thereby treat the units as identical. We integrate the initial units of the group into a new mental unit, the concept ‘dog’, on the principle that a given dog must have some specific height, hair length, degree of friendliness, etc., but may have any degree (within a specific range) on those dimensions.²³

Rand elaborates and builds on this theory of abstraction in her monograph, and a number of secondary works examine the theory in detail.²⁴ For our purpose of contrasting Rand and Hayek, however, we need only consider two additional points.

The first is the primacy of perception. As an empiricist, Rand holds that the entire conceptual level of knowledge rests on the evidence of the senses, the direct, pre-conceptual perception of objects in the environment. On Rand’s view, it is from direct perceptual awareness of things in the world—and their specific qualities, actions, and relationships—that we form our *initial* stock of concepts. To be sure, the vast bulk of our concepts are not directly formed from perception. Most of them are “abstractions from abstractions,” to use Rand’s phrase.²⁵ We use concepts already acquired to identify more complex similarities and differences among things, including things that are not directly observable, and thereby form higher-level concepts such as ‘government’, ‘justice’, ‘particles’, to mention a few. Nevertheless, the first-level concepts formed from perception are necessary to get the process going. Perception is where cognition begins.

The second point is the objectivity of concepts. The question of objectivity, as noted above, is whether concepts can be considered objective, given that they do not correspond to anything literally universal or abstract in the things themselves. The fact that concepts are derived from perceptual

²³ In speaking of the attributes or characteristics that are common to the referents of a concept, or to the dimensions on which they are commensurable, Rand is not treating them as realist universals. What exists are the specific, determinate characteristics of things and their specific, determinate quantitative relationships. A dimension of measurement is an ordered set of such relationships. See David Kelley, “A Theory of Abstraction,” *Cognition and Brain Theory* 7 (Winter 1984), pp. 26-27, accessed online at: <http://www.atlassociety.org/sites/default/files/TheoryofAbstraction.pdf>.

²⁴ In addition to Kelley, “A Theory of Abstraction,” see David Kelley and Janet Krueger, “The Psychology of Abstraction,” *Journal for the Theory of Social Behaviour* 14, no. 1 (March 1984), pp. 43-67; Leonard Peikoff, *Objectivism: The Philosophy of Ayn Rand* (New York: Dutton, 1991), chap. 3; and Allan Gotthelf, *On Ayn Rand* (Belmont, CA: Wadsworth, 2000), chaps. 6-7.

²⁵ See Rand, *Introduction to Objectivist Epistemology*, chap. 3.

awareness of those things provides part of the answer. What we perceive is “out there,” and the content of perception is a constraint on the concepts we form. That content includes the entities present to our senses, including such of their specific qualities, actions, and relationships that our senses can detect. It also includes the specific similarities those entities have in virtue of those features.

In addition, Rand argues that objectivity does not require a one-one correspondence between concepts and abstract elements in the world. Even more generally, she argues that the objectivity of any mode of cognition—perceptual or conceptual—does not require that the mind mirror reality in some diaphanous way. Our cognitive capacities are natural, biologically rooted functions. They operate in specific ways to produce our awareness of reality.²⁶ If Rand’s theory about the process of concept-formation is correct, then a concept formed in accordance with that process is a valid, objective way to grasp its referents. The nature of the process sets constraints on concepts over and above the need for a perceptual basis. “Rand’s Razor,” for example, prescribes that “concepts are not to be multiplied beyond necessity,” a standard one would violate by forming a concept on the basis of a superficial similarity and thus trying to unite into a single unit items that are essentially different.²⁷ This standard is based on the nature and proper functioning of the process of concept-formation and conceptual thought. Objectivity, then, must be understood as having two elements: (1) an orientation to reality and commitment to taking account of all but only the facts one observes, and (2) the exercise of one’s conceptual capacity in accordance with standards that govern proper functioning.

5. Hayek on Abstraction

To understand Hayek’s view of abstraction, we can begin with his conception of moral rules as lying “between instinct and reason.” Such rules are inherently abstract; they prescribe a *kind* of action in a *kind* of situation. While the rules can sometimes, and to some extent, be articulated explicitly, they normally operate below the level of consciousness. In his theory of mind and knowledge, Hayek extends this concept of preconscious abstractions beyond the normative realm, applying it to the entire realm of cognition and its neurological basis. In all of its operations, says Hayek, the mind operates in accordance with abstract rules, based on classifications of stimuli affecting the sense organs and of patterns of behavioral responses. These abstractions are required even in the elementary perception of concrete objects, and therefore

²⁶ Ibid., chap. 8; David Kelley, *Evidence of the Senses* (Baton Rouge, LA: Louisiana State University, 1986), chap. 1; David Kelley, “Rand and Objectivity,” *Reason Papers* 23 (Fall 1998), pp. 83-86.

²⁷ Rand, *Introduction to Objectivist Epistemology*, p. 72.

cannot be derived from prior sensory awareness of those objects, as Rand (and many other empiricists) have held. As Hayek puts it in “The Primacy of the Abstract”:

[A]ll the conscious experience that we regard as relatively concrete and primary, in particular all sensations, perceptions and images, are the product of a super-imposition of many classifications of the events perceived What I contend, in short, is that the mind must be capable of performing abstracting operations in order to be able to perceive particulars, and that this capacity appears long before we can speak of a conscious awareness of particulars.²⁸

Hayek does not refer to these preconscious classifications and abstracting operations as concepts, but treats them as having the core attributes of concepts: they are both universal and abstract, subsuming numerically and qualitatively distinct items.

In defense of his view, Hayek cites a number of theories in ethology, linguistics, and psychology. The most significant for our purposes is his reference to Hermann von Helmholtz’s theory of “unconscious inference” in perception. Helmholtz, one of the founders of scientific psychology, bases his view of perception on the doctrine that sensations of isolated sensory qualities (a patch of color, a sweet taste, a feeling of warmth, etc.) are the basic mode of sensory awareness, and that perceiving objects as entities possessing those qualities is the result of integrating sensations through inference. He posits, for example, that the visual perception of an object at a distance in three-dimensional space results from inferring what external object, at what distance, could produce the sensations one experiences.²⁹ Many of the theories of perception developed since that time have been variants of Helmholtz’s. The significance for Hayek, of course, is that inference is an operation in which a propositional conclusion is derived from premises or data in accordance with logical rules, and is thus an *inherently* abstract operation.

In his earlier work *The Sensory Order*, Hayek developed his own speculative theory of perception. Like other theorists, he takes his task to be that of explaining how the order of sensory qualities relates to the external world, with the physiology of the nervous system as the intervening explanatory level. His basic idea is an early version of what is now called

²⁸ Friedrich A. Hayek, “The Primacy of the Abstract,” in Friedrich A. Hayek, *New Studies in Philosophy, Politics, Economics and the History of Ideas* (London: Routledge & Kegan Paul, 1978 [1969]), pp. 310-11.

²⁹ Hermann von Helmholtz, *Popular Scientific Lectures*, ed. Morris Kline (Mineola, NY: Dover Publications, 1962), p. 178. For an analysis and critique of this view, see Kelley, *Evidence of the Senses*, chap. 2.

connectionism or neural net theory.³⁰ Stimulation that activates receptor cells in the sense organs sends neural impulses into layer after layer of intervening cells. When these impulses result in the activation of the same response at some layer of the network, the stimuli are “classified” as the same:

By ‘classification’ we shall mean a process in which on each occasion on which a certain recurring [neural] event happens it produces the same specific effect All the different events which whenever they occur produce the same effect will be said to be events of the same class, and the fact that every one of them produces the same effect will be the *sole* criterion which makes them members of the same class.³¹

It is only when this classification has occurred that there can be any sensation of sensory qualities such as red, round, hot, loud, salty, etc. Since a classification is an abstraction, the theory embodies Hayek’s general view on the primacy of the abstract: “If sensory perception must be regarded as an act of classification, what we perceive can never be unique properties of individual objects but always only properties which the objects have in common with other objects.”³² Perceiving an apple, for example, requires a prior classification of it as red, round, having a glossy surface, etc., and is never just perception of *this* apple *here* as a particular.

Hayek also notes that the sensory order evolved to serve the organism’s need to act. He goes on to claim, accordingly, that the neural states underlying the sensory order are characterized not only by incoming stimulation, but also by the outgoing action impulses they evoke. And just as those states specify abstract properties of the stimulus object, they specify abstract kinds of action to take. In this respect, they have the character of rules: if the object is of type X, then perform action of type Y, where X and Y are classes. As Hayek puts it,

[t]hese several dispositions toward *kinds* of movements can be regarded as adaptations to the typical features of the environment, and the ‘recognition’ of such features as the activation of the kind of disposition adapted to them. The perception of something as ‘round’, e.g., would consist

³⁰ See Barry Smith, “The Connectionist Mind: A Study of Hayekian Psychology,” in *Hayek, the Economist and Philosopher: A Critical Retrospect*, ed. Stephen Frowen (New York: St. Martin’s Press, 1997), pp. 9-30.

³¹ Friedrich A Hayek, *The Sensory Order: An Inquiry into the Foundations of Theoretical Psychology* (Chicago, IL: The University of Chicago Press, 1952), p. 48.

³² *Ibid.*, p. 142.

essentially in the arousal of a disposition toward a class of movements of the limbs.³³

These classifications and rules give rise, over time, to a stable representation of the external environment. But this representation is a “distorted reproduction” of objects in that world. Impulses from objects that appear similar are classified together despite differences in the way they act; objects are classified separately even though they behave in the same way. A higher level of neural activity, however, gives rise to conscious perceptual awareness. Though the conscious mind knows of the world only through the classes established by the sensory systems, it is capable of revising those classifications (i.e., the assignment of qualities to objects): “The new classes formed by a rearrangement of the objects of the sensory world are what are usually described as abstract concepts.”³⁴ Despite the higher and more accurate level of classification, however, the underlying process is essentially the same. Concepts, conceptual thought, and abstract reasoning are ultimately operations of the central nervous system that are different in degree but not in kind from the formation of preconscious classifications of sensory impulses.³⁵

6. Hayek’s Functionalism

It is difficult to compare Hayek’s view of abstraction with Rand’s directly.³⁶ Rand is concerned with the metaphysical and epistemological issues in the classical debate about universals and concepts, while Hayek was concerned with issues in what now would be described as philosophy of mind and cognitive science. Hayek neither addresses the classical problems, nor develops any theory of how abstractness and universality are possible. Rand, for her part, offers nothing beyond a few observations about the relation of the conscious mind to the physical brain, which she regards as chiefly a scientific issue.³⁷

Nevertheless, there are clear points of difference between their views of abstraction underlying the basic differences I outlined above about the power of reason. The first of these has to do with consciousness and intentional content. In describing the preconscious operations of the nervous system, Hayek is talking about nerve cells and/or neural circuits. He is

³³ Hayek, “Primacy of the Abstract,” p. 315.

³⁴ Hayek, *Sensory Order*, p. 145.

³⁵ *Ibid.*, pp. 108, 145-46.

³⁶ The only previous systematic comparison, to my knowledge, is Larry Sechrest, “The Irrationality of the Extended Order: The Fatal Conceit of F. A. Hayek,” *Reason Papers* 23 (Fall 1998), pp. 38-65.

³⁷ Rand, *Introduction to Objectivist Epistemology*, pp. 289-90.

speculating about the causal operation of a physical system. In describing the physical system as “classifying” the stimulus (or the neural impulses), he is attributing intentional content to these physical states. On the face of it, this attribution involves an equivocation between causal regularities that we *describe* abstractly and cognitive processes that *employ* abstractions. Natural and man-made physical systems respond in causally regular ways to the factors that affect them. A motion-sensitive light, for example, will respond in the same way to any motion within the range of its infrared device; *we* would describe this in terms of the abstractions ‘motion’ and ‘light’, but the light is not literally employing these concepts, since it is not in the business of classifying, abstracting, or conceptual recognition. The same distinction—and apparent equivocation—applies to Hayek’s description of physical states that embody rules. There is a difference between acting *in accordance with* a rule and *following* one. A projectile “follows” a parabolic path determined by initial angle and momentum, and we can compute the path it will follow from the relevant equation with a specification of initial conditions, but the projectile itself is not literally following that rule by computing what path to take. Instead, it merely behaves in accordance with a rule. Neurons, circuits, and other neural features react in regular (though highly complex) ways to similar stimuli, but this does not mean that the brain is literally classifying those stimuli or following rules.

For many philosophers of mind, however, the motivation for ascribing content to physical states of the brain is precisely to reduce intentionality to causal regularity, and this appears to be Hayek’s view as well. Hayek adopts a position that would now be described as *functionalism*, according to which a mental state is a physical state whose content is nothing but the complex of relations with other physical states that constitute its input (ultimately from sensory stimulation) and its output (ultimately in behavior). Consciousness, on this approach, is an accidental and possibly dispensable attribute of intentional states.³⁸ Hayek claims, for example, that sensory qualities have no intrinsic phenomenological quality; their content consists solely in their effects on other mental states or on behavior.³⁹ In light of his claim that higher-level conceptual thought is to be understood in the same terms, he would presumably agree with contemporary functionalists that even conscious ideas are to be analyzed in functional terms. The content of the belief that snow is white, for example, is entirely relational; it consists in the fact that the belief-

³⁸ For a good introduction to contemporary functionalist theories, see Janet Levin, “Functionalism,” *Stanford Encyclopedia of Philosophy*, accessed online at: <http://plato.stanford.edu/entries/functionalist/>. For a classic statement of the view, see Daniel Dennett, “Intentional Systems,” in Daniel Dennett, *Brainstorms* (Montgomery, VT: Bradford Books, 1978), pp. 3–22.

³⁹ Hayek, *Sensory Order*, pp. 15-16, 18, 35, and 119. See also Hayek, “Primacy of the Abstract,” pp. 315-16.

state arises from certain stimulus conditions and that it results in certain further thoughts and behavior.

Rand, by contrast, holds that intentional content cannot be divorced from consciousness. Consciousness is an axiomatic concept, identifying the basic fact of awareness of objects in the world—from the most primitive sensation to perceptual awareness to conceptual thought and the highest reaches of knowledge in science and philosophy. On her view, every form of cognitive content is a mode of consciousness, in the same way that the distinctive attributes of particular things in the world are modes of the axiomatic concept *identity*. The operations of the nervous system can be described in causal terms, but ascribing content to them without reference to consciousness—describing these states as engaged in abstraction, classification, inference, rule-following, representing objects, etc.—is illicit.⁴⁰

Rand did not deny the existence of subconscious states and processes that have content but are not conscious at a given point in time. On the contrary, she emphasizes their importance, especially in regard to concepts and conceptual thinking. Since the scope of conscious attention—the number of cognitive units we can attend to simultaneously—is very limited, concepts perform the function of unit-reduction. They replace the mass of perceptual information about things of a kind with a concept for that kind. The concept functions as a single mental unit, and the cognitive links that connect it with its referents are automated as subconscious processes that enable us to recognize new instances.⁴¹ Nevertheless, as against the functionalist view that content can be ascribed to neural states without any reference to consciousness, Rand holds that subconscious states are automatizations of information and cognitive procedures that were previously learned consciously. And such states are open to conscious access and recall, at least in principle. In that sense, the concept of nonconscious states with content is dependent on the concept of consciousness.⁴²

7. Hayek's Kantianism

In Hayek's view, perceptual experience and the conscious reasoning based on it are shaped by a preconscious framework of abstract categories and connections among categories. If these abstractions and abstract cognitive operations are not derived from conscious perception, then where do they come from? Some of them are hard-wired, produced by the evolution of the brain; others are established by preconscious processing in the life of the individual. From an epistemological standpoint, both are *a priori*. The result is

⁴⁰ Rand, *Introduction to Objectivist Epistemology*, chap. 4.

⁴¹ *Ibid.*, chap. 7.

⁴² See John Searle, *Rediscovery of Mind* (Cambridge, MA: Bradford Books, 1992), chap. 7, for a more developed version of this view.

a materialist version of Kantianism: we do not grasp reality as it is, but only the representation of reality structured by the categories we impose on it. (While Hayek draws more on Hume overall in his moral and political theory, his theory of cognition has much in common with Kant's, as Hayek himself acknowledges.⁴³) The features we attribute to perceived objects, he says, are not "properties of that object at all, but a set of relations by which our nervous systems classifies them." Perception is "theory-laden," to use the conventional philosophical term. Hayek goes so far as to claim that we could not perceive a fundamentally new kind of object or attribute for which we had no prior abstract category.⁴⁴

From Rand's Objectivist standpoint, any such claim is self-refuting, since it cannot be applied to itself. Writing as a social scientist—putting forward claims about the operation of the nervous system, social and cultural evolution, law, politics, and economics, including his Nobel-Prize-winning work—Hayek presumably means to be taken as describing reality as it is. It is impossible to interpret his theses as a social scientist and philosopher of science unless he means to assert them as true of the world, and true of human knowers including himself, not merely as an expression of his own conceptual framework. But the content of his theory of knowledge implies that his theses *are* just the expression of his conceptual framework. In short, *what he asserts* is not consistent with *what he presupposes* in asserting it.

In any case, any such Kantian perspective is unjustified, since it claims to be based on actual knowledge to make its case. This includes observations and theories from brain science, psychology, ethology, and other sources of specific scientific knowledge, as well as the evolutionary theory of natural selection, which is Hayek's basic reason for thinking there is a general correspondence of mental contents with facts of reality. Hayek draws on all of this knowledge, with apparent confidence that it identifies facts about the world, to support his thesis that our "knowledge" of the world is at best a model that we can revise to some extent but can never fully validate.⁴⁵

⁴³ Hayek, "Primacy of the Abstract," p. 319.

⁴⁴ Hayek, *Sensory Order*, pp. 143 and 176; Hayek, "Primacy of the Abstract," pp. 38-39. See also Robert Nadeau, "Hayek and the Complex Affair of the Mind," paper delivered at the Sixty-Seventh Annual Conference of the Southern Economic Association, Atlanta, Georgia, November 21-23, 1997, Panel session on "Hayek and the Theory of Complexity," p. 6, accessed online at: http://www.er.uqam.ca/nobel/philuqam/dept/textes/Hayek_on_Mind.pdf.

⁴⁵ On the internal conflicts of Kantian theories, see Kelley, *Evidence of the Senses*, pp. 27-35; and the exchange regarding that analysis in David Kelley, Tibor Machan, and Peter Munz, "Letters: The Evidence of the Senses," *Critical Review* 2, no. 4 (1988), pp. 183-87.

8. Active versus Passive Cognition

The final point of contrast between Rand and Hayek concerns the question of whether and to what extent conceptual thinking is an active or a passive process. The question is not about the nervous system, which is obviously engaged in a whirlwind of activity, but about the conscious subject of knowledge. To what extent do individuals act as *agents* in control of the process of thought? To what extent do individuals initiate cognitive processes? To what extent are individuals capable of generating new ideas by thinking outside of their inherited traditions or acquired conceptual framework?

Rand holds that the conceptual level involves active cognitive processing, which we as cognitive subjects have the ability (and responsibility) of initiating, directing, and validating. She holds that forming concepts, unlike perceiving, is an active process of integrating classes of things and differentiating them from other things. Her famous injunction “check your premises” reflects her view that we are capable of identifying the implicit assumptions in our conceptual framework in order to question their truth and revise them as needed.⁴⁶ Her novels dramatize these views through characters who exhibit great initiative as independent, innovative thinkers.

Rand also believes in free will, in the strong sense in which it affirms that we face alternative possibilities open to choice, and denies that all thoughts, choices, and actions are necessitated by antecedent factors. She locates man’s freedom in the choice to think, to raise the level of conscious attention, and to direct attention to relevant facts in the course of reasoning. As noted above, Rand does not speculate about the mind-brain relation, and thus does not offer any specific theory of how the choice to think relates to underlying physiological processes. In my view, the most promising approach is the view of consciousness as an emergent property of the brain’s interaction with the world, a control mechanism that serves the purpose of maintaining unity of action when the nervous system has evolved to a certain level of complexity. Freedom of will is then a further level of emergence related to the additional complexity of the greatly expanded cortex in human beings and the attendant capacities for conceptual thought and self-awareness.⁴⁷

In his political works, Hayek also stresses the creative powers of human beings when left free of coercive controls. But such creativity, he claims, is less the result of conscious thought than of evolution through social selection. The value of freedom is not primarily to enable individuals to innovate by rational insight, but rather to allow a proliferation of ideas, preferences, and practices from which the processes of social selection will

⁴⁶ See, e.g., Rand, “Philosophy: Who Needs It,” in Rand, *Philosophy: Who Needs It*, pp. 1-11.

⁴⁷ Cf. Ayn Rand, “The Metaphysical Versus the Man-Made,” in Rand, *Philosophy: Who Needs It*, p. 34.

filter out the unsuccessful ones.⁴⁸ By the nature of his view of mind, moreover, Hayek is a determinist. The mind just is the brain, the totality of neural states and processes engaged in dynamic interaction with its environment; ontologically, “mental phenomena are ‘nothing but’ physical processes.”⁴⁹ To be sure, he emphasizes that we could never predict or control the thoughts, feelings, or actions of an individual on the basis of underlying physical causes. That would require the impossible task of identifying every dimension of the individual’s neural constitution, every sensory stimulus throughout his life, every dimension of every interaction with his social environment, etc. As a result, Hayek says, we necessarily use the language of mind to describe cognition and action, and we must treat the individual as a unique agent of his actions.⁵⁰ This “as-if” volition, however, is merely a methodological limitation. It does not change the fact of actual determinism, nor does it alter Hayek’s claim that conscious thought operates within a system of preconscious abstractions. Conscious thought gives us some ability to modify our categories and conceptual framework, but not much. As he says in “The Primacy of the Abstract,”

the formation of abstractions ought to be regarded not as actions of the human mind but as *something which happens to the mind, or that alters the structure of relationships which we call the mind* In other words, we ought to regard what we call mind as a system of abstract rules of action . . . ; while every appearance of a new rule (or abstraction) constitutes a change in that system, something which its own operations cannot produce but which is brought about by extraneous factors.⁵¹

It is worth noting here the parallel between Hayek’s spontaneous-order model of society and his theory of mind and knowledge. In his social theory, society is the system, the units are individuals, and their interactions produce a spontaneous order in which there is coordination among individuals but no top-down control. We can understand the general causal principles of the economic system, based on the structural rules that govern interactions among people, but we could not possibly assemble all of the specific local knowledge that determines the specific prices and outputs of the system in such a way as to predict those outputs. In Hayek’s theory of mind and knowledge, the

⁴⁸ Hayek, *Constitution of Liberty*, chap. 2.

⁴⁹ Hayek, *Sensory Order*, pp. 35 and 191.

⁵⁰ *Ibid.*, pp. 193-95. See also Gary T. Dempsey, “Hayek’s Evolutionary Epistemology, Artificial Intelligence, and the Question of Free Will,” *Evolution and Cognition* 2 (1996), pp. 139-50.

⁵¹ Hayek, “The Primacy of the Abstract,” pp. 317-18, emphasis added.

individual is now the system, the units are neural cells, circuits, and larger structures, and their interactions produce a spontaneous order—an order in which there is coordination and coherence in action but at best little top-down control.

9. Conclusion: Hayek and Rand on Epistemology and Politics

The purpose of this article has been chiefly descriptive and explanatory. My goal has been to explain why Rand and Hayek have such different views about the efficacy of reason and its role in the case for a free society by describing their respective theories of abstraction. Those theories belong to the domains of epistemology and philosophy of mind. As an Objectivist epistemologist and philosopher of mind, I side with Rand on every point of contrast, and consider Hayek's approach fundamentally wrong-headed, as the works of mine I have cited will make clear. In any case, these are the domains in which their theories must be evaluated. One cannot validly argue for the truth of one theory in these domains over the other by reference to which provides the best support for political freedom; political philosophy is a derivative branch of inquiry, dependent on prior assumptions about human nature and knowledge.

That said, I believe that Rand's theory of concepts supports a view of knowledge and mental functioning that in turn provides the strongest support for individualism and freedom. On her theory, individuals have voluntary choice over the exercise of their conceptual faculties. Those who take responsibility for thinking, and for acting on the basis of their reason, need freedom from those who don't; and since knowledge is contextual and error is possible, individuals need the freedom to agree or disagree with others and to act independently. Freedom, she says, "is the fundamental requirement of man's mind."⁵²

Hayek's view of abstractions, on the other hand, undermines individualism by eliminating the basis for a coherent conception of the human individual. When he writes about economics and politics, he stresses the individual as a possessor of local knowledge and a source of creative innovation. But his psychological and epistemological theory implies that individuals are less agents than mere crossroads in which genetic, physiological, and social influences interact. Just as would-be government planners of an economy have no way to govern the economy top-down in a rational way, so, for Hayek, the individuals who are the real units of economic activity are equally unable to know and govern themselves by reason. If a defense of freedom depends on individualism, and individualism presupposes individuals capable of genuine self-direction, Hayek cannot successfully defend freedom. He certainly does not provide a moral ideal worth striving for.

⁵² Ayn Rand, "What Is Capitalism?" in Rand, *Capitalism: The Unknown Ideal*, p. 17.

