

KEYNES, RAMSEY, AND PRAGMATISM

BY

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In his recent paper in this journal, Bradley Bateman (2021) breaks with the “standard view” of Frank Ramsey’s influence on Jahn Maynard Keynes and argues that Ramsey’s pragmatist philosophical thought underpinned both Keynes’s acceptance of Ramsey’s subjective theory of probability and Keynes’s adoption of a narrative theory of the role of confidence in economic fluctuations in the General Theory. In this paper it is argued that Bateman is right both in emphasizing the influence of Ramsey’s pragmatist philosophy on Keynes’s thought during the development of the General Theory and afterwards and in arguing that the influence of Ramsey’s pragmatist philosophy partly explains Keynes’s emphasis on the importance of the state of confidence in Chapter 12 of the General Theory. However, it is argued that Ramsey’s pragmatist philosophy had a much greater influence on Keynes than acknowledged by Bateman. Furthermore, contra Bateman, Keynes’s move to a more pragmatist philosophical position does not imply that Keynes accepted Ramsey’s subjective theory of (measurable) probability.

I. INTRODUCTION

The centennial anniversary of the publication of John Maynard Keynes’s *A Treatise on Probability* (1921) has prompted renewed interest in Keynes’s early work on probability theory and the extent to which it influenced his later economic writings, especially *The General Theory of Employment, Interest and Money* (1936). Any such reappraisal of Keynes’s probability theory necessarily involves a reconsideration of Frank Ramsey’s critique of Keynes’s logical theory of probability and the extent to which Keynes abandoned the logical theory of probability and accepted Ramsey’s subjective theory of probability.

A novel contribution to the reappraisal of the influence of Ramsey on Keynes has been provided by Bradley Bateman’s recent paper in this journal. Bateman (2021)

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doi:10.1017/S1053837222000311

focuses attention on the emerging pragmatist philosophy of Ramsey in the final years of his sadly very short life. Bateman argues that it was the influence of Ramsey's pragmatist philosophical thought that underpinned both Keynes's acceptance of Ramsey's subjective theory of probability and Keynes's adoption of a narrative theory of the role of confidence in economic fluctuations in the *General Theory*. By emphasizing Ramsey's pragmatist philosophy as an antecedent of Keynes's later economic writings, Bateman breaks with what can be called the "standard view" of Ramsey's influence on Keynes, particularly associated with Anna Carabelli (1988) and Rod O'Donnell (1989). The standard view argues that Ramsey's influence on Keynes was restricted to probability theory and did not lead to any fundamental change in Keynes's philosophical position.

The main argument of this paper is that Bateman is right both in emphasizing the influence of Ramsey's pragmatist philosophy on Keynes's thought during the development of the *General Theory* and afterwards and in arguing that it was the influence of Ramsey's pragmatist philosophy that partly explains Keynes's emphasis on the importance of the state of confidence in Chapter 12 of the *General Theory*. However, it is argued that Ramsey's pragmatist philosophy had a much greater influence on Keynes than acknowledged by Bateman. Furthermore, *contra* Bateman, Keynes's move to a more pragmatist philosophical position does not imply that Keynes accepted Ramsey's subjective theory of (measurable) probability.

The paper is structured as follows. Section II sets out the standard view of Ramsey's influence on Keynes. Section III provides a review of Bateman's recent arguments that Ramsey's influence on Keynes was much greater than previously recognized, particularly Ramsey's pragmatist philosophy. Section IV develops an interpretation of the development of Keynes's thought as a process of contextual evolution and provides a critique of Bateman's interpretation of the influence of Ramsey's pragmatist philosophy on Keynes. The concluding section summarizes the key arguments of the paper and discusses the implications for both our understanding of Keynes's *General Theory* and the nature of interpretation.

II. KEYNES AND RAMSEY: THE "STANDARD VIEW"

In *A Treatise on Probability* (1921), Keynes sets out the logical theory of probability. In contrast to aleatory frequency theory, Keynes argues that probability (p) is an epistemic concept that represents the rational degree of belief in a proposition (a), given the evidence (h). For Keynes, the probability relation is objective, taking the form $p = ah$, and is only partially measurable (in the sense that only some probabilities are fully measurable while others are comparable but non-measurable and some are non-measurable and non-comparable).

Ramsey's critique of *A Treatise on Probability* is set out in "Truth and Probability," originally read in part to the Moral Sciences Club in 1926 and published in full only posthumously in 1931 in *The Foundations of Mathematics and other Logical Essays*, edited by Richard Braithwaite. Ramsey denies the existence of objective probability relations in his "more fundamental criticism of Mr Keynes' views, which is the obvious one that there really do not seem to be any such things as the probability relations he

describes" ([1926] 1931, p. 161). He also rejects Keynes's arguments that probability is only partially measurable. Ramsey proposes a subjective theory of probability in which the betting-quotient method is used to measure probabilities. Ramsey's subjective theory of probability has become a fundamental building block of Subjective Expected Utility (SEU) theory, the starting point for mainstream economic theory of choice under risk and uncertainty.

In the standard view of Ramsey's influence on Keynes, Keynes is recognized as having profound respect for the intellectual powers of Ramsey and taking his criticisms of the logical theory very seriously. However, there has been much debate over whether Keynes changed his views on probability theory in response to Ramsey's critique. In part, this debate has been fueled by the limited textual evidence of Keynes's views on probability after the publication of *A Treatise on Probability*. Carabelli (1988) and O'Donnell (1989) both argue that Keynes rejected Ramsey's criticisms and retained the logical theory of probability. For example, Carabelli states that Keynes "did not either change substantially his views or embrace Ramsey's views of probability" (1988, p. 87), while O'Donnell argues that Keynes "neither threw over his particular conception of probability nor abandoned his general philosophical position in favor of Ramsey's ideas" (1989, p. 141). In contrast, Bateman (1987) argues that Keynes accepted Ramsey's subjective theory of (measurable) probability: "While [Keynes] had originally advocated an *objective epistemic* theory of probability in *A Treatise on Probability* he was now willing to accept a *subjective epistemic* theory" (p. 107). Jochen Runde (1994) adopts a more nuanced approach, arguing that Keynes accepted Ramsey's criticisms of the existence of logical probability relations but remained wedded to probabilities as only partially measurable.

Importantly, in the light of Bateman's most recent contribution to this debate, the standard view restricts Ramsey's influence on Keynes to the realm of probability theory only. Both Carabelli and O'Donnell explicitly reject that Ramsey influenced Keynes's philosophical thought.

III. BATEMAN ON KEYNES AND RAMSEY

As noted in the previous section, Bateman has long argued for the importance of Ramsey's critique of Keynes's logical theory of probability. Bateman (1987, 1991) argues that Keynes and Ramsey both considered probability as an epistemic concept representing the degree of belief in a proposition. In *A Treatise on Probability* Keynes treated the probability relation as objective in the sense of being the rational degree of belief in a proposition independent of an individual's opinion, and quite explicitly differentiated between rational (objective) degrees of belief and the actual (subjective) beliefs of individuals. Ramsey rejected the existence of objective probability relations and argued that probabilities represented the actual degrees of belief of individuals and that these subjective degrees of belief could be measured using the betting-quotient method. Bateman argues that Keynes's 1931 review of Ramsey's *The Foundations of Mathematics* provides clear evidence that Keynes accepted Ramsey's critique and embraced Ramsey's subjective theory of probability. Crucially, although Keynes never mentioned Ramsey's betting-quotient method for measuring subjective probabilities, a

fact acknowledged by Bateman (1991, pp. 60–61), Bateman assumes that Keynes, in accepting Ramsey's subjective theory of probability, also accepted the measurability of probabilities. Bateman argues that Keynes's acceptance of the measurability of probabilities is evident in the use of mathematical expectation in the *General Theory*. When addressing Keynes's move to a probability-based justification for policy rules, Bateman (1991) states, "This is most obvious in the analytical structure of *The General Theory*. Keynes uses mathematical expectation both to construct his model of macroeconomics (read general) equilibrium and to explain the fluctuations in that equilibrium" (p. 63).

Given that Bateman considers Keynes as having repudiated the core arguments of *A Treatise on Probability* by the time he started work on the *General Theory*, it is not surprising that Bateman rejects the attempts by Carabelli, O'Donnell, and others to ground the *General Theory* in Keynes's earlier work on probability. Bateman (2003) sees himself as challenging three interrelated myths:

- (1) that Keynes's early work in probability led him to understand the importance of expectations and uncertainty in economic decision-making and that he slowly introduced expectations in his economic writings in the 1920s and 1930s; (2) that the use of expectations in Keynes's great book, *The General Theory*, came about as a direct result of his earlier work in probability theory; and (3) that Keynes is a great theoretical revolutionary who first introduced expectations to macroeconomics. (p. 73)

Rather than focusing on *A Treatise on Probability* as a critical antecedent to the *General Theory*, Bateman has concentrated instead on Keynes's earlier economic writings, primarily *A Tract on Monetary Reform* (1923) and *A Treatise on Money* (1930). Bateman tasked himself with trying to understand why throughout the 1920s and early 1930s Keynes was critical of the Cambridge theory of the trade cycle associated with Alfred Marshall that gave a prominent role to the state of confidence but then changed his mind and gave a central role to expectations and uncertainty in the *General Theory*. Bateman (2003) provides a purely externalist explanation of this change of mind as due to Keynes's experience both as a policy-maker and as an investor: "the documentary evidence seems clear enough on this point: Keynes introduced expectations and uncertainty in *The General Theory* in response to his experiences in policy-making and investment, not as an intellectual by-product of his work as a philosopher" (p. 78). The explicit rejection of an internalist philosophical rationale for Keynes's change of mind on the importance of confidence aligns Bateman at this point with the standard view of Ramsey's influence on Keynes, limiting Ramsey's influence to the realm of probability theory only, albeit at the extreme "change" end of the change-continuity spectrum of interpretations.

Bateman (2021) provides a novel reinterpretation of the antecedents to the *General Theory* in Keynes's thought, particularly the influence of Ramsey, that both extends his arguments on the emergence of the state of confidence as a central theme in the *General Theory* while at the same time repudiating his earlier contention that internalist philosophical arguments played no role in Keynes's change of mind on the economic importance of the state of confidence. The two innovations in Bateman's interpretation of the antecedents of the *General Theory* are the adoption of Robert Shiller's notion of "narrative economics" (Shiller 2017, 2019) as his interpretative lens and the recognition of the influence on Keynes of Ramsey's move towards a thoroughgoing pragmatist

philosophy. This latter innovation implies that Bateman no longer subscribes to the standard view of Ramsey's influence on Keynes.

Shiller defines "narrative economics" as follows: "By narrative economics, I mean the study of the spread and dynamics of popular narratives, the stories, particularly those of human interest and emotion, and how these change through time, to understand economic fluctuations" (Shiller 2017, p. 967). As Bateman explains,

Shiller defines "narrative economics" as the study of the popular narratives that drive actual economic events. Therefore, a narrative economist is someone who studies the narratives that other people use, not someone who creates narratives. Thus, Keynes was a narrative economist not because of *his own* narratives but rather because he explained the economic consequences of *popular* narratives. (Bateman 2021, p. 620; italics in original)

Bateman further clarifies that to describe Keynes as a narrative economist does not mean that Keynes relied on a prose style of exposition. Neither does it mean that he made little or no use of the mathematical style of exposition. For Shiller and Bateman, narrative economics is a type of theoretical argument in which economic outcomes are explained as a causal consequence of widely shared narratives. Shiller uses Keynes's *The Economic Consequences of the Peace* (1920) as an exemplar of narrative economics in which Keynes analyzed the likely reaction of Germany to the Treaty of Versailles and the general perception of the German people that the war reparations were excessively draconian. As Shiller states, "Keynes's insight exemplifies narrative economics because it focuses on how people would interpret the story of the Versailles treaty given their economic conditions" (Shiller 2019, p. xvii; quoted by Bateman 2021, p. 621).

Having recognized the role of popular narratives in *The Economic Consequences of the Peace*, Bateman then considers why, somewhat surprisingly, popular narratives play no role in Keynes's theorizing in both *A Tract on Monetary Reform* and *A Treatise on Money*. Indeed, as Bateman points out, Keynes was critical throughout the 1920s and early 1930s of the "confidence narratives" associated with Lord Overstone and Alfred and Mary Marshall, which highlighted the role of the state of confidence in the trade cycle. But Keynes returned to the narrative economics style in the *General Theory*, especially in Chapter 12 on the state of long-term expectations where he stresses the role of the state of confidence in influencing the propensity to invest.

Bateman traces Keynes's changing views on the confidence narratives to late 1933 and tries to uncover the reasons why Keynes changed his mind on the usefulness of the popular narrative theories for economic analysis. Whereas previously Bateman had focused solely on externalist explanations, he now identifies both externalist and internalist factors at work. He argues that Keynes was influenced by external economic conditions, particularly his experiences of the volatility in the foreign exchange and bond markets, which reinforced the theoretical arguments of Ramsey on the subjective nature of probability.

Both internalist and externalist influences matter in the story. Keynes would find a way to use subjective probabilities in *The General Theory*, but the reality of the effects of confidence he was observing in foreign exchange markets and bond markets convinced him that confidence narratives were not "nonsense" and that he needed Ramsey's subjective probabilities to build his model. (Bateman 2021, p. 625)

As we have already noted, Bateman (1987) has previously argued that Keynes accepted Ramsey's critique of the logical theory of probability as propounded in *A Treatise on Probability* in which degrees of belief are objective and only partially measurable, and, as a consequence, Keynes moved to a position that degrees of belief are both subjective and measurable by the betting-quotient method. But Bateman (2021) breaks from the standard view by suggesting that Keynes's adoption of a subjective theory of probability may have been influenced by Ramsey's emerging pragmatist philosophy. Bateman argues for Keynes following "Ramsey's lead into pragmatism, moving beyond optimizing models to richer, more diverse considerations of human motivation and psychology" (2021, p. 627). Bateman cites the supporting evidence of Cheryl Misak (2020), who has highlighted Ramsey's adoption of a pragmatist philosophy in the mid- to late 1920s.

Bateman considers Ramsey's pragmatist philosophy to have had three principal impacts on the method of analysis adopted by Keynes in the *General Theory*. First, adopting a pragmatist philosophy led Keynes to give much greater weight to the multiple motivations of human behavior in his economic analysis, as evidenced, for example, by the eight subjective factors motivating individuals to save that Keynes identifies in Chapter 9 of the *General Theory*: Precaution, Foresight, Calculation, Improvement, Independence, Enterprise, Pride, and Avarice (1936, p. 108). Second, Keynes became more aware of the dangers of both excessive scholasticism (i.e., precision) and wooliness. This was a recurring theme in Ramsey's last writings, especially in his 1929 essay, "Philosophy," and expounded by Keynes in a lecture in November 1933 (Rymes 1989, p. 101). Third, Bateman sees Ramsey's pragmatist philosophy as an important reason for Keynes's repudiation of the logical theory of probability and acceptance of the subjective theory of probability as a more appropriate representation of degrees of belief as reflecting beliefs and commitment. Bateman considers chapters 11 and 12 of the *General Theory* as exemplifying Ramsey's pragmatist-inspired widening of the conception of human behavior with Keynes adopting a rational economic agent model applying mathematical expectation to the investment decision in Chapter 11 but then focusing on animal spirits in Chapter 12:

On the one hand, Keynes can work out in great detail in Chapter 11 ("The Marginal Efficiency of Capital") the model for rationally optimizing profits, including how investors weigh expected future profits, which are formed by weighting each possible future return by its probability of occurrence; on the other hand, he can step back in Chapter 12 ("The State of Long Term Expectations") and declare that investors act on animal spirits, not mathematical expectation. That is, investors do not actually line up each outcome and its probability to make their decisions. Just as Ramsey had demonstrated in "Truth and Probability", you can calculate the probabilities for different outcomes from the bets that a person is willing to make even if they make the bets for reasons of enthusiasm, fear, or excitement. From a pragmatic perspective, probabilities in human action reflect beliefs and commitments; they are not objective facts (or logical relations). (Bateman 2021, p. 630)

Bateman concludes: "But it is not just that Keynes employs Ramsey's subjective probabilities in his model in *The General Theory*. The entire style of model building reflects Ramsey's pragmatism" (p. 630), and this, for Bateman, ultimately explains

Keynes's return to the use of a popular narrative theory, in this case the confidence narrative, as a central component of his theory of economic fluctuations.

Bateman is right to emphasize the influence of Ramsey's pragmatist philosophy on Keynes's later thought including the *General Theory*, and makes a crucial point on the likelihood that the use of popular narrative theory in the *General Theory* was an attempt to broaden the conception of economic behavior. However, Bateman underestimates the extent to which Ramsey's pragmatist philosophy influenced Keynes. Furthermore, *contra* Bateman, Keynes's adoption of a more pragmatist philosophical position does not imply that Keynes adopted Ramsey's subjective theory of (measurable) probability. These two disagreements with Bateman's interpretation are developed in the next section.

IV. KEYNES'S EVOLVING PHILOSOPHY AND METHOD OF ANALYSIS

The interpretative lens adopted in this paper views the development of Keynes's thought as a process of contextual evolution. The arguments over the development of Keynes's thought have typically been framed as a continuity-or-change debate (see, for example, Gerrard 1992), with Carabelli (1988) and O'Donnell (1989) viewed as the leading advocates of the continuity thesis that Keynes's philosophical thought and his probability theory remained essentially unchanged from his undergraduate days throughout his life. Others, such as Bateman (1987, 1991, 2003, 2021), adopt the change thesis, with Ramsey's critique of *A Treatise on Probability* considered as a critical influence on Keynes's changing views on philosophy and probability. As exemplified by Bateman's recent contribution, the change thesis recognizes both internalist and externalist factors as important influences on the development of Keynes's thought.

One of the apparent weaknesses in the continuity thesis is the seeming disconnect between the interpretative lens applied to Keynes's philosophical thought and probability theory and that applied to Keynes's economic thought. So while radical/post-Keynesian economists treat as axiomatic that Keynes's economic thought between the publication of *A Treatise on Money* in 1930 and the publication of the *General Theory* in 1936 is characterized by a revolutionary paradigm shift in the economic analysis of the macro economy, many of those same economists hold to the continuity thesis that Keynes's philosophy and probability theory remained essentially unchanged and that the theoretical underpinnings of Keynes's economic analysis of the macroeconomic implications of expectations and the state of confidence are to be found in his probability theory. This theory was originally developed as a critique of George Edward Moore's philosophy and submitted as a graduate dissertation in support of his application for a fellowship at King's College, Cambridge. Radical change in one area of an individual's thought does not necessarily imply radical change in other areas of their thought, but it does at least provide evidence that the individual is prepared to make radical intellectual change and that the possibility of radical changes in other areas of their thought should be given serious consideration rather than being dismissed out of hand. Indeed, Keynes's openness to changing his mind on an issue is summed up by the oft-attributed quote: "When someone persuades me that I am wrong, I change my mind. What do you do?"

(see, for example, Harcourt 1986, p. 99n3, where this version of the quote is attributed to Keynes by Joan Robinson).

Perhaps the most useful way of viewing the continuity-or-change debate is to remember Hilary Putnam's warning (made in the context of the fact/value dichotomy) of the dangers of treating distinctions as dichotomies (Putnam 2004). From this perspective, continuity and change are best seen as distinctions that are multidimensional and differ in degree rather than as a strict dichotomy between two well-defined and mutually exclusive categories. It is an age-old debate that can be traced back to the pre-Socratic Greek philosophers and the insight of Heraclitus that one can never step into the same river twice. The continuity-or-change debate is misleading by framing the issues as a dichotomy when everything changes to some degree since every event is to some degree unique. Was Keynes who wrote the *General Theory* the same person who wrote *A Treatise on Probability*? Yes and no. It all depends on the purpose and context of the question. It is universally agreed that there was a historical figure named John Maynard Keynes who wrote both *A Treatise on Probability* and the *General Theory*. It is also agreed by all those who have studied the subject that Keynes's approach to probability theory in *A Treatise on Probability* was largely developed in the period from 1904 to 1907 as a critique of Moore's moral philosophy and his use of probability (see, for example, Carabelli 1988; O'Donnell 1989). But was the "early" Keynes in the pre-First World War Edwardian era of the 1900s the same person intellectually as the later Keynes of the 1930s who had lived through the Great War and the Great Depression? Context matters, as Heraclitus recognized, so the question is not whether there is continuity or change in Keynes's thought but rather to what extent his thought evolved, displaying both continuity and change, as the context of his intellectual activity changed over the course of his lifetime. This is the essence of the interpretative frame of treating Keynes's thought as a process of contextual evolution.

In interpreting Keynes's philosophical thought and probability theory as a process of contextual evolution, there are two critical contextual factors that need to be considered: the changing context of Cambridge philosophy in general, and, specifically, the role of Ramsey's shift to an openly pragmatist philosophy in the final years of his life. The standard view of Ramsey's influence on Keynes ignores both the changing context of Cambridge philosophy and Ramsey's pragmatist philosophy. The standard view is exemplified by Carabelli (1988) and O'Donnell (1989), who both argue that Keynes's philosophy and probability theory were fully formed in the first decade of the twentieth century and underwent only relatively minor changes thereafter.

To date, the main proponent of the importance of the changing context of Cambridge philosophy on Keynes has been John Coates in *The Claims of Common Sense* (1996). Coates argues that *A Treatise on Probability* should be seen as an artefact of the pre-First World War analytic philosophy in Cambridge. The early Keynes of *A Treatise on Probability*, just like the early Ludwig Wittgenstein of the *Tractatus Logico-Philosophicus* ([1922] 1974), developed his approach when Cambridge philosophical thinking was dominated by Gottlob Frege–Bertrand Russell analytic philosophy and the development of ideal languages to describe reality. The objective of analytic philosophy is to ensure that our languages emulate mathematics in being fully consistent logically, free from contradiction and paradox. But the analytic project was doomed to failure as it became increasingly apparent that even the foundations of mathematics could not be reformulated to avoid contradiction and paradox. Ultimately, Wittgenstein abandoned

the analytic philosophy of the *Tractatus* and turned his focus on understanding the complexity of ordinary language as a social construct rather than a logical construct. Coates provides compelling evidence of the influence of both Ramsey and Wittgenstein on Keynes.

There is some textual evidence in Keynes's writings to support the view that he came to see *A Treatise on Probability* as somewhat outdated and in need of further extensive revision. In a letter in 1926 to Friedrich M. Urban, the translator of the German edition of *A Treatise on Probability*, Keynes writes:

I have not thought about the subject very deeply in recent times. But as time goes on I myself feel that there is a great deal in the book which is unsatisfactory, and, indeed I felt this even when I was writing it. It was published as it stood because it seemed to me that it would help on the subject that I should do so more effectively than if I was to try to make further refinements and revisions which might quite likely prove beyond my capacity. I believe that the ultimate theory of the subject may differ very considerably from mine. But I still think that the problems as I have posed them may be the right starting point for further research. (Keynes to F. M. Urban, 15 May 1926, as cited in Gerrard 1992, p. 87)

And, as Coates argues and as recognized by Bateman (1987, 1991, 2003, 2021), a key figure in Keynes's reappraisal of *A Treatise on Probability* was Ramsey.

The importance of Ramsey in the interwar revolt against analytic philosophy in Cambridge, England, has been emphasized by the philosopher Cheryl Misak in her two recent books, *Cambridge Pragmatism: From Peirce and James to Ramsey and Wittgenstein* (2016) and *Frank Ramsey: A Sheer Excess of Powers* (2020). It is Misak's biography of Ramsey that is acknowledged by Bateman as the source for his argument of the importance of Ramsey's shift to a pragmatist philosophy in the final years of his life. But Misak's biography of Ramsey needs to be located in the wider context of her work on American pragmatism, and in the parallels between developments in American classical pragmatism in Cambridge, Massachusetts, and the revolt against formalism in interwar Cambridge, England. Misak is sympathetic to the pragmatist philosophy of Charles Sanders Peirce, who remained wedded to a dualist notion of truth as not only what works but also as representing knowledge of reality. Misak shows how Peirce's writings influenced Ramsey and contributed to Ramsey's critique of Wittgenstein's *Tractatus*. Misak argues convincingly that Ramsey was the foremost authority on Wittgenstein's *Tractatus*, having translated the original German edition for publication in England, and corresponding with and visiting Wittgenstein in Austria. Misak attributes Ramsey's critique of the *Tractatus* as one of the principal influences on Wittgenstein's shift to focusing on ordinary language as a social construct, an influence that Wittgenstein initially denied and only belatedly acknowledged. Misak provides further evidence, consistent with Coates (1996), on how, after Wittgenstein's return to Cambridge in January 1929, Keynes, Ramsey, Piero Sraffa, and Wittgenstein met regularly throughout the final year of Ramsey's life, the so-called Cafeteria Club (Misak 2020, p. 302).

The extent of Ramsey's adoption of a pragmatist philosophy was underestimated at the time except by Keynes and Wittgenstein. There are three clear impacts of Ramsey's pragmatist philosophy on Keynes: (1) Keynes's adoption of Ramsey's distinction between formal and human logic; (2) Keynes's acknowledgment of the pragmatist

argument that induction is a useful mental habit, although he does not consider this adequate as a full explanation that gets to the bottom of the problem of induction; and (3) Keynes's recognition of the dangers of excessive scholasticism. It is Keynes's concern with excessive scholasticism, expressed in a 1933 lecture on method and modeling (see Rymes 1989, pp. 102–103), that Bateman (2021, p. 626) seems to consider as the most direct evidence of the influence of Ramsey's pragmatist philosophy on Keynes, since it paraphrases Ramsey's 1929 essay, "Philosophy," contained in *The Foundations of Mathematics*, and is included in one of the extracts from that essay reproduced in Keynes's 1933 obituary essay. However, this particular piece of evidence of Ramsey's pragmatist influence on Keynes may not be as definitive as it first appears, since Keynes had a long-standing concern about precision and vagueness that predates any influence of Ramsey and can be traced back to Keynes's initial critique of Moore's scholasticism (see Carabelli 2021). Perhaps the most that can be said is that Ramsey's pragmatism helped reignite a long-standing concern about scholasticism.

It is Keynes's adoption of the formal and human logic distinction and his comment of induction as a useful mental habit that are novel and more directly due to Ramsey. Again, the key textual evidence is a passage to be found in Keynes's obituary essay on Ramsey, which is quoted in part by Bateman (2021, p. 630) but without the section on induction. The full passage is as follows:

Formal logic is concerned with nothing but the rules of *consistent* thought. But in addition to this we have certain "useful mental habits" for handling material with which we are supplied by our perceptions and by our memory and perhaps in other ways, and so arriving at or towards truth; and the analysis of such habits is also a sort of logic. The application of these ideas to the logic of probability is very fruitful, Ramsey argues, as against the view which I had put forward, that probability is concerned not with objective relations between propositions but (in some sense) with degrees of belief, and he succeeds in showing that the calculus of probabilities simply amounts to a set of rules for ensuring that the system of degrees of belief which we hold shall be a *consistent* system. Thus the calculus of probabilities belongs to formal logic. But the basis of our degrees of belief—or the *a priori* probabilities as they used to be called—is part of our human outfit, perhaps given us merely by natural selection, analogous to our perceptions and our memories rather than to formal logic. So far I yield to Ramsey—I think he is right. But in attempting to distinguish "rational" degrees of belief from belief in general he was not yet, I think, quite successful. It is not getting to the bottom of the principle of induction merely to say that it is a useful mental habit. Yet in attempting to distinguish a "human" logic from formal logic on the one hand and descriptive psychology on the other, Ramsey may have been pointing the way to the next field of study when formal logic has been put into good order and its highly limited scope properly defined. (Keynes 1933, pp. 300–301)

Ramsey's distinction between formal and human logic is set out in his "Truth and Probability" essay and derives from Peirce. As Keynes understands the distinction, formal logic provides the rules by which a system of consistent propositions can be constructed, whereas human logic refers to the analysis of the useful mental habits employed in the pursuit of truth. Using this distinction, Keynes identifies three points of agreement with Ramsey: (1) the construction of a consistent system of probabilities is a matter of formal logic with the calculus of probabilities representing the rules required

for consistency; (2) probability is concerned with degrees of belief, not objective relations between propositions; and (3) the justification of *a priori* probabilities is a matter of human logic that lies beyond formal logic. Taken together, these three points of agreement imply Keynes's acceptance that the logical theory of probability could not provide a general theory of probability. The fundamental problem that Keynes had grappled with throughout the long gestation of *A Treatise on Probability* is how to provide an objective basis for the *a priori* probabilities on which a consistent system of probabilities could be constructed. Keynes had shown the inadequacies of the principle of indifference as a logical objective basis, given the requirement for a mutually exclusive and exhaustive set of alternatives to be identified. Keynes's solution was to assume the existence of objective probability relations. But this proved to be a house-of-cards solution, the principal weakness of the logical theory of probability on which Ramsey's pragmatist critique focused and which ultimately led Keynes to recognize the limits of his (formal) logical theory of probability and to abandon the formalist analytic project, in much the same way as Ramsey's pragmatist critique of Wittgenstein's *Tractatus* triggered the philosophical shift of the later Wittgenstein.

However, *contra* Bateman (2021), there is no implication that Keynes's acceptance of Ramsey's pragmatist critique of objective probability relations led to his acceptance of Ramsey's proposed betting-quotient method for measuring probabilities. Keynes agreed with Ramsey that the (formal) logical theory of probability should be seen as a theory of internally consistent probabilities. In Ramsey's subjective theory of fully measurable probabilities, consistency equates to the no-Dutch Book condition. But a logically consistent system of probabilities need not be fully measurable. Logically consistent probabilities can be fully measurable, comparable but not measurable, non-comparable, or non-existent, just as envisaged by Keynes in *A Treatise on Probability*. By way of illustration, Keynes provided a diagrammatic example of a set of consistent non-numerical probabilities in Chapter 3, using the device of ordered probability paths. Ramsey does provide a pragmatist justification for measurable probabilities in terms of their usefulness, but there is no inherent contradiction between a pragmatist philosophy and a belief that probabilities are only partially measurable. And, indeed, although Ramsey considers the betting-quotient method to be "fundamentally sound," he recognizes that it is "insufficiently general" and "necessarily inexact" due to the diminishing marginal utility of money, differences in the individual eagerness or reluctance to bet, and the possibility that a proposal to bet can alter an individual's state of opinion (Ramsey 1931, p. 178).

As noted earlier, Bateman acknowledges that there is no direct textual evidence of Keynes accepting Ramsey's betting-quotient method for measuring probabilities. Bateman assumes that Keynes must have changed his mind on the measurability of probabilities because of the importance of mathematical expectation in the *General Theory*. As we have seen, Bateman (1991) makes this general claim explicitly and then repeats it in his 2021 paper, albeit in a more specific form, locating the use of mathematical expectation to Chapter 11 on the marginal efficiency of capital. But there is no mention of mathematical expectation in Chapter 11 and only one mention of probability when defining an entrepreneur's or borrower's risk that "arises out of doubts in his own mind as to the probability of his actually earning the prospective yield for which he hopes" (Keynes 1936, p. 144).

In discussing the influence of Ramsey's pragmatist philosophy on Keynes, it is important to consider Keynes's comment on the problem of induction in his obituary essay. Bateman's neglect of this comment is understandable, given his focus on Ramsey's pragmatism as an explanation of Keynes's change of mind on the relevance of the confidence narrative. Keynes's basic point is that there is more to the justification of the principle of induction than merely describing it as a "useful mental habit." He believes that Ramsey had pointed the way forward by differentiating human logic from both formal logic and descriptive psychology and treating the problem of induction as lying within the domain of human logic. Ramsey considered human logic as the study of useful mental habits for "arriving at or towards truth." Put this way, Keynes is just restating the essential tension within pragmatism between beliefs justified as useful mental habits and beliefs justified as truth, or, to use the language of Joseph Raz (1999), reasons for action versus reasons for belief. Misak (2016, 2020) portrays Ramsey as following Peirce in treating empirical truth as a necessary requirement for a belief to be treated as a habit that provides the basis for warranted intentional action. Misak contrasts the realist Peirce–Ramsey strand of pragmatism with that of William James, the pragmatist philosopher and psychologist who stressed usefulness rather than empirical truth. In arguing for induction to be seen as a problem of human logic in contrast to both formal logic and descriptive psychology, Keynes is aligning himself with the Peirce–Ramsey realist strand of pragmatism and explicitly rejecting both the formalism of Frege–Russell analytic philosophy and the instrumentalist strand of pragmatism associated with James.

V. CONCLUSION: KEYNESIAN PRAGMATISM

The focus of this paper has been the impact of Ramsey's pragmatist philosophy on Keynes, particularly on the method of analysis in the *General Theory*. This reappraisal of the influence of Ramsey on Keynes has been stimulated by Bateman's recent paper in which he argues that it was Ramsey's pragmatist philosophy that led Keynes to reject the logical theory of probability developed in *A Treatise on Probability* and the acceptance of Ramsey's subjective theory of (measurable) probability. Bateman also argues that it is Ramsey's pragmatist philosophy that influenced Keynes to return to using a narrative economic theory in the *General Theory*, as evidenced by Keynes's confidence narrative as a crucial component of the causal explanation of economic fluctuations, an approach of which Keynes had been previously critical.

It has been argued that Bateman has made an important contribution by highlighting the influence of Ramsey's pragmatist philosophy on Keynes and that it is reflected in the use of the confidence narrative in the *General Theory*, in contrast to both of his previous books on monetary economics, *A Tract on Monetary Reform* and *A Treatise on Money*. But, *contra* Bateman, it has been argued that the influence of Ramsey's pragmatist philosophy on Keynes was much more fundamental and did not imply the acceptance of either Ramsey's betting-quotient method for measuring subjective probabilities or mathematical expectation as a modeling device.

The discussion of Ramsey's influence on Keynes raises issues about the nature of interpretation and Keynes's evolving philosophy. Keynesian scholars have recognized

that differences in the interpretation of Keynes's writings are in part related to differences in their views on the nature of interpretation. In other words, just as in the evaluation of Keynes's economics, it is a matter of both method and theory. I (Gerrard 1991), for example, apply the hermeneutic approach to interpreting Keynes's *General Theory*, and argue for the need to differentiate between the meaning and significance of interpretation. Put another way, assessing the different interpretations depends on the purpose: authenticity or usefulness. This echoes the differences within pragmatist philosophy from its earliest days on the nature of truth as "getting it right" and truth as "what works," with Peirce arguing for a dualistic conception of truth whereas James was associated with an emphasis on truth as usefulness. The recognition of the critical influence of Ramsey's pragmatist philosophy on Keynes has both meaning and significance. The meaning of Ramsey's influence is enhanced by understanding the Ramsey–Keynes relationship in the broader context of changes in Cambridge philosophy in the interwar period and the repudiation of analytic philosophy, as argued previously by Coates (1996). From this perspective, Keynes's philosophy should be seen as evolving as the context changed. The significance of Ramsey's pragmatist philosophy is enhanced by its impact in leading to a renewed consideration of the possibilities of the pragmatist philosophy for the development of the understanding of economic behavior. At the core of pragmatist philosophy is the intention-belief-action nexus, and so too in Keynes's *General Theory*. Keynes's specific contribution to the development of the pragmatist approach is his lifelong concern with the study of the evidential basis of the intention-belief-action nexus. The role of evidence is at the core of *A Treatise on Probability*, with probability viewed as the rational degree of belief in a proposition, given the available evidence. Crucially, Keynes introduces the concept of weight of argument as a measure of the amount of available relevant evidence and emphasizes, *contra* David Hume, the importance of negative analogy. In the *General Theory*, Keynes specifically refers to weight of argument rather than probability when defining what he means by "very uncertain," with the state of confidence representing the weight of argument at the aggregate level. Beyond the *General Theory*, Keynes continued to emphasize uncertainty in terms of weight of argument, particularly in the *Quarterly Journal of Economics* 1937 article in which he considers how economic agents can decide on a warranted course of action when the evidential base is insufficient to calculate probabilities. The practical importance of the distinction between probability and weight is also developed by Keynes in his 1938 correspondence with Hugh Townshend, where he links the risk premium to probability and the liquidity premium to weight of argument:

I am rather inclined to associate risk premium with probability strictly speaking, and liquidity premium with what in my *Treatise on Probability* I called 'weight'. An essential distinction is that a risk premium is expected to be rewarded on the average by an increased return at the end of the period. A liquidity premium, on the other hand, is not even expected to be rewarded. It is a payment, not for the expectation on increased tangible income at the end of the period, but for an increased sense of comfort and confidence during the period. (Keynes [1938] 1979, pp. 293–294)

In conclusion, Bateman has made an important contribution by repudiating the standard view of Ramsey's influence on Keynes and highlighting the crucial role of Ramsey's pragmatist critique of *A Treatise on Probability* in the development of the

General Theory. But Bateman's use of a narrative economics interpretative lens limits the appreciation of the possible extent of the impact of Ramsey's pragmatist philosophy on Keynes's thought. A more extensive pragmatist contextualization of the *General Theory* is possible in which Keynesian pragmatism characterized by an evidence-based approach to the understanding of human behavior under uncertainty can be viewed as a development of the realist pragmatism of Peirce and Ramsey.

COMPETING INTERESTS

The author declares no competing interests exist.

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