

RESEARCH ARTICLE

The common sense of economics and divergent approaches in economic thought: a view from *Risk, Uncertainty, and Profit*

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Abstract

This paper evaluates the contribution of *Risk, Uncertainty, and Profit* to the development of economic theory in the 20th century. Our argument in this paper is twofold. First, we contend that this book embodied what had been the common knowledge of early neoclassical economics prior to World War II (WWII). Second, we also argue that embryonic to Knight's account of economics were two divergent approaches to economic thought that emerged after WWII. The first approach, what has come to be known as *microeconomics*, is characterized by utility maximization under fixed price, income, and institutional parameters that approximate equilibrium. This first approach is distinct from a second approach, referred to as *price theory*, in which prices are not sufficient statistics, as in microeconomics, but operate as guides to consumption and production decisions under alternative institutional arrangements. This second approach not only represented the continuation of the mainline¹ of economic thought from its classical and early neoclassical roots. It also embodies the basis for Knight's understanding of uncertainty, profit and entrepreneurship, as well as its implications for economic organization and social progress.

Key words: Entrepreneurship; Frank Knight; microeconomics; price theory

1. Introduction

Frank Knight is making a comeback in the economic conversation. If the advent of the shift toward the digital economy suggested to many that the theorist of the age was no longer Keynes or Friedman, but Schumpeter and his idea of creative destruction, the uncertainty and tensions in the liberal project as well as modern financial economy has brought a renewed interest in Frank Knight. Knight's famous distinction between risk and uncertainty are now front and center in economic discourse with works, such as John Kay and Mervyn King's *Radical Uncertainty* (2020), or Jens Beckert and Robert Bronk's edited *Uncertain Futures* (2018). The events of 9/11, the global financial crisis, the COVID-19 pandemic, let alone, political unrest in previously stable liberal democratic societies has made many doubt that the world is understandable through rational calculation of a measurable variety. Human actors, instead, are ensnared in the 'dark forces of time and ignorance' as Keynes (1964 [1936]: 155) eloquently put it, and they must stumble and grope their way through rather than fall into the abyss.

¹The term 'mainline economics' (Boettke, 2012) refers to the set of substantive propositions held in common among economists, which trace their origin back to Adam Smith. These include the following: '(1) there are limits to the benevolence that individuals can rely on and therefore they face cognitive and epistemic limits as they negotiate the social world, but (2) formal and informal institutions guide and direct human activity, and, so (3) social cooperation is possible without central direction' (Boettke *et al.*, 2016: 4).

Kenneth Boulding, a student of Knight's, used to say that the real world is a muddle, and it would be a shame if we were clear about it. The point he was trying to stress is that one can avoid the abyss either by trivializing the problem with heroic cognitive assumptions, or tackle the problem by looking at the institutional arrangements and organizational structures that evolve to enable individuals to cope with their ignorance and manage the uncertainty of the future.² It would be an intellectual mistake to trivialize, yet that is what those who insist on reducing all uncertainty to measurable risk do in their effort to operationalize economics via a model and measure approach. Knight, on the other hand, went against that trend and embraced human ignorance and radical uncertainty. Therefore, his ideas are becoming more prevalent than in the past. According to Google Scholar, *Risk, Uncertainty, and Profit* has garnered, since its publication in 1921, 25,071 citations in the professional literature, but 15,833 of those citations are in the last decade. With 2021 representing the 100th anniversary since its original publication, combined with this renewed interest in his core ideas, one can expect that interest in Knight's work will only continue to grow.

Moreover, in recent years, there has been outpouring of renewed interest in the Chicago price theory tradition and its evolution, beginning with the 'Old' Chicago School of Frank Knight, Jacob Viner, and Henry Simons, to the 'New' Chicago School that developed under Milton Friedman, George Stigler, and Gary Becker (Buchanan, 2020 [2010]; Emmett, 2009; Hammond *et al.*, 2013; Irwin, 2018; Medema, 2014; Mitch, 2016). Our own contribution to this literature has been to identify 'a neglected branch of Chicago price theory' (Boettke and Candela, 2014, 2017a, 2020a) that could trace its intellectual ancestry back to Knight, such as Armen Alchian, James Buchanan, and Ronald Coase. This neglected branch, as we have argued, was distinct from the 'New' Chicago School that emerged in the post-World War II (WWII) era.

More importantly for our argument, this suggests that there is 'a tale of two Knights' (Boettke and Candela, 2020b) to be told, one of these Knights embodying the common knowledge held not just among Chicago economists, but among neoclassical economists prior to WWII, and another Knight from which we can trace a divergence between what is traditionally known as *microeconomics* and *price theory*, which are distinct approaches to economic theorizing that are often conflated. Both approaches have a methodological origin, as they take the economizing behavior of the individual as their analytical starting point. Microeconomics focuses almost exclusively on atomistic choice as the basis for *optimization* within given constraints, in which equilibrium outcomes are simply the aggregate summation of atomistic optimizers. Price theory, however, takes open-ended human choice in a world of uncertainty as the methodological basis for *exchange* behavior, from which exchange ratios (i.e. relative prices) emerge to guide the mutual adjustment and coordination between consumer and producer decision-making.³ Such mutual adjustment creates a coordinative tendency toward equilibrium that is compositive of, although distinct from, human choices.⁴ Thus, our contribution here is to contend that such a tale begins in *Risk, Uncertainty, and Profit*.

²Paralleling Knight (1967 [1933]: 35), Boulding (1946: 237) elaborates on this point, 'Economic problems have no sharp edges; they shade off imperceptibly into politics, sociology, and ethics. Indeed, it is hardly an exaggeration to say that the ultimate answer to every economic problem lies in some other field. Economics is the skeleton of social science; the backbone and framework without which it degenerates into an amorphous jellyfish of casual observation and speculation. But skeletons need flesh and blood; and the flesh and blood of economic problems can only be found in the broader fields'.

³In a recent paper by Weyl (2019: 329), price theory is defined as 'as neoclassical microeconomic analysis that reduces rich and often incompletely specified models into "prices" (approximately) sufficient to characterize solutions to simple allocative problems'. Weyl's definition of price theory is more consistent with our definition of microeconomics, and therefore more closely identified with the more well-known branch of Chicago price theory that was developed by Friedman, Stigler, and Becker, and more recently rearticulated by Jaffe *et al.* (2019).

⁴As Hirschleifer *et al.* reinforce our point (2005: 94, fn. 1): 'The optimum of the consumer is sometimes rather carelessly referred to as the "equilibrium of the consumer". Such wording blurs the distinction between the two key analytical concepts of microeconomics: finding an equilibrium versus finding an optimum. An optimum is the best possible action available to a decision-maker. In contrast, an equilibrium represents a balance of the actions of many independent decision-makers, for example, the balance between the overall forces of supply and demand in a market. Individual consumer choice is an optimization problem, not an equilibrium problem'. This distinction is also made more recently by Jaffe *et al.* (2019: 2–4).

Re-reading *Risk, Uncertainty, and Profit* is a reward in itself, as the reader is transported back to a time when economists were philosophers, when depth and clarity on theoretical issues was the aspiration, and that goal was not divorced from making sense of the messy and complicated reality of the world that was the object of study. Knight's work makes significant contributions to epistemology, to economic method and theory, and to social theory and social philosophy. His work inspired various strands of thinking which we will try to trace and connect. In doing so, it is our hope to demonstrate that not only Knight's concerns with radical uncertainty, but his approach has much to offer contemporary social science and social philosophy.

Our paper will proceed as follows. In section 2, we will begin with a discussion of the place of Knight's book in the modern history of economic thought, and the contribution he made to the mainline of economic science in the first half of the 20th century. In discussing the contributions it will be necessary for us to try to capture the common knowledge of economic theorists at the time of publication. In section 3, we will then discuss how that common knowledge was lost, and how it was reclaimed in the second half of the 20th century in the evolution of a genuine institutional economics. Finally, in section 4, we will discuss the evolutionary potential of Knight's *Risk, Uncertainty, and Profit* to shape contemporary research in economics, political economy, and social philosophy. Section 5 concludes with summary remarks.

2. The common knowledge of early neoclassical economics

When Wesley C. Mitchell (1922: 274) reviewed *Risk, Uncertainty, and Profit* in the *American Economic Review*, he argued that '[a]nyone acquainted with the exposition of economic theory from Jevons and Clark to Wicksteed and Schumpeter can forecast the course of the discussion which follows'. In his *Quarterly Journal of Economics* review of Knight, Watkins (1922: 683) argued that 'the reader who is tolerably well-read in economics can practically ignore the first two parts, altho [sic] they contain evidences of astute thinking as well as of comprehensive reading in the literature of economics'. Both are ultimately favorable reviews, although Mitchell's is by far the stronger of the two. Still, Watkins (1922: 689) does conclude 'that the author has made a contribution to the theory of profit that no student of the subject can afford to neglect'. However, Mitchell (1922: 275) describes Knight's work as 'fresh work of a young man of marked ability ... a young man interested in economic history and philosophy' as well as rigorous thinking in pure economic theory. Knight's work is described as an attempt to explicate and refine 'conventional economic doctrines' (Mitchell, 1922: 275) and as such is building on the work of Clark and Fisher, as well as Fetter and Davenport.

The history of the writing and reception of *Risk, Uncertainty, and Profit* has been told in a fascinating paper by Ross Emmett (2020). He points to the different prefaces that Knight provided over the years to the London School of Economics reprints as a window into Knight's self-understanding of his project. We will come back to this source of information at different segments in this paper, but critical to understanding where Knight sees his work fitting into the body of economic science, as understood by his contemporaries, is provided by the original preface to the work in 1921. Knight begins by telling his readers that 'There is little that is fundamentally new in this book' (1971 [1921]: ix). He is hoping to make progress on the 'problem of profit' (1971 [1921]: xi), a topic suggested to him by his original thesis advisor Dr Alvin Johnson, and then completed in 1916 under the direction of Professor Allyn A. Young, after Johnson left Cornell. Knight then explains that he was then able to continue his post-doctoral studies under the direction of Professor John Maurice Clark, and then later benefited from Professor Jacob Viner's feedback. The supervision of Johnson, Emmett explains, ensures familiarity with the American literature in early neoclassical economics, while the direction of Young would bring the British and European literatures into the discussion. Knight also had language capabilities in German, and some working knowledge of Italian was well. As was pointed out in the reviews of Mitchell and Watkins, Knight had a full command of the literature on both sides of the Atlantic, and in the classical and neoclassical form.

The *common knowledge* of theoretical economics circa 1920 was one in which economic theory was understood to be a theory of price *formation*, guiding consumers and producers in a tendency toward

equilibrium, not a theory of price *determination* sufficient to define an equilibrium state of affairs (Machovec, 1995). Individuals choose on the margin, and they choose based on their subjective assessment of the trade-offs they must make in the face of scarcity, from which exchange, and hence exchange ratios (i.e. prices) emerge. Furthermore, the systematic pattern of the market system emerges from ‘a complex mass of interrelated changes’ (1971 [1921]: 3). Thus, the economizing activity of the individual was understood to be a necessary, although not a sufficient condition, for the coordination of individual plans consistent with an equilibrium state of affairs. Only under conditions of perfect foresight would optimizing behavior predetermine the vector of prices sufficient for equilibrium in both consumption, by making ‘money costs equal to selling prices’, and production, by distributing ‘the whole product among the productive agents participating’ (Knight, 1964 [1957]: lix). Absent perfect foresight, however, the role of the entrepreneur is to coordinate the consumption and production plans of individuals into greater harmony. Knight’s contribution to this common knowledge was to explicate the underlying basis for uncertainty, which could not be imputed into prices, and thus the existence of profit (and loss) as ‘unimputable income’ (Knight, 1971 [1921]: 308), creating a role for the entrepreneur in equilibrating the market process. Thus, Knight’s fundamental goal was, fundamentally, to explicate a theory of price formation from its classical and early neoclassical roots, one in which perfect competition was utilized, *not* as a description of reality, but as a ‘foil’ from which to contrast the conditions under which uncertainty and profit exist.⁵ ‘The primary attribute of competition, universally recognized and evident at a glance’, Knight states, ‘is the “tendency” to eliminate profit or loss, and bring the value of economic goods to equality with their cost’ (1971 [1921]: 18). Hence, ‘the problem of profit is one way of looking at the problem of the contrast between perfect competition and *actual* competition’ (emphasis added, 1971 [1921]: 19).

Part 1 of *Risk, Uncertainty, and Profit* is an introductory discussion of the problem of profit, and the theory of choice and exchange. Part 2 is devoted to articulating the preconditions of perfect competition, and part 3 develops ‘Imperfect Competition Through Risk and Uncertainty’. The entire argumentative arc of the book is constructed to highlight the contribution of part 3. It is here that Knight makes his contribution to the theory of entrepreneurship, and the remuneration of the entrepreneur’s special function in the market society in the form of profit.

In developing neoclassical price theory and the theory of the market economy, Knight proceeds along both methodological and analytical lines in detailing the pure theory of choice and exchange. For our purposes, it is critical to note what he is doing in the first and second parts of the book. Knight (1971 [1921]: 74) examines the ‘essence of a price system’ found in pursuing mutually beneficial exchange until all the gains from trade had been exhausted. The equimarginal principle, compensating differentials and the law of one price logically fall out of a system with rationality in the deliberation of choice among alternatives by individuals, and perfect mobility in all economic adjustments of plans. Coercion and predatory behavior are assumed to be precluded by the institutional framework of the private enterprise system; exchanges are voluntary and mutually beneficial. The abstract system Knight builds is meant to be constructed from the minimum necessary conditions, although obviously with a high degree of artificiality. With these assumptions in place, Knight (1971 [1921]: 81) argues that his ‘task is to form a picture of such a society in action, and to discover the conditions of equilibrium or natural results of the operation of the forces and tendencies at work in it’. All gains from exchange will be realized and all least costs methods of production will be utilized provided that ‘intercommunication is actually perfect’ (1971 [1921]: 82). As Knight pursues his

⁵Although general equilibrium was the main thrust of Walras’s analysis, to reinforce this point, even Walras understood that equilibrium ‘is an ideal and not a real state’ (emphasis added, Walras, 1954 [1874]: 224). Like Knight, Walras also employs a method of contrast, or ‘foil’ if you will, to explain the equilibrating dynamics of the market process in the presence of disequilibrium and the role that profit plays to guide and lure entrepreneurs in the allocation of resources to their most valued uses. Thus, ‘in a state of equilibrium in production’, Walras states, ‘entrepreneurs make neither profit nor loss’ (1954 [1874]: 225). The implication here is that, as Israel Kirzner argues (emphasis added, 1988: 2), is that ‘among most economists (Austrian, Marshallian, or Walrasian) in the early twentieth century, a superficial, shared understanding of markets that submerged important distinctions *that would become apparent only much later*’.

presentation of pure economic theory, as mentioned earlier, his command of the literature covers both sides of the Atlantic so the reader is treated to an ongoing conversation between Knight and Alfred Marshall and Francis Edgeworth, as well as John Bates Clark and Herbert Davenport.

Our point is just that there was a common knowledge in early neoclassical economics that Knight was elaborating, and there was a methodology and analytical method that they thought they shared. Moreover, Knight was not only aware of this common knowledge, but also recognized that his book was an extension of that common knowledge. ‘Whether or not the use of the method of exact science is as necessary in the field of social phenomena as the present writer believes’, Knight states, ‘it will doubtless be conceded, even by opponents of this view, that it *has been* employed in the great mass of the literature since the modern science of economics was founded⁶ (emphasis original, 1971 [1921]: 13). Economists saw their task as ‘showing how an objective and uniform price results from the palpably subjective and variable individual preferences’ (1971 [1921]: 85), accomplished through the bids and offers in the market, and the mutual adjustments that would engender perfect competition. The perfect intercommunication required to pursue the logic to its end means perfect knowledge, and perfect knowledge means that middlemen, speculators, and entrepreneurs would be unnecessary. Rates of return would be equalized, labor would earn wages, land would earn rents, and capital would yield interest. The prices that prevail in the market under these conditions follow naturally ‘from the single fundamental Law of Choice’ (1971 [1921]: 90).

Clark’s static state and Marshall’s long term are but different modes of expression of the same fundamental formulations of equilibrium conditions (1971 [1921]: 143). Pursued to its logical consistency, not only is the system defined by perfect knowledge but also is timeless. Any adjustments or adaptations required due to exogenous change would be instantaneous. All frictions are assumed away for analysis at this stage, and by doing so, Knight is clearing the ground for a discussion of uncertainty and the phenomena of profit (see 1971 [1921]: 175, fn. 1). In developing his approach, Knight is invoking a methodology of successive approximation that was developed by J. S. Mill; an approach where the abstractions from reality that were introduced to help work out the pure logic are now one by one to be relaxed. This is the method that Marshall developed in his *Principles of Economics* (emphasis original, 1890 [1920]: 287–288). Consider his example of equilibrium price resulting from market trading.

Such an equilibrium is *stable*; that is, the price, if displaced a little from it, will tend to return, as a pendulum oscillates about its lowest point; and it will be found to be a characteristic of stable equilibria that in them the demand price is greater than the supply price for amounts just less than the equilibrium amount, and *vice versa*. For when the demand price is greater than the supply price, the amount produced tends to increase. Therefore, if the demand price is greater than the supply price for amounts just less than an equilibrium amount; then, if the scale of production is temporarily diminished somewhat below that equilibrium amount, it will tend to return; thus the equilibrium is stable for displacements in that direction. If the demand price is greater than the supply price for amounts just less than the equilibrium amount, it is sure to be less than

⁶Indicative of this common knowledge was the fact that it was acknowledged among Knight’s contemporaries, not just among the Chicago School, but also the Austrian School as well. For example, from his lecture notes, dated June 17, 1930, Jacob Viner states the following: ‘Neoclassical economics is a sympathetic evolution of the English Classical School. Included under neoclassical economics is the English-American version in Taussig and Marshall and also the Austrian school, whose differences are not as important as the resemblances to the Anglo-American type. Included also is the Continental Equilibrium School or the Mathematical School, such as Walras, Pareto, and their followers. *They have much more in common with the neoclassicists than in dispute*’ (emphasis added, Viner, 2013: 19). Moreover, Ludwig von Mises reiterates this point in *Grundprobleme der Nationalökonomie* (1933), later translated in 1960 as *Epistemological Problem of Economics*, as stating the following: ‘Within modern subjectivist economics it has become customary to distinguish several schools. We usually speak of the Austrian and the Anglo-American Schools and the School of Lausanne’, each of which ‘*differ only in their mode of expressing the same fundamental idea and that they are divided more by their terminology and by peculiarities of presentation than by the substance of their teachings*’ (emphasis added, 2013 [1960]: 194).

the supply price for amounts just greater: and therefore, if the scale of production is somewhat increased beyond the equilibrium position, it will tend to return; and the equilibrium will be stable for displacements in that direction also.

When demand and supply are in stable equilibrium, if any accident should move the scale of production from its equilibrium position, there will be instantly brought into play forces tending to push it back to that position; just as, if a stone hanging by a string is displaced from its equilibrium position, the force of gravity will at once tend to bring it back to its equilibrium position. The movements of the scale of production about its position of equilibrium will be of a somewhat similar kind.

But in real life such oscillations are seldom as rhythmical as those of a stone hanging freely from a string; the comparison would be more exact if the string were supposed to hang in the troubled waters of a mill-race, whose stream was at one time allowed to flow freely, and at another partially cut off. Nor are these complexities sufficient to illustrate all the disturbances with which the economists and the merchant alike are forced to concern themselves.

But who in the real world must adjust and adapt to these constant changes in the marketplace and what tools do they employ in aiding them in this difficult task? This is where the role of the entrepreneur moves to the center of the analysis, in Knight's rendition, and the phenomena of profit and its function finds its purpose. If, on the other hand, imputation is perfect and adjustments are complete, entrepreneurship and profit will, by the logic of the analysis, be absent.

If knowledge is not perfect, and if the intercommunications of the market system are not perfect, then the anticipations of the future will be upset, and divergences between costs and prices which otherwise would have been equated through competitive forces will arise, and attract attention of those who are alert to the opportunity. Knight is working from within the common knowledge of classical and early neoclassical economics that sees the economic system as a complex and evolving system that requires constant adaptation and adjustment guided through the price system, with the lure of profit, and the penalty of loss. But in studying the complex and changing world, we need tools of analysis that enable us to isolate effects. Critical to Knight's analysis is that it is our ignorance of the future, and not change *per se*, that creates the unique features of economic order that excites the imagination of the theorist. The static conditions are necessary to the thought experiment, but it is human imperfections of the future that to Knight are the critical aspect to capture in order to understand economic order.

As Knight (1971 [1921]: 199) put it, 'If we are to understand the workings of the economic system we must examine the meaning and significance of uncertainty; and to this end some inquiry into the nature and function of knowledge itself is necessary'. Although the abstraction is a necessary first part of the analysis, it reduces the decision process to that of unconscious automata, whereas our science advances when we give priority to the 'image' of the future, and how adaptations and adjustments are linked neither to the present nor the past, but are 'spontaneous' and forward-looking. Human action, to Knight, is 'designed to change a future situation' (1971 [1921]: 201). Imperfect beings are interacting in an imperfect world by perceiving opportunities, imagining alternative possible futures, and contemplating what consequences their actions will have on outcomes. We are fallible, yet capable human choosers. Errors emerge throughout the process in the form of errors of perception and errors of execution. This error ridden process reveals the non-mechanical nature of the economic process, as machines, i.e., automata, would not in general make mistakes. Although human economic systems are neither deterministic as in a clockwork machine, nor completely chaotic to Knight, but instead systems that make use of 'workable knowledge' so that we can 'live intelligently' in our pursuit of productive specialization and realize peaceful social cooperation through exchange. But this understanding of the nature of free enterprise is not captured by the assumption of omniscience and the logical derivations of optimality conditions in a model of perfect competition that falls out of such an analysis. Instead, it is only when the theorist moves the focus of analysis away from perfect knowledge, and moves toward a notion just not just of measurable risk, but more importantly into realms of imperfect knowledge, that economic understanding advances.

It would seem that Knight's explication of the distinction between risk and uncertainty, the reduction of the latter being the fundamental basis of economic organization as well as social progress, placed him in uncharted territory as compared to the common knowledge embodied in early neoclassical economics. Recall from our introduction that we wish to situate Knight's contribution as one within the mainline of economic science, shared by economists going back to Adam Smith. 'There is', nonetheless, as Langlois and Coşgel (emphasis original, 1993: 461, fn. 9) have argued, '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' (see also Langlois [1992]). As Langlois and Coşgel (1993: 461, fn. 9) further state, 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'. Therefore, if we are to neglect the connection between Knight and Young's work on increasing returns and economic progress (Young, 1928), then we also lose the connection between Young and Marshall's understanding of economic organization, which in turn is rooted in the Smithian notion that the division of labor is limited by the extent of the market.⁷ A full digression into this mainline connection would go beyond the scope of this argument. However, an overview of this context is warranted to situate the relationship between Knight's theory of uncertainty and entrepreneurship, and its connection to economic organization and social progress.

The common theme running from Smith to Knight is the notion that social progress, and the improvements in economic organization associated with it, are fundamentally a by-product, not of increasing returns to scale in production *per se*, but of generalized increasing returns to the *scope* of market exchange⁸ (see also Boettke and Candela, 2017b; Langlois, 1992: 101). Knight's contribution within this framework was to explicate the theoretical relationship between uncertainty and the organizational and institutional innovations that emerge to reduce uncertainty associated with an ever-expanding scope of exchange between owners of land, labor, and capital. That is, whereas Smith regarded specialization under an ever-increasing division of labor as the basis of social progress, what Knight rendered more explicit from Smith (and Marshall) was to regard social progress as entailing specialization of uncertainty-bearing under an ever-increasing division of knowledge. 'The most fundamentally and irretrievably uncertain phases or factors of progress', according to Knight, 'are those which amount essentially to the increase of knowledge as such' (1971 [1921]: 318).

According to Knight, there are two fundamental methods of dealing with uncertainty, what he refers to as 'consolidation' and 'specialization', both of which 'are closely identified with the general progress of civilization, the improvement of technology, and the increase of knowledge' (Knight, 1971 [1921]: 239). Consolidation reduces uncertainty by the grouping of cases into a measurable, quantifiable probability distribution, or as Knight refers to as risk. As Knight (emphasis added; 1971 [1921]: 231–232) states, the 'business world *has evolved several organization devices* for effectuating this consolidation, with the result that when the technique of business is fairly developed, measurable uncertainties⁹ do not introduce into business any uncertainty whatsoever'. The example that Knight provides of an institutional arrangement that arises to reduce uncertainty by consolidation is insurance, which 'depends upon the measurement of probability on the basis of a fairly accurate grouping into classes' (1971 [1921]: 246), the most accurate being life insurance and the least accurate being insurance against sickness and accident (1971 [1921]: 247–248).¹⁰ Although consolidation is

⁷As Langlois (1992: 101) states this point, 'Marshall's vision of economic progress was basically a Smithian one... Economic progress, then, is for Marshall a matter of improvements in knowledge and organization as much as a matter of scale economies in the neoclassical sense. We can see this clearly in his "law of increasing return", which is distinctly not a law of increasing returns to scale'.

⁸This notion of generalized increasing returns was later revived by one of Knight's students, Nobel Laureate James Buchanan (see Buchanan and Yoon 1994, 1995, 1999).

⁹Knight uses 'measurable uncertainty' synonymously with 'risk' to distinguish from uncertainty, which is unmeasurable and for which the distribution of potential outcomes is unknown.

¹⁰For an excellent historical account of the relationship between risk reduction and economic progress, see Bernstein (1996).

necessary, it is not sufficient for the emergence of a particular type of economic organization, which is inextricably and uniquely tied to reducing ‘the uncertainty in an estimate of human capacity’ (Knight, 1971 [1921]: 309); the firm.¹¹ ‘It is this *true uncertainty*’, Knight (emphasis original, 1971 [1921]: 232) emphasizes, ‘which by preventing the theoretically perfect outworking of the tendencies of competition gives the characteristic form of “enterprise” to economic organization as a whole and accounts for the peculiar income of the entrepreneur’, which is *residual* income as opposed to the *imputed* income of land, labor, and capital (Knight, 1971 [1921]: 232). Therefore, the firm emerges not only when an entrepreneur becomes the residual claimant, or bears uncertainty, in the form of profit and loss, but ‘also guarantee[s] to those who furnish productive services a fixed remuneration’ (emphasis original, Knight, 1971 [1921]: 271).¹² Accumulations in capital and education (or human capital), as well as technological and organization improvements, are all necessary for economic progress, but according to Knight, cannot result without reductions of uncertainty, brought about by correct entrepreneurial judgment¹³ and specialization in ‘uncertainty-bearing’ (Knight, 1971 [1921]: 245). That is, the role of entrepreneur, operating under an institutional context of private property and freedom of contract under the rule of law, seizes profit opportunities and catalyzes economic progress through the reduction of uncertainty.

3. Common knowledge lost and found

Knight’s major contribution in *Risk, Uncertainty, and Profit* was to refine neoclassical price theory through the introduction of the distinction between risk and uncertainty, and the role and function of the entrepreneur and the phenomena of profit. It is important to stress at this point, that Knight did not see his role as that of *justifying* profit, or of building a normative case for the free enterprise system. Rather, he was in fact merely attempting to understand and explain. We bring that up because we will devote ourselves in the next section to explaining the relationship to economic and political liberalism according to Knight. But for now, the focus should be on his refinement to the emerging body of thought in the first decades of the 20th century. In parts 1 and 2, Knight worked out the logic of a world absent of uncertainty, and thus of profit, but in part 3 he introduces true uncertainty and thus *imperfect* competition. To Knight the distinction between risk and uncertainty can be explained as simply that for risk the distribution of outcomes is known, while for uncertainty this is not known (see Knight, 1971 [1921]: 233). The question is that in the face of uncertainty can we even talk about rational deliberation, or must we cease in any such analysis. When exercising judgment in our economic decision making, are we merely left adrift upon the turbulent seas, or do we have tools at our disposal that enable us to steer a course despite the rough and tumble of the voyage into an unknown future?

The complex coordination of plans that characterize a modern vibrant economy necessitates learning by actors looking into the future darkly. ‘Knowledge’, Knight states, ‘is more a matter of learning than of the exercise of absolute judgment. Learning requires time, and in time the situation dealt with, as well as the learner, undergoes change’ (Knight, 1971 [1921]: 243). The emphasis on learning leads

¹¹On the relationship between consolidation and specialization, Knight makes clear that ‘fundamental principle underlying organized activity is therefore the *reduction of uncertainty in individual judgements* and decisions by grouping the decisions of a particular individual and estimating the proportion of successes and failures, or the average quality of his judgements as a group. *It is an application of the broader principle of consolidation of risks, but the circumstances are peculiar*’ (emphasis added, 1971 [1921]: 293), in the sense that the specialization of the entrepreneur is in ‘knowledge of a man’s capacity to deal with a problem, not concrete knowledge of the problem itself’ (1971 [1921]: 296). See also Barzel (1987a, 1987b), Boudreaux and Holcombe (1989), Langlois and Coşgel (1993), Foss (1993), Foss and Klein (2012), and Bylund and Manish (2016) for other accounts of the Knightian firm.

¹²From a theoretical standpoint, Knight (1971 [1921]: 289, fn. 1) clearly makes an analytical distinction between the entrepreneur and an owner of resources in the firm, such as capital. ‘It does not follow that he would have to own property, though in the real world this is a practical consequence’.

¹³Knight defines judgment as ‘the formation of those opinions as to the future course of events’ (1971 [1921]: 233).

economic theory in one of the two possible directions for further refinement. We argue those are *behavioral* or *institutional*. The problem was for the subsequent history of economic theory is that during the 1930s–1950s, the economics profession worked not with Knight’s methodology for studying the world of uncertainty and change, but became fixated on the perfect competition model as developed in parts 1 and 2. There are at least two reasons for this, which we will not be able to elaborate on in this paper, but will note: (1) excessive aggregation with the emergence of Keynesian macroeconomics, and (2) excessive formalism in the development of mathematical representations of the model of general equilibrium and the variety of market failures. Both detracted away from the implications of uncertainty for the real world, namely how institutions emerge for individuals to cope with uncertainty. Therefore, both have roots in the *behavioral* turn to the question of uncertainty, and change. This explains why, for Keynes, the dark forces of time and ignorance in which economic actors found themselves ensnared were not manageable themselves through knowledge that is emergent within a system of private property, prices, and profit (and loss), but required management by actors outside of the system. To the equilibrium theorist, the introduction of the behavioral deviations from omniscience meant that the specified conditions of perfect competition could not be met, and therefore the *structure* of economic relations would be ‘imperfect’ or ‘monopolistic’.

A curious case in this regard is actually the development of the model of ‘monopolistic competition’ by Edward Chamberlin (1933). As Ross Emmett (2020) has explained, Chamberlin was motivated in his study by Knight when he was his student at the University of Iowa. There is a footnote in *Risk, Uncertainty, and Profit* that reads: ‘In view of the fact that practically every business is a partial monopoly, it is remarkable that the theoretical treatment of economics has related so exclusively to complete monopoly and perfect competition’ (1971 [1921], 193, fn. 1). Chamberlin never understood why Knight didn’t adopt his language and discuss monopolistic competition, but used the phrase imperfect competition. And Chamberlin also never understood why fellow Knight student (although at Chicago, not at Iowa) George Stigler reacted so strongly against the model of monopolistic competition. But both Chamberlin and Stigler, ironically, in our narrative of the evolution of neoclassical economics are victims of the loss of the common knowledge of early neoclassical economics. They both are fixated on parts 1 and 2, and fail to appreciate fully the refinements of part 3 of *Risk, Uncertainty, and Profit*.

We believe that this lost common knowledge resulted because of a subtle shift in the methodology and method of theoretical economics. Note what Knight says was his explicit method of analysis: ‘The best method seems to be to take up a society in which uncertainty is absent, imagine uncertainty introduced, and try to ascertain what changes will take place in its structure’ (Knight, 1971 [1921], 265). This approach is best known as the ‘method of contrast’, which is slightly different than the method of successive approximation that we mentioned above. Besides in Marshall, the method of successive approximations can also be seen in Knight’s *The Economic Organization* (1967 [1933]: 35), where he states that our ‘task of putting the complex and often unlovely flesh and viscera of reality upon this clean white skeleton of abstract principles must be carried out in several stages’. In both methods, however, the goal is to glean an understanding of the messy and unruly world of uncertainty and change, or entrepreneurship and profit.

To Knight the concept of ‘imperfect’ is not meant to connote deviation from ideal, but a state of *becoming*, or not quite complete. Changing our understanding of the word ‘imperfect’ will reframe the narrative being told about the market system. If we analyze the etymology of the word imperfect, breaking it down from its Latin origins, you will learn that ‘im’ expresses the negation, ‘per’ comes from the Latin word meaning ‘thoroughly’ and ‘fect’ comes from the Latin verb ‘facere’, meaning ‘to do’. Thus, rather than saying that something, or some state of affairs, is flawed, suboptimal, or non-ideal, another way to interpret the meaning of ‘imperfect’ is an act or process that is not thoroughly done, or incomplete. In fact, from a quick perusal of the Merriam Webster’s Dictionary,¹⁴ you will find

¹⁴<https://www.merriam-webster.com/dictionary/imperfect>

a similar definition of the word imperfect: ‘constituting a verb tense used to *designate a continuing state or an incomplete action*’ (emphasis added) (see Candela, 2020).

Rather than regarding the market as a flawed or sub-optimal state of affairs, a better understanding of an ‘imperfect market’ reveals that the market is a process of continuous tendency toward perfection, or completion, where all the gains from trade are exhausted and all plans between buyers and sellers are perfectly coordinated. As Ludwig von Mises states in *Human Action*, the ‘market process is the adjustment of the individual actions of the various members of the market society to the requirements of mutual cooperation’ (1966 [1949]: 258). And, as Knight’s later student James Buchanan put it in his essay ‘What Should Economists Do?’ stressing the point we are trying to make: ‘A market is not competitive by assumption or by construction. A market *becomes* competitive, and competitive rules *come to be* established as institutions emerge to place limits on individual behavior patterns. It is this *becoming* process, brought about by the continuous pressure of human behavior in exchange, that is the central part of our discipline, if we have one, not the dry-rot of postulated perfection’ (emphasis original, Buchanan, 1964: 218).

Thus, markets will always be imperfect, but that is precisely why markets exist in the first place. Markets never conform to the ‘ideal’ of perfect competition, but this is completely irrelevant, since under such a state of affairs, market activity would be unnecessary and redundant, since all resources would already be perfectly allocated to their most valued uses. Market processes exist precisely to generate the knowledge necessary to better coordinate the plans and purposes of individuals in a peaceful and productive manner. The entrepreneurial lure for profit and the discipline of loss is what guides such imperfect processes in a tendency toward the creation of the means for coping with our ignorance and coordinating the plans of buyers and sellers.

According to one of his students, James Buchanan, Knight would often say ‘to call a situation hopeless is to call it ideal’ (quoted in Buchanan and Tullock, 1962: 204).¹⁵ The inverse of that statement implies that a market that is non-ideal, or ‘imperfect’ as we’ve defined the word here, is one that builds hope into its narrative. From a Knightian standpoint, the source of that hope, or the ‘hero’ of this narrative, is the entrepreneur. Under the institutional conditions of private property and freedom of contract under the rule of law, deviations from the conditions of perfect competition represent the very frictions that set the market process in motion, and sow the seeds for their own destruction. The omnipresence of ‘market failures’ today present continuous profit opportunities for entrepreneurs to correct such imperfections through adjustments of price, quality, and organizational arrangements, which dissipate monopoly profits, internalize externalities, exclude non-payers from free-riding on public goods, and better coordinate borrowers and savers through time.

Although a proponent of the market, Knight makes quite clear that he does not believe in ‘literal “laissez-faire”; I know of no reputable economist who ever did’ (1964 [1948]: xlix). Like his classical and neoclassical predecessors, Knight stated that the ‘social problem is [to] preserve respect for the rules, and to make such rules as result in the best game for all, players and spectators’ (Knight, 1964 [1933]: xxi). Thus, from this standpoint, the question of public policy is not whether or not a *deus ex machina* of government intervention must save imperfect markets from failure, in comparison with the standard of perfection competition. Rather, the question becomes whether public policy has set the market process up *for* failure, specifically by precluding the institutional conditions by which market processes become more complete, or ‘perfect’, or by generating tendencies that further deviate from the conditions of perfect competition.

Unfortunately, this is not how economic theory developed after Knight. Price theory became microeconomics, which in turn was understood to mean exercises in maximizing and equilibrium under the assumptions of perfect knowledge and perfect competition, rather than a focus on the multiple margins of adjustment and adaptation guided by relative prices and the operation of profit-and-loss accounting. Abstract choice took center stage in economic theory, not the process of

¹⁵In different words, another student of Knight, George Stigler, captured the same idea: ‘anything which is inevitable is ideal!’ (Stigler, 1982: 6).

exchange and production. The perfect competition model was then used in two ways. It either represented a normative benchmark against which real-world imperfections were to be judged, and by which a *deus ex machina* external to the system would diagnose and prescribe a corrective to such imperfections. Or, there was an insistence that the model captured critical elements in the working of the system in an ‘as if’ manner, and thus the model, while unrealistic and abstract, was able to provide a parsimonious scientific theory of the consequences of competitive forces that approximates perfect competition. The main debate in the economic conversation by 1950 ignored the Knightian method, where the perfect competition model was used as a ‘foil’ in a thought experiment of contrast to highlight, as we have seen, the *becoming process* of the competitive entrepreneurial economy. To be clear, it would not be unfair to characterize Knight as the culprit for this shift in the economic conversation.

The loss of this common knowledge, and the ‘tale of two Knights’ to which we alluded, was most revealed in the critical confusion that emerged from the socialist calculation debate (see Lavoie, 1985). Knight himself was a source of this confusion, as he often conflated theory with the internal logic of the abstract principles (e.g. the pure skeleton or the Law of Choice), and referred to the real-world analysis utilizing those principles as politics, as he argued in his own contributions to the socialist calculation debate (see Knight, 1936, 1940).

Instead of the institutionally antiseptic theory of market perfection or market imperfection, the older common knowledge had to be rediscovered in the price-theoretic renderings of economic forces at work in the writings of Armen Alchian, James Buchanan, and Ronald Coase. We would argue that the Austrian school of economics, namely Mises and Hayek and Kirzner, never went down the wrong analytical path, and we have documented in various studies how their work was embedded in the theoretical framework of Alchian, Buchanan, and Coase. What unites property rights economics, public choice economics, and law-and-economics with market process economics in the second half of the 20th century of economic thought is the core commitment to exploring how alternative institutional arrangements either hinder or encourage the pursuit of productive specialization and the realization of peaceful social cooperation through exchange. Economic theory, in other words, cannot make progress if it remains focused on the pristine white skeleton, but must add to that logical structure the flesh and viscera to understand the functioning of the system. Note that this analogy also highlights that the economist cannot abandon the skeleton (i.e. abstract principles) and make progress either – an arm without any muscles and ligaments attached to a skeleton cannot function as an arm, it just would be a blob of flesh unable to be raised or lowered. Thus, old style institutionalism is to be objected to, just as new style formalism is to be objected to, and the pursuit is for what Buchanan (1999 [1968]: 5) argued as a ‘genuine institutional economics’, which, as Ross Emmett has repeatedly stressed, was Knight’s aspiration after *Risk, Uncertainty, and Profit*. Our argument is that was accomplished not by Knight, but by his prodigies Alchian, Buchanan, and Coase who all learned their lessons in Knight well.

4. The skeptical liberal and the evolutionary potential of Knight’s *Risk, Uncertainty, and Profit*

In addressing himself to ‘the problem of profit’ in business enterprise, Frank Knight waded into not only one of the oldest puzzles in economic science, but of moral and political philosophy. And although he insisted from the beginning that his intent was never justificatory, he also understood that understanding the functional significance of profit in the operation of free enterprise did have a purpose beyond the purely scientific. In the preface to the 1921 edition, Knight states clearly ‘that the description and explanation of phenomena must be radically separated from all questions of defense or criticism of the system under examination’. And, he goes on to argue that:

The net result of the inquiry is by no means a defense of the existing order. On the contrary, it is probably to emphasize the inherent defects of free enterprise. But it must be admitted that careful analysis also emphasizes the fundamental difficulties of the problem and the fatuousness of oversanguine expectations from mere changes in social machinery. Only this foundation-laying is

within the scope of this study, or included within the province of economic theory. The final verdict on questions of social policy depends upon a similar study of other possible systems of organization and a comparison of these with free enterprise in relation to the tasks to be accomplished (1971 [1921]: x).

Knight repeated this message throughout the various reprints of *Risk, Uncertainty, and Profit*. The London School of Economics reprinted the book in 1933, 1948, and 1956, and Knight provided a new preface for each edition. These are collected in the 1964 Augustus M. Kelley Reprint of the book.

Knight consistently stresses a few themes in these prefaces. One of his primary theoretical concerns has always been the implications of intelligent discourse in science and in society of the postulates necessary for theorizing and the divergence between these theoretical conditions and the reality we hope to understand and perhaps improve (see Knight 1964 [1933]: xi). He is despondent over the effort to replace traditional price theory, and finds this move among economists as ‘indefensible’ (Knight, 1964 [1933]: xii). Furthermore, the drift away from liberalism has stimulated and resulted in ‘reflective questioning’. Economic theory, which is purely abstract and formal, and without content, must be conjoined with other elements such as social symbols and ethical rules that will make the treatment more realistic and true in a human sense, but less scientific as compared to the benchmark of the objective sciences of nature. Social policy, Knight insists, can be approached scientifically, but in a way that is unique and distinct from the picture and practice of the natural sciences. This is because ‘the procedures dealt with are essentially rules of the game, and the results different kinds of game or social constitution’ (Knight, 1964 [1933]: xvii).

Evident even in the 1933 preface, Knight’s concerns remained primarily scientific, primarily to understand the workings of the economic system, and secondarily on how to address social problems on the basis of that understanding. He was witnessing a decline in the professional literature in his primary concern, and that inevitably spilled over into the role economists could play in the public discourse over the second. He states that the major error in theoretical economics resulted from the failure to sharply distinguish between the working of a system under given conditions, and the consequences of changes in those given conditions (Knight, 1964 [1933]: xix). Knight elaborates a point that is a critical importance to understanding our thesis about the loss of the common knowledge and the necessity of its rediscovery. ‘The notion of equilibrium’, Knight states (Knight, 1964 [1933]: xxii), ‘is one taken from mechanics’ and is represented by a system of simultaneous equations. But to be meaningful, this representation ‘must embody some process of movement toward equilibrium and not merely describe conditions at equilibrium’ (Knight, 1964 [1933]: xxii). Price theory is at the core of our understanding, but it must evolve in application toward accounting for the institutional framework and the social world within which it is embedded. Economics cannot be turned into a science of social control unless we live under an absolutist regime, in which the economic advisors to the regime never have to confront the public. The decline of humanitarian liberalism, Knight (1964 [1933]: xxxv) argues, was due to a failure of social discussion to avoid *false* discussion by turning itself into debate. But debate is never genuine discussion.

In the next reprint, Knight reiterates these themes, but due to the shifting historical context stresses additional themes. It is erroneous, he tells his readers (1964 [1948]: xlviii), to reject the application of the principles of economics to non-market societies. These non-market societies all employ some form of market mechanism, and moreover, the basic principles of economics are not limited to explicating the market mechanism but to principles of economic action against all variety of institutional backgrounds. The principles are universal, and the manifestation of those principles is context dependent. It is important to remember that Knight’s aspiration was to develop a genuine institutional economics one that would successfully steer a course between historicism and formalism.

The question of social problems again comes to the forefront of Knight’s message to his new readers. There are indeed social problems, such as poverty and inequality, that must be addressed and economics does represent a critical tool. But classical and early neoclassical economists, such as Knight, are often tarred by social reformers as advocates of *laissez faire*. Knight informs this new generation of

readers that neither he, nor any serious economist from Adam Smith onward, is a literal laissez faire advocate. ‘Yet’, he states, ‘I believe that individualism must be the political philosophy of intelligent and morally serious men’ (1964 [1948]: xlix). And, the reason is that it is ‘demonstratable that both representative political institutions and free exchange and free enterprise are essential to the general framework of a truly moral social order’ (1964 [1948]: xlix).

The 1957 preface restates these themes, adding in additional criticisms of modern economic thought, and making appeal once more to the primacy of price theory in the education of economists (see Knight, 1964 [1957]: liv). But again, he stresses that price theory must cooperate with other disciplines to offer answers to the pressing social problems of the day. For Knight, specialization among disciplines, as is the case in the market process, only makes sense when there are opportunities for exchange. As throughout his corpus of work, discussion is our only path forward, and the goal is to strive for intelligence in democratic action. ‘The possibility’, however, ‘of acting intelligently is very limited’ (Knight, 1964 [1957]: lviii).

Knight’s stance can be described as a skeptical and pessimistic liberal. In his 1946 essay ‘The Sickness of Liberal Society’, Knight argues that one must understand that liberalism was born in opposition to oppression. ‘The main point for emphasis’, he states, ‘is that freedom is an ethical principle. Its acceptance does not involve a repudiation of morality or idealism, but rather it does involve an inversion of the ethical principle which has ruled civilizations prior to liberalism. All these earlier systems of social order have been rooted in tradition and authority, and it is by opposition to these that liberal freedom is to be defined’ (Knight, 1946: 80). But Knight never made an affirmative claim without acknowledging a tension in the argument. One must always remember that Knight’s theory is grounded in the imperfection of man’s knowledge and understanding of the social world in which they live and learn. We are creatures simply incapable of reasoning our way to universal truth and social harmony. But the alternative is dictatorship and that is no alternative to seriously consider. We turn instead to democracy and its struggle to solve problems. A functioning democratic order – grounded in discussion not debate – ‘means co-operation in thinking and acting to promote progress, moral, intellectual, and aesthetic, with material and technical progress as the basis of all, and all under the limitations of gradualism and ‘seasoned’ with humor and play. The combination is the meaning of liberalism’ (Knight, 1946: 95).

Angus Burgin (2009: 523) has summed up Knight’s position perfectly: ‘The viability of liberalism had passed with the nineteenth century, and Knight had assumed the role of the doubt-ridden priest of a superseded religion. He expressed his love for the principles of liberalism alongside his belief that an enduring liberal society could never be’. If you consider Knight’s place among the great liberal thinkers of his time – Mises and Hayek in particular – he was indeed a skeptical liberal in comparison. But as Burgin stressed, not because the liberal order was fundamentally flawed, but rather because of both imperfections in our knowledge and thus our inability to have a true discussion about the issues of most importance. If there is to be hope for intelligence in democratic action, then it is to be found in structural changes in the rules of the game that enable, rather than hinder, a true discussion among responsible and reasonable individuals. The evolutionary potential of Knight’s scientific and social philosophical ideas rests ultimately on shifting the rules which govern discourse in both endeavors.

5. Conclusion

Murray Rothbard (1962: viii) begins his *Man, Economy, and State* by stating that since World War I, the communication of scientific economics has been marred by the lost art of the comprehensive treatise in the discipline. Instead, economics has become fragmented, and there has been a disintegration of theory in the discipline. He points to Mises’s *Human Action* as the notable exception, as well as Frank Knight’s *Risk, Uncertainty, and Profit*. In reading Knight, one must agree with both Mitchell’s assessment to which we alluded at the beginning of this paper, and Rothbard’s assessment about its unique place in economic theory in the 20th century. Mitchell understood the common knowledge of classical and early neoclassical economic theory that Knight was refining, while

Rothbard was capturing the loss in that common knowledge in order to contribute to its rediscovery in the second half of the 20th century. We have similarly tried to highlight this loss in common knowledge by tracing the origins of its divergence from Knight.

Knight's work provided both the bridge and the catalyst for the development of a genuine institutional economics that avoided the pitfalls of both historicism and formalism. And in so doing, and as seen in the marriage of law-and-economics, property rights economics, public choice economics, and market process economics, laid the groundwork for a renewed integration of economics, political economy and social philosophy that is perhaps seen in the work of F. A. Hayek and James M. Buchanan. It is critical to acknowledge that these works are based on an analysis of decision making under conditions of uncertainty, which explore various coping mechanisms for dealing with such ignorance. It identifies the critical role of the entrepreneur in the baring of that uncertainty, and the evolution toward a solution that describes the process of adaptation and adjustment on a multiplicity of margins in economic life. There is a primacy of price theory to such economic theorizing, just as there is a necessary acknowledgment of the primacy of the institutional framework in political economy and social philosophy. At 100 years old, *Risk, Uncertainty, and Profit* not only has much to teach economic and social thinkers, but the critical and skeptical mind of Knight is as fresh and as relevant today as it was in 1921. We can all aspire to play, as Mitchell (1922: 275) states, 'the dialectical game with delightful skill' and in so doing weave seamlessly our interests in economic theory, economic sociology, and economic history along with social and political philosophy in an effort to contribute to the intelligent discourse of a free society.

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