FRANK KNIGHT ON RISK, UNCERTAINTY, AND THE FIRM: A NEW INTERPRETATION

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We attempt to interpret Frank Knight by taking him on his own terms. Among our conclusions are the following. (1) Knight's distinction between risk and uncertainty is not solely a distinction between insurable and uninsurable risk. (2) Knight's explanation for the existence of firms does not reduce to a moral-hazard theory, except perhaps in the broadest and least-interesting sense. And (3) Knight's treatment of the problem of the separation of ownership from control is not as obviously wrong as commentators have made it out to be.

I. INTRODUCTION

For decades now, economists have struggled to interpret Frank Knight's *Risk, Uncertainty, and Profit*. Like a handful of other classic texts—*Das Kapital* and *The General Theory* come to mind—it has produced nearly as much confusion as inspiration, nearly as much misinterpretation as interpretation. *Risk, Uncertainty, and Profit* is a brilliant book. But it is also idiosyncratic in scope and method. Worse yet, in the eyes of the modern economist, it is deeply philosophical. The resulting combination of bedazzlement and puzzlement has led successive interpreters to commit a variant of the sin supposedly characteristic of eighteenth-century Whig historians: they have interpreted the ancient text in the narrow light of their own generation's favored theories and received categories of analysis. These interpreters feel free to ignore those of Knight's musings that fail to fit the mold, marking them down to Knight's own confusions.

The issues here are not purely ones of intellectual history. The issues Knight addressed remain as important and divisive today as when he wrote. LeRoy and Singell [1987] suggest the importance of Knight's conception of uncertainty to macroeconomic modeling. Moreover, the award of the 1991 Nobel Prize to Ronald Coase signals the profession's increasing interest in the firm *qua* organization rather than *qua* production function.[1] Much of the third part of *Risk, Uncertainty, and Profit* is devoted to the very issues Coase addressed in his seminal 1937 article: the rationale for the business firm. We argue that, although much less well known to the profession than Coase's work, Knight's oft-misunderstood analysis of the firm has much to contribute to today's literature.

Risk, Uncertainty, and Profit is firmly grounded in static neoclassical theory, and the second of its three parts is a forceful restatement of the theory of perfect competition. Yet, the book is very much a

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1. As Coase [1992] himself suggests.

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challenge to neoclassical theory, especially so in Parts I and III. This tension—if one can call it that—explains in part the peculiar pattern of misinterpretation that has plagued the text. Almost since the beginning, economists have sought to comprehend Knight's troubling discussion of risk, uncertainty, and organization by casting it in the framework of neoclassical thinking popular in their own day.

This tendency to Whig history has led to a succession of differing interpretations. For instance, Knight's distinction between risk and uncertainty has been taken to differentiate between the measurability/unmeasurability or objectivity/subjectivity of probability, or between the insurability/uninsurability of probabilistic outcomes. An early generation of interpretations took the position that by risk Knight meant situations in which one could assign probabilities to outcomes and by uncertainty situations in which one could not.[2] This way of framing the distinction fit in well with the rhetoric of the debate between proponents of an objective theory of probability and adherents to subjective probability theory. Moreover, as the latter had effectively routed the former (at least in principle)[3] within the realm of theoretical economics, this framing of the distinction made it possible to ignore situations of uncertainty entirely: for if probability consists in a decision-maker's subjective assessment, then there is no state of the world whose probability cannot be articulated.[4] By definition, all probabilistic situations are matters of risk.

Although this interpretation has passed so deeply into the consciousness of economists that it remains dominant today,[5] LeRoy and Singell [1987] have recently produced an interpretation that is much closer to the mark. In their view, Knight understood perfectly well that agents could form subjective probability assessments of any situation. The distinction Knight actually intended was that between situations in which insurance markets can operate smoothly (risk) and situations in which insurance markets would collapse because of moral hazard and adverse selection (uncertainty).

There has been a similar evolution in the interpretation of Knight's theory of the firm. The received view here, equally ingrained, is that Knight explained the firm on the basis of differential risk aversion between entrepreneur and worker. This interpretation rests on Knight's [1921, 269] characterization of the firm as "the system under which the confident and venturesome 'assume the risk' or 'insure' the doubtful and timid by guaranteeing the latter a specified income in return for an assignment of the actual results." So seriously has this interpretation been taken that Kihlstrom and Laffont [1979] used it as the basis of an influential formal model of the "Knightian" firm. Recently, however, Barzel [1987b] has suggested an alternative. While not denying the validity of the received view, he argues that Knight had a "second" theory of the firm. This one, he thinks, turns on the failure of markets in the presence of moral hazard. This theory is quite well developed, making it a puzzle for Barzel why Knight reverted to the unsatisfactory "guaranteeing" theory of the firm.

2. The *locus classicus* is probably Friedman [1976, 282].

3. In fact, of course, most if not all modeling of the interaction among decision-makers requires that probability distributions be both objective (accurately reflective of observed frequencies of states of the world) and intersubjectively shared. For a relevant discussion, see High [1990, chapter 3].

4.

5. As an example chosen more-or-less at random, consider Zeckhauser [1987, 257]: "Since the time of Frank Knight, economists have paid attention to the distinction between risk (where probabilities are known) and uncertainty (where they are unknown)." Zeckhauser goes on to criticize the distinction—along lines that come close to what (we argue) Knight actually intended.

Our solution to the mystery is quite simple: Knight never held the "guaranteeing" theory, at least not in the way it is usually understood. It is our contention that both received interpretations—of the risk/uncertainty split and of the Knightian theory of the firm—are flat-out wrong.[6] And, although the newer interpretations by Barzel and by LeRoy and Singell are considerable improvements, they too are incomplete.[7] The reason, we argue, is that interpreting Knight solely in terms of moral hazard and adverse selection narrowly understood is to write the same kind of Whig History that underlies the received views. As LeRoy and Singell make clear in the last two sentences of their paper, they see Knight as having imperfectly (albeit brilliantly) anticipated the present-day theory of asymmetric information. This theory, we might add, holds the same sway over the thinking of economists today that concepts like subjective probability and risk aversion held in the years when the received interpretations of Knight took hold.

Instead of examining Knight through the lens of modern-day theory, we ought to understand him in terms of his own categories of thought. In this light, we contend, what appears to present-day scholars as imperfect anticipations of the modern-day theory of asymmetric information show up instead as challenges to and criticisms of that theory.

II. KNIGHT'S CONCEPTUAL FRAMEWORK

In order to understand Knight on his own terms, one has to begin by taking seriously what LeRoy and Singell, accurately reflecting the disdain of most economists, describe as "Knight's extended Austrian-style disquisitions on the foundations of human knowledge and conduct and the like."[8] The reason we need to take these passages seriously is that they help us understand Knight's own categories of analysis. Some of the issues Knight repeatedly raises may not have much voice in today's terminology, but they may still be important—and necessary for a proper understanding of his views.

Perhaps the most straightforward way to approach Knight's philosophy is to recall the distinction he constantly makes between the mechanical and the organic (biological) frameworks. Mechanistic thinking views human behavior and institutions as static, machine-like entities, whereas organicistic thinking invokes notions such as change and process. Knight sees the distinction as essential, repeatedly showing the limitedness of the mechanical analogy in understanding enterprise and profit.

Knight's distinction between risk and uncertainty contrasts the mechanical and organic domains. Perfect knowledge in the mechanistic domain contrasts with imperfection in organic life, which brings out the importance of consciousness. The task of meeting uncertainty in an economic system is analogous to the brain of a living organism. In cases of uncertainty, he argues, "the internal organization of the productive groups is no longer a matter of indifference or a mechanical detail. Centralization of this deciding and controlling function is imperative, a process of 'cephalization', such as has taken place in the evolution of organic life, is inevitable, and for the same reasons as in the case of biological evolution" [pp. 268–9]. The crucial manifestation of this "cephalization"

6. A point on which, in the first instance, we agree with LeRoy and Singell.

7. The interpretation of Knight implicit in Boudreaux and Holcombe [1989] does, however, come close to our own.

8. It is in fact strikingly insular to identify these concerns with "Austrian" economists. An interest in the philosophy of knowledge and the springs of human action was an important part of economic thought before the formalist revolution of the 1930s, and such "disquisitions" can be found in many writers, including Smith, Marx, Mill, Marshall, and Keynes.

in Knight's theories of uncertainty and organization is the phenomenon of judgment. Understanding the role of judgment in economic life, we argue, is the key to understanding Knight.

III. RISK AND UNCERTAINTY

In Knight's view, uncertainty arises out of our partial knowledge. "The essence of the situation is action according to *opinion*, of greater or less foundation and value, neither entire ignorance nor complete and perfect information, but partial knowledge" [p. 199]. The key issue, however, is to understand what the partialness is about. Does it imply that probabilities are unmeasurable or subjective, or does it imply something else? Knight's use of partial knowledge, we argue, reveals that his distinction between risk and uncertainty has more to do with the initial classification of random outcomes than with the assignment of probabilities to the outcomes.

Knight's main concern was about the possibility of classifying the "states of nature." "When our ignorance of the future is only partial ignorance, incomplete knowledge and imperfect inference," he says, "it becomes impossible to classify instances objectively" [p. 259]. The point is not so much that we do not know probabilities as that we do not know the classification of outcomes. Knight makes this clear when he contrasts situations of uncertainty with the world described by the competitive models, arguing that "it is unnecessary to perfect, profitless equilibrium that particular occurrences be foreseeable, if only all the alternative possibilities are known and the probability of the occurrence of each can be accurately ascertained" [p. 199]. Notice here both sides of the conjunction: one must first know which alternatives are possible. The distinction between risk and uncertainty arises not because there is no basis for assigning probabilities, but because "there is no valid basis of any kind for classifying instances" [p. 225].

Barzel and LeRoy-Singell see this to some extent when they talk about the failure of insurance markets, which rely on classifiable instances. But there is more involved, we argue, than moral hazard and adverse selection as those concepts are normally understood. It is possible to have problems of moral hazard and adverse selection without having the kind of uncertainty Knight was concerned with. In neoclassical models of these phenomena, the goods to be produced are given, and both their existence and their nature are agreed upon by all producers and consumers. Even when some participants in the market have more information about some products than do others, they nonetheless all share the same conceptual categories about the products. In the well-known "lemons" models pioneered by Akerlof [1970], for example, sellers know better than buyers whether a particular car is a lemon; but all know that there are both lemons and non-lemons in the market and all agree on what it means for a car to be a lemon. By contrast, uncertainty as Knight understood it arises from the impossibility of exhaustive classification of states.

To see this more clearly, consider Knight's use of the expression "estimate of an estimate" in describing uncertainty. Such terms, largely overlooked by Knight's interpreters, are quite essential, and indeed provide further support to our argument. Knight writes: "Fidelity to the actual psychology of the situation requires, we must insist, recognition of these two separate exercises of judgment, *the formation of an estimate and the estimation of its value*. We must, therefore, disagree with Professor Irving Fisher's contention that there is only one estimate, the subjective feeling of probability itself" [p. 227, emphasis added]. Knight makes it quite clear in this passage that the two estimates are separate entities.

Notice also that he seems to have in mind for the first something qualitative. The original judgment may be not a probability estimate but a scoping out of the likely effects of action. When a decision maker faces uncertainty (a situation in which "there is no valid basis of any kind for classifying instances"), he or she would have first to "estimate" the possible outcomes to be able to "estimate" the probabilities of occurrence of each. The first step requires judgment and intuition rather than calculation. Consider this Knightian illustration: "A manufacturer is considering the advisability of making a large commitment in increasing the capacity of his works. He 'figures' more or less on the proposition, taking account as well as possible of the various factors more or less susceptible of measurement, but the final result is an 'estimate' of the probable outcome of any proposed course of action" [p. 226].

Knight also makes it clear that the second estimate is probabilistic. Recognizing the possible qualitative nature of the first and the (subjective) probabilistic nature of the second clarifies the controversy over the applicability of probabilistic calculus in cases of uncertainty. LeRoy and Singell are right indeed in pointing out that Knight accepted the applicability of probabilistic calculus. But they seem to miss Knight's more important point that it is only partly applicable. Consider, for instance, one passage they quote from Knight to support their argument: "Yet it is true, and the fact can hardly be overemphasized, that a judgment of probability is actually made in such cases [i.e., in situations of uncertainty]. The business man himself not merely forms the best estimate he can of the outcome of his actions, but he is likely also to estimate the probability that his estimate is correct" [p. 226]. LeRoy and Singell conclude from the passage that Knight accepted subjective probabilities. While that may be true, more relevant for the distinction between risk and uncertainty is Knight's insistence on the separateness of the two exercises of judgment and his emphasis on the situation prior to the assignment of probabilities. The subjectivity, objectivity, or applicability of probabilities become of secondary importance once the categories are "estimated." The distinction between risk and uncertainty, once again, is attributable to the classification of instances rather than to the nature of probabilities the decision maker assigns to the "estimated" classifications.

Why was this important for Knight? When the categories of knowledge themselves are unknown, they cannot form the basis of interpersonal agreement and market exchange. In situations of risk, categories—like "house burns down" or "house doesn't burn down"—can be shared and agreed upon interpersonally. This allows markets (in the narrow sense of simple contracts mediated by price) to function well enough. But when the categories are unknown, the parsimonious information mechanism of the market is not up to the task. In such situations, as we shall see, firms supersede markets.

IV. KNIGHT'S THEORY OF ORGANIZATION

How do business people form the original estimates? Knight urges us to contrast decision making in business with the formal processes of logic "by recognizing that the former is not reasoned knowledge, but 'judgment,' 'common sense,' or 'intuition'" [p. 211]. With judgment we convert our lack of knowledge about the classification of outcomes into a form that can be used for action. In Knight's words, "[t]he best example of uncertainty is in connection with the exercise of judgment or the formation of those opinions as to the future course of events, which opinions (and not scientific knowledge) actually guide most of our conduct" [p. 233].

To understand the role of judgment in Knight's theory of the organization, we need first to inquire into how individuals differ from one another and how specialization takes place in the presence of uncertainty. People differ, first of all, "in their capacity by perception and inference to form correct judgments as to the future course of events in the environment." Second, there are differences in "men's capacities to judge means and discern and plan the steps and adjustments necessary to meet the anticipated future situation" [p. 241]. The differences among individuals will lead to specialization with respect to their respective skills.[9] The fundamental difference between situations of risk and of uncertainty is that in the presence of uncertainty business organizations experience a "cephalization," with the assignment of certain individuals to leadership positions. In Knight's words, "[t]he result of this manifold specialization of function is *enterprise and the wage system of industry*" [p. 271, emphasis original].

Knight examines specialization under two different organizational forms: in the idealized owner-managed firm and in corporations. In the idealized firm the specialization is between the entrepreneur and the worker(s). Uncertainty will lead to the "tendency of the groups themselves to specialize, finding the individuals with the greatest managerial capacity of the requisite kinds and placing them in charge of the work of the group, submitting the activities of the other members to their direction and control" [p. 269]. Notice here that the basis of specialization is skill in judgment and managerial capacity and not risk aversion. His discussion of pure and individual entrepreneurship (the simple owner-managed firm) is based on the assumption that it is impossible for individuals to possess or gain knowledge of each other's capabilities. That would mean that the functions of responsibility and control would coexist and form the function of pure entrepreneurship.

The situation becomes more complicated, however, when we consider the possibility of forming opinions about the capacities of other people. Indeed, judgment by individuals of each others' capabilities becomes the major consideration in explaining entrepreneurship in the corporate form of organization.

In his discussion of the methods for meeting uncertainty, Knight considers the possibility of forming classes by grouping the decisions of a given individual over time. "Men do form, on the basis of experience, more or less valid opinions as to their own capacity to form correct judgments, and even of the capacities of other men in this regard" [p. 228]. While this possibility becomes a way for one individual to gain confidence in his or her judgments, it also implies that one can also form judgments of other people's capabilities. In later chapters Knight makes the possibility of judging other people a central element in his explanation of the corporation. In fact, he views the crucial judgment as the judgment about people: "Business judgment is chiefly judgment of men" [p. 291]. Judgment of others becomes a matter of classifying instances, since the string of judgments a person makes is a kind of statistical time series even when substantive contents of the individual judgments themselves could not have been easily classified. Thus, the possibility of judging others' abilities leads to the possibility of substituting a judgment about other people for a judgment on outcomes directly—"dealing with and knowing men rather than things" [p. 302n].

9. There is a pronounced tendency in Knightian scholarship to view Knight as *sui generis*. In fact, this division-of-labor theory of the response to uncertainty is clearly an outgrowth of the Marshallian tradition of the early century, which discussed organization in precisely these Smithian terms (Langlois [1992]). It is extremely significant in this regard that Knight had been the student of Allyn Young, one of the best and most innovative in this tradition. The connection between Young's thought and Knight's theory of organization is an important subject for future research.

We can summarize Knight's theory of organization this way: Because of the non-mechanical nature of economic life, novel possibilities are always emerging, and these cannot be easily categorized in an intersubjective way as repeatable instances. To deal with this "uncertainty," one must rely on judgment. Such judgment will be one of the skills in which people specialize, yielding the usual Smithian economies. Moreover, some will specialize in the judgment of other people's judgment. As the literature since Coase [1937] suggests, however, a theory of specialization is not by itself a theory of organization, since, in the absence of transaction costs, there is no reason why the division of labor could not be undertaken through markets rather than within a firm. Knight's answer is that the function of judgment is ultimately non-contractible.[10]

In this sense, one could argue that a proper Whig History would have found the modern incarnation of Knight's theory of organization not in the theory of moral hazard and asymmetric information, but in the incomplete-contracts theory of integration.[11] The story goes something like this. Contractual rights can be either specific or residual. Residual rights are claims to whatever is not specifically mentioned in a contract. Thus, to the extent that transacting parties cooperating in production cannot fully specify all the possible contingencies, their contracts will be incomplete; and there will be residual rights, namely, the rights to exercise control in the absence of specific contractual provisions. Possessing such a residual right is what it means to own the firm. The analysis is complex, and its results derive from specific models with whose assumptions one could quibble. But Grossman and Hart [1986] conclude generally that, for efficiency, that party should own an asset whose control of it is most important to the joint product.

This theory is not ultimately incompatible with the notion of moral hazard and the conclusions it reaches are in many respects similar to those reached by Barzel [1987a].[12] Because of the possibility of moral hazard, Barzel argues, that person should own an asset (become the residual claimant) whose own behavior is most costly to monitor. The other agents cooperating in production receive fixed-pay contracts. This assumes the incompleteness of contracts, of course, but links that incompleteness to one specific cause, namely the possibility of moral hazard.

The incomplete-contracts view offers a clear interpretation of Knight's notion of guaranteeing: it is not so much that the residual claimant *insures* the other agents (although Knight did use this language); rather it is simply that, because of non-contractibility, the optimal arrangement is one in which some agents receive a residual claim and others a fixed claim. Having recognized this, however, we should not lose sight of the fact that there was more to Knight's theory than what is contained in the present-day theory of incomplete contracts. For one thing, Knight took the analysis to a higher level of explanation, pointing out not only the effects but also the cause of contractual incompleteness, namely, lack of knowledge of the categories of action and the consequent need for judgment. Contractual incompleteness is ultimately a matter of uncertainty. Moral-

10 See, e.g., p. 311.

11. Grossman and Hart [1986]; Hart [1988; 1989].

12. In fact, though he invokes asset-specificity theorists Williamson [1985] and Klein, Crawford, and Alchian [1978], Hart [1988] presents a model the essence of which is moral hazard not asset specificity and holdup costs. Alchian and Woodward [1988] argue that moral hazard and holdup are two different kinds of "opportunism," reflecting two distinct traditions in present day transaction-cost economics. See also the recent views of Coase [1988].

hazard or holdup costs are the results of contractual incompleteness, not its cause. Moreover, unlike present-day theories, Knight's theory has the implication that we should look for contractual incompleteness—and therefore residual-claim or ownership status—wherever there is a need for judgment.[13]

V. RESPONSIBILITY AND CONTROL

There remains one issue that may seem troublesome for our interpretation: Knight's alleged neglect of the problem of the separation of ownership from control.

Knight insisted that the entrepreneurial function is necessarily twofold, encompassing both responsibility and control.[14] In the owner-managed firm, the possibility of judging others' capabilities presents no problem in terms of the separation of responsibility and control, even when the owner hires a manager to do the "controlling." Knight denies entrepreneurship to the hired manager (in this ideal-typical kind of firm) since, in his view, the ultimate control and responsibility both rest with the owner. In such a firm the controlling function is spread in a hierarchical work structure. The owner directs the hired manager and controls his or her functions by using judgment of the manager's capabilities. Similarly, the manager has other employees whom he or she controls using judgment of them, and so on. The ultimate control and responsibility therefore falls onto the owner, the pure entrepreneur of the firm.

The situation is more complicated when the ownership of the firm is divided among several parties in a partnership or a corporation. In the absence of a sole owner, pure entrepreneurship is impossible to find.[15] But the real issue is whether the entrepreneurial functions of responsibility and control are separated. Knight's answer is no. Entrepreneurship may be diffused within the firm. In general, the owner of each productive input contributes to entrepreneurship. But this happens only to the degree of responsibility and control that person assumes. Such contributors (owners of labor or capital) are sharing the uncertainty as long as the guarantees are not absolute. To that extent they are given some controlling power, too. The stockholders, for instance, can use their voting power to control a firm (to a degree). Therefore, the entrepreneurial function, even though it may be diffused within the firm, nevertheless unites responsibility and control.

Moreover, control and "guaranteeing" do not seem to be identical. It is true that Knight saw the entrepreneur in the ideal owner-managed firm as providing guarantees to the workers. But Knight is just as clear that the guaranteeing function is not necessary to entrepreneurship, and is in fact separable from it.

> The simplest division of entrepreneurship which we can think of is the separation of the two elements of control and guarantee and their performance by different individuals. This is a natural arrangement, for it must often happen that entrepreneur ability will not be associated with a situation on the part of its possessor enabling him to make satisfactory guarantees of the contractual incomes promised. Under such circumstances it may be mutually profitable for him to enter into agreement with some one in a position to un-

13. Indeed, Knight virtually defines the residual claim in terms of the exercise of judgment, and specific claims as "contractual returns received for services not involving the exercise of judgment" [p. 280].

14. See, e.g., p. 271.

15. Readers impatient with "extended Austrian-style disquisitions" are also likely to miss the subtle distinction between what an older literature would have called ideal types and real types. Knight's entrepreneur is an ideal type, and, as such, may not be isomorphic with such concrete types as salaried manager, stockholder, worker, or input supplier.

> derwrite his employment contracts, but not himself possessed of the ability or disposition to undertake the direction of enterprises. The form of this partnership and conditions of the division of the profit may be highly various. As a matter of fact we know that it commonly takes the shape of a new wage bargain, the guarantor hiring the director in much the same way as the latter hires the productive services which he organizes and controls [p. 289].

The guarantors (shareholders) and the hired manager thus share the entrepreneurial function. Both have responsibility and control (as these cannot be contractually separated), but only one has the guaranteeing function (which can be contractually separated from other aspects of entrepreneurship).

This passage also suggests that Knight's views on the separation of ownership from control are not as naive as commentators have maintained. For example, LeRoy and Singell [1987, 403–4] accuse Knight of having denied both the existence of a principal-agent problem and the possibility that salaried managers can ever perform the function of entrepreneurship. They cite a passage in which Knight argues that *"when control is accurately defined and located,* the function of making decisions and assuming the responsibility for their correctness will be found to be one and indivisible" [p. 294, emphasis added]. But this passage makes our case not theirs. For, as the emphasized phrase makes clear, we have to define control in Knight's terms not our own. And, for Knight, "[w]hat we call 'control' consists mainly in selecting someone else to do the 'controlling'" [p. 291]. As a logical matter, then, shareholders retain "control" in Knight's sense to the extent that they have any power to select management.

Now, it is certainly true that Knight did not provide a micro theory of control that would have included the idea of, say, free-rider problems in stockholder voting.[16] But, contrary to what LeRoy and Singell assert, Knight did not consider the shareholder the principal locus of entrepreneurship in the modern corporation. Far from denying entrepreneurship to salaried managers, Knight stressed that such managers hold important responsibility for selecting other managers and also have significant residual-claim status. "Let us note here," he writes, "that it is usually impracticable to separate all the guaranteeing responsibility from the control of the enterprise." By this, however, he does not mean that shareholders have more control than is normally thought; he means that salaried managers have more guaranteeing responsibility than is usually thought. "It is rare," Knight continues, "that a hired entrepreneur receives a contractual income as his only interest in the business. He is usually a part owner, or at least his salary is so adjusted as to make it clear that his continuance in the position is contingent upon its prosperity under his direction" [p. 290]. In fact, Knight took precisely the position LeRoy and Singell accuse him of not having taken.[17] One might even say that, for Knight, the closest approximation in concrete terms to the ideal type of the entrepreneur is the top manager of the corporation, not the stockholder.

16. William S. Kern [1988] argues, however, that Knight paid a good deal of attention to such problems in his later work, especially in the public-choice context.

17. Compare LeRoy and Singell [1987, p. 404]: "Knight's denial that salaried managers are in fact performing the function of entrepreneurship is, of course, absurd: at least in the modern large corporation, the representatives of owners and creditors have delegated much of their power to salaried managers. This was only slightly less true in Knight's day than now. Rather than deny that salaried managers are managers, Knight would have done better to deny that they are salaried (in the sense of being paid at a rate that does not depend on performance): incentive contracts, stock options, and the like put the income of the salaried manager of a large firm in a position similar to that of the proprietor of a small firm. Even managers who at a given time are on straight salary are well aware that their salaries will vary over time according to their success in managing the firm."

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