ON THE CORRECTION OF ALL THIRTY FIVE ERRORS CONTAINED IN RAMSEY'S 1922 AND 1926 REVIEWS OF KEYNES'S TREATISE

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ABSTRACT

Bateman's claim (2016, History of Political Economy) that "Keynes had postulated that probability is an objective logical relation between two propositions." appears nowhere in Keynes's A Treatise on Probability. His claim is similar to those made by C.Misak in her 2020 biography of Ramsey. Bateman just assumed that what the supposed 18 year old boy genius had claimed was correct and that whatever Ramsey said/wrote had to be true because he was a genius .Actually, Ramsey's two reviews are incomprehensible , utterly preposterous, gobbledygook that Ramsey had simply manufactured out of the thin air or in his own imagination.

Keynes's logical theory of probability postulated that there was a rational degree of probable belief,α,based on an objective, logical, relation of similarity that held between multiple a and h propositions(not two propositions) .These propositions had to be related ,linked or associated with each other ,where the h proposition(s) supplied evidence and the a proposition(s) was a conclusion that had to be based on the evidence provided by the h propositions.

Ramsey's failure to correctly define Keynes's propositional logic is carried out through both reviews so that all of the points he claimed to be making are wrong .All of his example problems are wrong because he fails to grasp that the a and h propositions must be related. Otherwise, there can be no similarity between them, which means that there is no objective probability relation connecting them and no α can be defined.

The entire Ramsey critique of Keynes's logical theory of probability is based on a large number of empty claims and errors made by Ramsey that have no textual support in any part of the A treatise on Probability or in anything written by Keynes in his lifetime.

Ramsey's three page review is filled with obvious errors and mistaken claims such as "First, he (author's note-Keynes) thinks that between any two non-self-contradictory propositions there holds a probability relation (Axiom I), for example between 'My carpet is blue' and 'Napoleon was a great general'; it is easily seen that it leads to contradictions to assign the probability 1/2 to such cases, and Mr. Keynes would conclude that the probability is not numerical. But it would seem that in such cases there is no probability; that, for a logical relation, other than a truth function, to hold between two propositions, there must be some connection between them. If this be so, there is no such probability as the probability that 'my carpet is blue' given only that 'Napoleon was a great general', and there is therefore no question of assigning a numerical value."(Ramsey, 1922; 1989).

Nowhere in the A Treatise on Probability or anything written by Keynes in his lifetime did Keynes state"… that between any two non-self-contradictory propositions there holds a probability relation…"(Ramsey, 1922).

Second, there is no such axiom one "…Axiom I…" in Keynes's A treatise on Probability (Ramsey, 1922)that was asserted by Keynes in the A Treatise on Probability or anything written by Keynes in his lifetime.

Ramsey's "…'My carpet is blue';' Napoleon was a great general'…" (Ramsey, 1922) example is directly ruled out by Keynes's argument form, first specified on p.4 of A Treatise on Probability, specifying that the h proposition(s), that form the premises of the argument, must contain relevant evidence that is related /associated to the proposition(s) upon which to base a

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conclusion, a, so that P(a/h)=α,0≤α ≤1, where α is a degree of rational belief .The a and h propositions must be related so that the evidence supporting the conclusion is connected ,where P stands for the logical, objective, probability relation (the similarity exhibited between the h and a propositions) that holds between h and a. Given the fact that nothing Ramsey is talking and writing about on p.3 of his note has anything to do with Keynes's A treatise on Probability, the claim, that Ramsey destroyed and demolished Keynes's logical theory in 1922, is a claim that most likely can only be found among economists and philosophers who write about Keynes's views on probability despite never having actually read anything in the A Treatise on Probability except bits and pieces cobbled together in a bizarre fashion.

Keywords: Keynes, Probability

INTRODUCTION

The paper will be organized in the following manner. Section Two will examine all fifteen paragraphs that contain Ramsey's numerous false claims in his 1922 ,Jan., Cambridge Magazine .Section Three will examine all 20 paragraphs containing numerous false claims that were made by Ramsey in 1926 in his "Truth and Probability" that was later published in 1931. Section Four will study how Misak simply accepted the false claims and errors made by Ramsey and made them the foundation for her discussions of Keynes's theory of probability on 112-121 and 264-273 in her 2020 biography of Ramsey. Bateman's approach to evaluating Keynes's work in his A Treatise on Probability is very similar in scope to Misak's approach. Misak's errors in 2020 also appear in earlier work ,where she exhibited the exact same kind of confused and confusing assertions about Keynes that have no foundation in anything written by Keynes in his lifetime. Section Five concludes the paper.

Consider Ramsey's erroneous 15 paragraphs in his Jan., 1922 Cambridge Magazine review Consider the first paragraph of Ramsey's note:

"Mr. Keynes takes probabilities or probability relations as indefinable, and says that if q has to p the probability relation of degree a, then knowledge of p justifies rational belief of degree a in q"(Ramsey,1989). This is a badly incomplete statement ,since Ramsey never states that the propositions p and q must be related and or associated to one another in such a way as to form an argument form laid out by Keynes on pp.4-6 of his TP. Keynes's argument form requires that one proposition (the premises) provides relevant evidence for the second proposition (the conclusion). Further ,there can be more than one premise and/or more than one conclusion. It is not restricted to one h proposition and one a proposition as asserted by Ramsey without any citation to any page, section, chapter or part of the A Treatise on Probability.

Let us now consider Ramsey's Second paragraph:

"We have, then, numerous probability relations; these it is commonly supposed are all numerical, that is, correlated with the real numbers from 0 to 1 in such a way that the ordinary rules of the probability calculus hold, e.g., that the product of the numbers correlated with two probabilities is equal to the number correlated with the product (in Mr. Keynes' sense) of the two probabilities. Mr. Keynes denies this; he supposes not only that not all probabilities are numerical, but also that it is possible to have two probabilities which are unequal and such that neither is greater than the other. This view is based on the difficulty in so many cases of saying with any confidence which of two probabilities is the greater, or of assigning any numerical measures to them. But it would appear that the force of this objection to the ordinary view is exaggerated to Mr Keynes for two reasons"(Ramsey,1989).

Consider the following simple example. Define the interval probability p_1 to be equal to [.47,.55] and the interval probability p_2 to be equal to [.50,.58].It is obvious that Ramsey's doesn't understand that Keynesian probability is primarily interval valued,not numerically

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valued .Keynes is not" supposing" anything because there are an infinite number of such interval probabilities that are NOT numerical because the intervals overlap ,i.e. because they are" non numerical " .

Consider the Third Paragraph in Ramsey's note:

"First, he thinks that between any two non-self-contradictory propositions there holds a probability relation (Axiom I), for example between 'My carpet is blue' and 'Napoleon was a great general'; it is easily seen that it leads to contradictions to assign the probability 1/2 to such cases, and Mr Keynes would conclude that the probability is not numerical. But it would seem that in such cases there is no probability; that, for a logical relation, other than a truth function, to hold between two propositions, there must be some connection between them. If this be so, there is no such probability as the probability that 'my carpet is blue' given only that 'Napoleon was a great general', and there is therefore no question of assigning a numerical value."(Ramsey ,1989).

Nowhere in anything written by Keynes in his lifetime does he state that " First, he thinks that between any two non-self-contradictory propositions there holds a probability relation (Axiom I)…"Again, Ramsey makes the same mistake that he did in his opening paragraph-Ramsey ignores the precise argument form that the propositions must have to satisfy given Keynes's definition of a specific argument form on pages 4-6 of the TP.

Ramsey's second paragraph is the result of his gross ignorance of Keynes's imprecise, interval valued ,non additive approach to probability, as was illustrated by Keynes in the discussions of the beauty contest problem on pp.25-28 ,as well as by six other illustrations, in Chapter III of the A Treatise on Probability. The mathematical analysis of interval valued probability was presented in Part II in chapters 15 and 17. Ramsey never got around to ever reading this material in his lifetime.

This claim made by Ramsey directly conflicts with Keynes's use of propositions, which must be stated in the form of an argument (Keynes,1921)-one proposition must contain relevant evidence while the second proposition must be a conclusion with respect to the proposition containing the relevant evidence. Only then is a relation of logical probability present. Nowhere at any place in his A Treatise on Probability or any other work written in Keynes's lifetime did Keynes state "…that between any two non-self-contradictory propositions there holds a probability relation (Axiom I)…"(Ramsey,1922) Further ,There is no such Axiom I in Keynes's A Treatise on Probability. Therefore , Ramsey's"… 'My carpet is blue' and 'Napoleon was a great general…" example is an oxymoron because his two propositions do not form an argument form (Keynes,1921).It is simply gobbledygook. Nor would Keynes ever claim that "Mr. Keynes would conclude that the probability is not numerical".(Ramsey,1989). Mr. Keynes would state that the probability is not defined because there is no relevant evidence. There are no h propositions containing evidence. '

Next, we have the following quagmire created by Ramsey in his paragraphs four ,five and six:

"Secondly, it is surely obvious that probabilities may be numerical or comparable without our being able to assign their numerical values or compare them, owing to the imperfection of our logical insight. Thus a probability may, as Mr Keynes admits, be unknown to us through lack of skill in arguing from given evidence. But he says 'This admission must not be allowed to carry us too far. Probability is relative in a sense to the principles of human reason. The degree of probability which it is rational for us to entertain, does not presume perfect logical insight, and is relative in part to probability, if we do not limit it in this way and make it, to this extent, relative to human powers we are altogether adrift in the unknown; for we cannot ever know what degree of probability would be justified by the perception of logical relations which we are, and must always be, incapable of comprehending.' But we are concerned with the relation which actually holds between two Propositions (author's note-Ramsey continues to erroneously claim that only two propositions are involved); the faculty of

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perceiving this relation, accurately or otherwise, we call insight, perfect or imperfect. Mr. Keynes argues that owing to the possibility that our insight may be all wrong we should talk not of the relation which actually holds, but of the relations which, we have reason to suppose, holds. Then, he thinks, we could speak without fear of unknown factors. There seems, however, no good reason to confine this argument to probability. In everything, it might be urged, owing to the possibility that there is evidence to which we have no access, we are only justified in saying not 'p' but 'We have reason to suppose p'. The logical conclusion of this view is that we are not justified in saying anything at all; for our evidence about human reason might also be fragmentary. We cannot therefore reasonably say 'We have reason to suppose the probability is a', but only 'We have reason to suppose that we have reason to suppose the probability is a', and so on ad Infinitum on the lines of a celebrated argument in Dr Moore's Ethics."(Ramsey, 1989).

This convoluted and confusing gobbledygook made by Ramsey is due to Ramsey's continued, complete failure to comprehend the specific argument form that the propositions in Keynes's approach must have regarding relevant evidence. There is no infinite regress argument given by Keynes. Ramsey appears to have read into a statement made by Keynes on page 32 of the A Treatise on Probability that Ramsey has then combined with his previous false claim that

"First, he thinks that between any two non-self-contradictory propositions there holds a probability relation (Axiom I), for example between 'My carpet is blue' and 'Napoleon was a great general'."(Ramsey,1989,p.219).

More serious than the above confusing gobbledygook is the seventh paragraph:

"Mr. Keynes is like a surveyor, who, afraid that his estimates of the heights of mountains might be erroneous, decided that were he to talk about actual heights he would be altogether adrift in the unknown; so he said that heights were relative to surveyors' instruments, and when he came to a mountain hidden in mist he assigned it a non-numerical height because he could not see if it were taller or shorter than the others."(Ramsey ,1989,p.220;boldface added).

Ramsey here again is completely ignorant of the existence of imprecise probabilities ,since Keynes's"… a non-numerical height" is an estimate of a height with a lower and upper bound,or what we could call an imprecise height.Ramsey's claim is that probability is always precise,which means that it is always additive and definite.

Consider Ramsey's eighth,nineth and tenth paragraphs:

"After dealing with the measurement of probabilities, Mr Keynes proceeds to consider the Principle of Indifference, which he shows to lead, if stated in its usual form, to various contradictions. He proposes to remedy this by stating precise conditions for the validity of the Principle. He does not, however, seem to have done this successfully. At the bottom of p. 62, he says, 'Suppose that a point lies on a line of length ml, we may write the alternative "the interval of length I on which the point lies is the xth ... from left to right" 4= (x); and the Principle of Indifference can then be applied safely to the m alternatives 4(1), 0(2) ... (m)' and clearly this case does fall under his conditions; and so then does the analogous case in which we know that the density of a substance lies between 1 and 3; we can then take the 'interval of length 1 in which the density lies is the xth from left to right' =4(x) and apply the Principle to 4(1), 4(2), concluding that the density is equally likely to lie in the intervals 1-2 and 2-3; if now we apply this argument also to the specific volume which we know to be between 1 and 1/3, since the density lies between 1 and 3, we find that on the same data the specific volume is equally likely to lie in the intervals 1-2/3, 2/3-1/3 and therefore the density in the intervals 1-3/2, 3/2-3, which contradicts the result previously obtained. This contradiction is pointed out by Mr Keynes, p. 45, but he seems not to have noticed that it escapes his safeguards. (Ramsey ignores Keynes's discussion on pp46-47, where Keynes refutes Ramsey).

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The true solution of the difficulty seems to depend on Mr Johnson's notion 'The Determinable'. The Principle of Indifference may be stated as follows:

Relative to evidence, on which it is certain, that a given subject has one or other of a finite number of absolute determinates under the same determinable, the probabilities that the subject has each of those absolute determinates are equal, provided that the evidence is symmetrical with regard to the various alternatives. The Principle, so qualified, can be applied to dice, coins and cards, but not to such cases as the position of a point on a line, of in which the number possible absolute determinates (e.g., points on the line) is infinite. It appears that no principle can be given for cases of this second kind which would not lead to a contradiction like that of the volume and the density. The natural conclusion is that in such cases there is no probability; *i.e.,* that there is no logical relation between premiss and conclusion." (Ramsey,1922). Ramsey is simply using Keynes's definition from pp.55-56.

Ramsey is simply confused. All of Ramsey's examples here involve continuity, infinity and divisibility, which Keynes states are situations where a decision maker cannot always apply the POI. Keynes's so called "safegiuards" are completely ignored by Ramsey. Keynes lays down certain conditions that must hold for the sound (not valid, a term which is restricted to deductive logic) application of the POI. Keynes restricts and limits the application of his Principle of indifference (POI) by eliminating all applications dealing with continuity, infinity and divisibility. For Keynes, applications of the POI require a set of fixed , finite alternatives which are discrete and indivisible .Keynes also requires that there be positive evidence which is symmetric with respect to all of the alternatives and which totally exhaust the available evidence.

Finally ,Ramsey has grievously failed to cover Keynes 's more detailed discussions of measurement that occur in Parts II and IV of the A Treatise on Probability when he claims in his first sentence that "After dealing with the measurement of probabilities…"(Ramsey, ibid., 1922).

Ramsey deliberately ignores Keynes's discussions of measurement in chapters 15 and 17 of the TP. Ramsey's constant and continuous misrepresentation of Keynes's five conditions for the successful application of the POI ,which explicitly incorporated the condition that there can only be a finite number of alternatives ,is shown in Ramsey's strange conclusion, where

"…As the position of a point on a line, in which the number of possible absolute determinates (e.g., points on the line) is infinite. It appears that no principle can be given for cases of this second kind which would not lead to a contradiction like that of the volume and the density. The natural conclusion is that in such cases there is no probability; i.e., that there is no logical relation between premiss and conclusion."(Ramsey,1989).

Of course, Keynes never claimed that there was such a logical probability relation in the case of an infinite number of possible alternatives when considering the potential application of the POI. Ramsey simply ignores Keynes's clear requirement that the number of alternatives must be finite and tries to deliberately make his readers think that Keynes was attempting to apply his POI to cases with an infinite number of alternatives. This is called disception and intellectual dishonesty. Ramsey repeats this charade in 1926.See section 3 below .

Ramsey's eleventh paragraph is another example of his complete and total failure in his review to consider the possibility of imprecise ,interval valued probability ,which MUST BE nonaddtive. Ramsey repeats this error in 1926.See section 3 below:

"In Part II, Mr. Keynes gives a symbolic deduction of the formulae of the calculus of probabilities from definitions and axioms; this has a minor flaw. Mr Keynes conceals two important axioms in definitions; defining the sum of ab/h, a ~ b/h as a/h and the product of a/bh, b/h as ab/h, he conceals the assumptions that the sum and product so defined are always unique, i.e., that if ab/h = cd/k, (=P), aeb/h=c-~d/k, (=Q) then a/h=c/k, (=PQ); and that if a/bh=c/dk, (= P), b/h = d/k, (= Q) then ab/h = cd/k, (= PQ)."(Ramsey,1989,p.221).

This little tiny paragraph represents Ramsey's complete coverage of Part II of Keynes's A treatise on Probability, which a superior mathematician like Emile Borel described in 1939

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as" the beautiful work of Mr. J. M Keynes." There is no flaw here as pointed out by Bertrand Russell in his review. Keynes is presenting analysis that can deal with BOTH precise (additive) and Imprecise (non additive) probability. Ramsey is completely ignorant of the existence of imprecise probability ,interval valued probability ,and decision weights. Ramsey then tries to deal with Keynes's entire Part III in another little, tiny paragraph which completely overlooked the fundamental importance of Keynes's finite probability concept (see pp.233-239 ,Keynes,1921):

"Mr. Keynes' treatment of induction seems to be vitiated by the fact that he only considers the Method of Agreement, completely neglecting Mill's other four methods including, for example, the Method of Difference, which consists in inferring g(φ,f), not from numerous cases, otherwise as varied as possible, agreeing in having φf, but from sets of two cases, in other respects analogous, one having φf, the other not φ, not f."(Ramsey,1969,p.221).

Of course, Keynes deals with both similarity (Agreement)and dissimilarity (Differences)in Part III extensively. This paragraph is simple nonsense on Ramsey's part. Ramsey never read Part III of Keynes's Treatise.

Ramsey's second to last paragraph is confused because he fails to understand that Keynes's "a finite a priori probability "applies to both precise and imprecise probabilities .The word "rational",used by Ramsey below , needs to be replaced by the word "possible"if we are to make any sense of Ramsey's ruminations:

"Mr Keynes concludes that induction is only rational(author's note-this word makes no sense) if there is a finite a priori probability in favor of what he calls the Hypothesis of Limited Independent Variety; i.e., that all properties arise out of a finite number of generator properties. If this is to be taken literally, i.e., 'property' interpreted in the wide sense= propositional function of one variable, it is clearly equivalent to the hypothesis that the classes of things of the type considered are finite in number, since equivalent properties define the same class and on the hypothesis any property is equivalent to one of a finite number of properties (i.e., the generator properties and negations conjunctions and alternations of them). And this hypothesis that the classes of things are finite in number, is in turn equivalent to the hypothesis that the things are finite in number, since, if n be the number of things, 2" is the number of classes of things; so that the Hypothesis of Limited Variety is simply equivalent to the contradictory of the Axiom of Infinity."(Ramsey; bold face added).

The axiom of infinity is one of the axioms of Zermelo–Fraenkel set theory. It established that there exists at least one infinite set, namely a set containing the natural numbers. It was first published by Ernst Zermelo as part of his set theoretic work of 1908.Keynes's work has nothing to do with infinite sets and/or countable additivity, which Keynes would reject just as he rejected the generality of finite additivity. Keynes's hypothesis has nothing to do with being the contradictory of the axiom of infinity.

It is unclear what exactly Ramsey is talking about here or was at the back of his head since without the existence of a finite ,a priori probability(the prior probability),no a posteriori probability can be calculated and Bayes Law becomes impossible to apply. Keynes allows the initial, a priori probability to be either a precise ,numerical probability or an imprecise ,non numerical ,interval valued probability.

We finally arrive at the last paragraph in Ramsey's note. It shows that Ramsey has carried through his incorrect definition of Keynes's propositional logic from the beginning of his review to the end of his review:

"Lastly we may note that Mr. Keynes' definition of 'random' suggests that he may be wrong in his fundamental conception of probability. For in it occurs the probability φ(x)/S(x).h; and it is considered whether this is equal to φ(x)/ S(x)"h . x = a. φ(a)/S(a). h.

Now in φ(x)/S(x).h, x is a variable. φ(x), S(x) are not propositions at all but propositional functions. We have therefore a new kind of probability, a relation between two propositional functions, φ(x), S(x) and a proposition h; a kind which cannot possibly be reduced to the

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ordinary kind (a relation between two propositions). But the converse reduction (except on Mr Wittgenstein's view of identity) is always possible, e.g., φ(a)/S(a).h= (x)/S(x).x= a .h.

We have, therefore, two possibilities; either there are two kinds of probability relations, two termed relations between propositions, and three termed relations between two propositional functions and a proposition; or all probability relations are of the latter more complicated kind."(Ramsey,1989, boldface added).

Ramsey apparently failed to realize here (pp.412-416) that Keynes is dealing with statistical generalization in Part V of the A Treatise on Probability involving a series or sequence of repeated outcomes, and an instance taken at random. Keynes's propositional argument form need to be upgraded, as was already done by Keynes in section 16 of chapter Four, where he introduced propositional functions, a chapter that it should now be obvious that Ramsey skimmed, so as to allow for his argument form to include repeated outcomes ,as well as incorporating an instance taken at random.

The (statistical) evidence is thus of a different nature then as was originally expressed in chapter II. Contrary to Ramsey, Keynes's generalization of the frequentist approach within his propositional logic using propositional functions is NOT "…a new kind of probability, a relation between two propositional functions, φ(x), S(x) and a proposition h; A kind which cannot possibly be reduced to the ordinary kind (a relation between two propositions).." as Ramsey never got the nature of Keynes's original argument form down correctly anywhere in his review that Keynes provided in chapter II on pp.4-6.Keynes's argument form IS NOT RESTRICTED to only two propositions. There is only error at every point in Ramsey's review from the beginning of his ruminations on p.3 of his review , that we have covered above, to the end of his ruminations.

Ramsey's Final Assertion

"…therefore, two possibilities; either there are two kinds of probability relations, two termed relations between propositions, and three termed relations between two propositional functions and a proposition; or all probability relations are of the latter more complicated kind." is just more confused and confusing gobbledygook from Ramsey, who never grasped the fact that there are three different kinds of evidence for Keynes-(a)frequent, (b)infrequent, and (c)non frequent.

Ramsey's 1922 "review" of Keynes's A Treatise on Probability are the ill considered ruminations of an 18 year old teenager .This "review" is definitely not "brilliant."(Wheeler,2012).It is baloney dressed up as scholarly work. It is worthless and useless. The confused and confusing gobbledygook from Ramsey in 1922 provided the foundation for Braithwaite's intellectual mess placed at the front of the 1973 edition of the CWJMK as an editorial foreword. Readers of this foreword are doomed from the start to suffer failure about what Keynes did because they will have been confused by a confused confuser, Richard Braithwaite.

All fifteen of Ramsey's paragraphs from his 1922 review have been examined in this section. Every paragraph is either completely wrong or partially wrong. The basis for republishing this review, which was completely ignored by Borel, Wilson, Edgeworth ,and de Finetti, by the BJPS is really a great mystery in itself that needs to be investigated.

Ramsey's severe errors in his 1926 review

My (2004a) and (2004b) books examined a number of Ramsey's errors in both his 1922 Cambridge Magazine review and in his 1926 "Truth and Probability" paper that was published in 1931.This section will cover every paragraph in which Ramsey attacks some aspect of Keynes's work in the Treatise in gener. It is straightforward to demonstrate that Ramsey does not have the slightest idea about what Keynes is doing as ,four years after the publication of his

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review in Cambridge Magazine, he still fails to grasp that Keynes's theory is primarily one of imprecise probability based on inexact measurement and approximations.

Ramsey's Jan., 1922 Cambridge Magazine review consisted of three pages containing 15 paragraphs. Every single paragraph contains one or more errors which completely vitiated all of Ramsey's claims,all of which rely on utterly preposterous interpretations of Keynes's work,such as showing that Keynes's POI approach does not hold if one is dealing with alternatives involving conditions of infinity, continuity and divisibility, which are exactly the specific applications that Keynes ruled out of bounds so that the POI COULD NOT be applied soundly in such cases. See my analysis of Ramsey's paragraphs 7,8, and 9 above in section two . I now consider Ramsey's musings and ruminations in 1926.

Consider the following :

"Mr. Keynes starts from the supposition that we make probable inferences for which we claim objective validity; we proceed from full belief in one proposition to partial belief in another, and we claim that this procedure is objectively right, so that if another man in similar circumstances entertained a different degree of belief, he would be wrong in doing so. Mr. Keynes accounts for this by supposing that between any two propositions, taken as premiss and conclusion, there holds one and only one relation of a certain sort called probability relations; and that if, in any given case, the relation is that of degree α, from full belief in the premiss, we should, if we were rational, proceed to a belief of degree α in the conclusion."(Ramsey,1926).

This is a continuation of Ramsey's 1922 claim that between any two non contradictory propositions, there held a relation of logical probability. This is a false summary of Keynes's theory, Ramsey erects his entire argument against Keynes's theory on his false definitions:

"Before criticizing this view, I may perhaps be allowed to point out an obvious and easily corrected defect in the statement of it. When it is said that the degree of the probability relation is the same as the degree of belief which it justifies, it seems to be presupposed that both probability relations, on the one hand, and degrees of belief on the other can be naturally expressed in terms of numbers, and then that the number expressing or measuring the probability relation is the same as that expressing the appropriate degree of belief. But if, as Mr. Keynes holds, these things are not always expressible by numbers, then we cannot give his statement that the degree of the one is the same as the degree of the other such a simple interpretation, but must suppose him to mean only that there is a one-one correspondence between probability relations and the degrees of belief which they justify.

This correspondence must clearly preserve the relations of greater and less, and so make the manifold of probability relations and that of degrees of belief similar in Mr. Russell's sense. I think it is a pity that Mr Keynes did not see this clearly, because the exactitude of this correspondence would have provided quite as worthy material scepticism as did the numerical measurement of probability relations. Indeed some of his arguments against their numerical measurement appear to apply quite equally well against their exact correspondence with degrees of belief; for instance, he argues that if rates of insurance correspond to subjective, i.e. actual, degrees of belief, these are not rationally determined, and we cannot infer that probability relations can be similarly measured. It might be argued that the true conclusion in such a case was not that, as Mr Keynes thinks, to the non-numerical probability relation corresponds a non-numerical degree of rational belief, but that degrees of belief, which were always numerical, did not correspond one to one with the probability relations justifying them."(Ramsey,1926; Kyburg & Smokler,1980)

Of course, there is no such thing as Ramsey's claims about "…to the non-numerical probability relation corresponds a non-numerical degree of rational belief."

Ramsey simply repeats his errors all over again from 1922 because Mr. Keynes's account requires a specific argument form as was discussed in section 2 above. Likewise, it is

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not restricted to only two propositions consisting of one h proposition and one a proposition. There can be more than one a and/or h propositions.

The rest of Ramsey's quote is a garbled mess that we can analyze using Keynes's two logical relations ,P and V, where P(a/h)= α,0≤α≤1,where α is a rational degree of belief and V(a/h)=w,0≤w ≤1,and w measures the degree of the completeness of the relevant evidence(Keynes,1921) supporting the argument form of P. V(a/h) =w, 0≤w≤1 is Keynes 's second logical relation that works in tandem with the P relation.

We can summarize Keynes's theory before we demonstrate its application in the case where w<1. There can be no such thing in Keynes's logical theory of probability as a non numerical probability relation. There are two logical relations; the logical relations P and V , where a decision, D, is a function of P and V,so D=f(P,V).BOTH relations must be applied.

P(a/h)=a rational degree of belief where alpha,α, is between 0 and 1 and
V(a/h) =w,where w is between 0 and 1

The V relation imposes restrictions on P. If w=1,then there is a unique, numerical degree of rational belief; if 0<w<1,then there is an interval valued probability with an upper probability and a lower probability; if w=0,then there is no probability.

Thus ,for Keynes ,belief depends on both P and V, not P alone ,as argued by Ramsey. Ramsey, however, is correct in one very special case -the case where w=1,so that all of the α values are numerical. It does not hold in the general case where w<1 and where one must explicitly consider non and sub addiitvity, so that the α values are interval valued probabilities or c values .A decision maker can accept, and have a different opinion about, any value within the boundary set up by the upper and lower probabilities. A w<1 creates complex and intricate problems about one's beliefs because of the non linearities introduced by w in Keynes's decision theory ,which is a function of both α(probability) and w(weight) .This can best be seen by using the Mathematica or MATLAB program to generate three dimensional contours of Keynes's conventional coefficient of risk and weight involving c,p and w. Everything simplifies if w=1 and linear probability preferences are assumed .

Ramsey does not have any idea about V. Hence ,he has no inkling about the role that weight(confidence) plays in belief .There is no simple ,direct, linear connection between probability and belief for Keynes as there is for Ramsey. The one exception is, if and only if, w=1,so that V drops out and one is left with α.

Let us now consider Ramsey's example. It is as worthless as the example given by Ramsey in 1922:

"Besides this view is really rather paradoxical; for any believer in induction must admit that between 'This is red ' as conclusion and ' This is round ', together with a billion propositions of the form 'a is round and red' as evidence, there is a finite probability relation; and it is hard to suppose that as we accumulate instances there is suddenly a point, say after 233 instances, at which the probability becomes finite and so comparable with some numerical relations."(Ramsey,1926).

This example directly violates the argument form put forth by Keynes on pp.4-6 of the TP, since there is no connection between "This is red" and" This is round" because these two propositions are not related, so that neither proposition provides any information or evidence with regards to the other .There is no conditional probability for (this is red/given that that is round).Again, given the fact that the example has nothing whatsoever to do with anything that is in Keynes's book, my only conclusion is that Ramsey must have been on some type of medication ,drug, or narcotic or that he is, like Wittgenstein, a genius who also suffered temporary bouts of insanity. Note also Ramsey's attempt to introduce a joint probability that has nothing to do with Keynes's theory based on conditional probability.

Consider the following coin example of Ramsey in 1926:

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"It is true that about some particular cases there is agreement, but these somehow paradoxically are always immensely complicated; we all agree that the probability of a coin coming down heads is 1/2 , but we can none of us say exactly what is the evidence which forms the other term for the probability relation about which we are then judging."(Ramsey,1926, In Kyburg & Smokler,1980).

The problem here is that Ramsey is overlooking the question of whether the coin is a fair coin or is not a fair coin.Ramsey hides the evidence by presenting the problem as being one of calculating a marginal probability, so that we have the
P(H)=1/2.

This can only be the case if we replace Ramsey's
"…we all agree that the probability of a coin coming down heads is ½." by
"…we all agree that the probability of a FAIR coin coming down heads is ½.",where the evidence has been subsumed in the word "fair".

Ramsey's claim ,that we all agree that a coin coming up heads is ½ ,is false because the probability of an UNFAIR coin coming up heads IS NOT ½. Misstates Keynes's position by quoting from p.32 of the TP that "…The degree of probability, which it is rational for *us(*Keynes's emphasis) to entertain ,does not presume perfect logical insight…"(Ramsey,1980; Kyburg & Smokler,1980)while ignoring Keynes's analysis which specify that the logic of logical probability is degree of similarity ,which does NOT presume perfect logical insight.

Now let us consider the clearest statement made by Ramsey showing that he was simply ignorant of the applicability of the concept of interval valued probability being used to measure a probability, which Keynes correctly called inexact measurement. Ramsey, unfortunately ,seeks exact measurement only:

"It is a common view that belief and other psychological variables are not measurable, and if this is true our inquiry will be vain ; and so will the whole theory of probability conceived as a logic of partial belief; for if the phrase 'a belief two-thirds of certainty ' is meaningless, a calculus whose object is to enjoin such beliefs will be meaningless also. Therefore unless we are prepared to give up the whole thing as a bad job we are bound to hold that beliefs can to some extent be measured. If we were to follow the analogy of Mr Keynes' treatment of probabilities we should say that some beliefs were measurable and some not; but this does not seem to me likely to be a correct account of the matter: I do not see how we can sharply divide beliefs into those which have a position in the numerical scale and those which have not. But I think beliefs do differ in measurability in the following two ways. First, some beliefs can be measured more accurately than others; and, secondly, the measurement of beliefs is almost certainly an ambiguous process leading to a variable answer depending on how exactly the measurement is conducted. The degree of a belief is in this respect like the time interval between two events.

I shall try to argue later that the degree of a belief is just like a time interval; it has no precise meaning unless we specify more exactly how it is to be measured. But for many purposes we can assume that the alternative ways of measuring it lead to the same result, although this is only approximately true. The resulting discrepancies are more glaring in connection with some beliefs than with others, and these therefore appear less measurable. Both these types of deficiency in measurability, due respectively to the difficulty in getting an exact enough measurement and to an important ambiguity in the definition of the measurement process, occur also in physics and so are not difficulties peculiar to our problem; what is peculiar is that it is difficult to form any idea of how the measurement is to be conducted, how a unit is to be obtained, and so on…; we have also to assign numbers to these degrees in some intelligible manner. We can of course easily explain that we denote full belief by 1, full belief in the contradictory by 0, and equal beliefs in the proposition and its contradictory by 2

But it is not so easy to say what is meant by a belief 2/3 of certainty, or a belief in the proposition being twice as strong as that in its contradictory. This is the harder part of the task,

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but it is absolutely necessary; for we do calculate numerical probabilities, and if they are to correspond to degrees of belief we must discover some definite way of attaching numbers to degrees of belief. In physics we often attach numbers by discovering a physical process of addition[1]…, We have therefore to find a process of addition for degrees of belief, or some substitute for this which will be equally adequate to determine a numerical scale."(Ramsey,1980; Kyburg & Smokler,1980).

Now Keynes demonstrated ,in Part II of the TP in chapters 10-14 , that the addition rule is not generally applicable; therefore, probabilities are ,in general, non additive, since they will NOT sum to 1.Ramsey,like Tinbergen after him ,seeks to use physics as his guide in developing measurability:

"…but it is absolutely necessary; for we do calculate numerical probabilities, and if they are to correspond to degrees of belief we must discover some definite way of attaching numbers to degrees of belief. In physics we often attach numbers by discovering a physical process of addition1… We have therefore to find a process of addition for degrees of belief, or some substitute for this which will be equally adequate to determine a numerical scale."(Ramsey,1980; Kyburg & Smokler,1980).

Ramsey is thus committed to exact measurement, specifying the general applicability of the addition rule(additivity),while Keynes 's emphasis is on inexact measurement, non additivity ,specifying the general applicability of interval valued probability and decision weights.
Nowhere in his 1926 "Truth and Probability" does Ramsey ever mention non additivity, interval valued probability, decision weights or inexact measurement. Ramsey was simply ignorant of Keynes's inexact approach to probability measurement in Part II of the TP because he never read Part II.

Ramsey returns to his critique of Keynes in (Kyburg & Smokler ,1980): "Logic as the science of argument and inference is traditionally and rightly divided into deductive and inductive; but the difference and relation between these two divisions of the subject can be conceived in extremely different ways. According to Mr. Keynes valid deductive and inductive arguments are fundamentally alike; both are justified by logical relations between premiss and conclusion which differ only in degree. This position, as I have already explained, I cannot accept. I do not see what these inconclusive logical relations can be or how they can justify partial beliefs. In the case of conclusive logical arguments I can accept the account of their validity which has been given by many authorities, and can be found substantially the same in Kant, De Morgan, Peirce and Wittgenstein. All these authors agree that the conclusion of a formally valid argument is contained in its premisses; That to deny the conclusion while accepting the premisses would be self-contradictory; that a formal deduction does not increase our knowledge, but only brings out clearly what we already know in another form; and that we are bound to accept its validity on pain of being [p.186] inconsistent with ourselves. The logical relation which justifies the inference is that the sense or import of the conclusion is contained in that of the premisses. But in the case of an inductive argument this does not happen in the least; it is impossible to represent it as resembling a deductive argument and merely weaker in degree; it is absurd to say that the sense of the conclusion is partially contained in that of the premisses. We could accept the premisses and utterly reject the conclusion without any sort of inconsistency or contradiction."(Ramsey,1980.In Kyburg and Smokler,p.43-Ramsey's irrational diatribe against an inductive logic built on pattern recognition,analogy,resemblance,and degrees of similarity/dissimilarity at the top of page 44 is not covered.)

Keynes's answer to Ramsey was really quite simple.It was stated on pp.35-36 in chapter III(TP,1921) and then expanded upon in great detail in Part III of theTP.The alleged inconclusive logical relation is the relation of similarity, a relation that exists between events, outcomes or objects ,which was then extended to propositions by Boole in 1854 in *The Laws of Thought*. This relation of similarity is the foundation for pattern recognition ,which is what IQ tests purportedly are able to test for and measure.

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Consider now Ramsey's statement on (Kyburg & Smokler,1980) of the same point he raised on in 1922:

"We shall, I think, find that this view of the calculus of probability removes various difficulties that have hitherto been found perplexing. In the first place it gives us a clear justification for the axioms of the calculus, which on such a system as Mr Keynes' is entirely wanting. For now it is easily seen that if partial beliefs are consistent they will obey these axioms, but it is utterly obscure why Mr Keynes' mysterious logical relations should obey them.[1]We should be so curiously ignorant of the instances of these relations, and so curiously knowledgeable about their general laws."(Ramsey,1980)

Ramsey's footnote is a carbon copy of the 1922 claim that has been shown to be worthless ,as it simply demonstrates Ramsey's gross ignorance of the concept of interval probability:

"… It appears in Mr. Keynes' system as if the principal axioms -- the laws of addition and multiplication -- were nothing but definitions. This is merely a logical mistake; his definitions are formally invalid unless corresponding axioms are presupposed. Thus his definition of multiplication presupposes the law that if the probability of a given bh is equal to that of c given dh, and the probability of b given h is equal to that of d given h, then will the probabilities of ab given h and of cd given h be equal."(Ramsey ,ibid.,1980).

Keynes's answer could have been brutally short:

"Frank,of course interval valued probabilities are not additive and will not obey the laws of the calculus of probability unless the lower and upper bounds are the same .Did you work through any of the 17 problems that are contained in chapters 15 and 17 of my book?" Ramsey would have had no good answer. The result would have been the end of Ramsey's academic career at Cambridge as he replied to Keynes that he had no idea about what these problems dealt with. Ramsey continues to repeat material taken from his 1922 review, this time regarding Keynes's POI:

"Secondly, the Principle of Indifference can now be altogether dispensed with; we do not regard it as belonging to formal logic to say what should be a man's expectation of drawing a white or a black ball from an urn; his original expectations may within the limits of consistency be any he likes; all to point out is that if he has certain expectations he is bound in consistency to have certain others. This is simply bringing probability into line with ordinary formal logic, which does not criticize premisses but merely declares that certain conclusions are the only ones consistent with them. To be able to turn the Principle of Indifference out of formal logic is a great advantage; for it is fairly clearly impossible to lay down purely logical conditions for its validity, as is attempted by Mr. Keynes. I do not want to discuss this question in detail, because it leads to hair-splitting and arbitrary distinctions which could be discussed for ever. But anyone who tries to decide by Mr. Keynes' methods what are the proper alternatives to regard as equally probable in molecular mechanics, e.g. in Gibbs' phase-space, will soon be convinced that it is a matter of physics rather than pure logic. By using the multiplication formula, as it is used in inverse probability, we can on Mr. Keynes' theory reduce all probabilities to quotients of a priori probabilities; it is therefore in regard to these latter that the Principle of Indifference is of primary importance; but here the question is obviously not one of formal logic. How can we on merely logical grounds divide the spectrum into equally probable bands?" (Ramsey,1980,p.46).

Of course ,Keynes NEVER considered the POI to be an exercise in pure formal logic and never attempted to lay down "purely logical conditions for its validity", as validity is part of formal deductive logic. Keynes sought to lay down rules that would lead to the sound application of the POI. Nowhere does Keynes attempt to prove its validity. Nowhere in anything written by Keynes in his lifetime is there any attempt to

"… lay down purely logical conditions for its validity, as is attempted by Mr. Keynes."(Ramsey,1980)

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Keynes made it clear that the POI could only be properly applied with discrete outcomes. That means one could use the uniform ,binomial, Poisson and hypergeometric probability distributions, but not the continuous normal distribution ,which is the work horse distribution used by Gibbs or the light spectrum ,both of which involve infinity .Again ,I find deliberate distortion ,deception and deceit on Ramsey's part as he deliberately tries to mislead and misrepresent Keynes's work on the POI in chapter IV of the TP.

Ramsey's deliberate misrepresentation of Keynes's work is especially dishonest ,given his own discussions about infinite outcomes:

"Thirdly, nothing has been said about degrees of belief when the number of alternatives is infinite. About this I have nothing useful to say, except that I doubt if the mind is capable of contemplating more than a finite number of alternatives. It can consider questions to which an infinite number of answers are possible, but in order to consider the answers it must lump them into a finite number of groups. The difficulty becomes practically relevant when discussing induction, but even then there seems to me no need to introduce it."(Ramsey,1980; In Kyburg & Smokler)

Ramsey's erroneous understanding ,that there can be only one h proposition and one a proposition in Keynes's propositional logic, shows up again in (Kyburg & Smokler,1980) :

"A Third difficulty which is removed by our theory is the one which is presented to Mr. Keynes' by the following case. I think I perceive or remember something but am not sure; this would seem to give me some ground for believing it, contrary to Mr. Keynes' theory, by which the degree belief in it which it would be rational for me to have is that given by the probability relation between the proposition in question and the things I know for certain. He cannot justify a probable belief founded not on argument but on direct inspection."(Ramsey,1980; in Kyburg & Smokler). Again ,Ramsey's utterly preposterous ,incomprehensible gobbledygook, that there can be only one a proposition (conclusion) and one h proposition, leads one to dismiss Ramsey's claim as being intellectually worthless. We now arrive at the final error in Ramsey's 1926 "Truth and Probability" as regards Keynes's system ,an error resulting from Ramsey's failure to understand the importance of the existence of Keynes's concept of finite probability ,which must be greater than some numerical or non numerical ,interval probability ,introduced in Part III of the TP, which Ramsey never read. If he had read this material, then he would not have made the following assertion that appears on page 48(Kyburg & Smokler, 1980):

"By using this definition, or on Mr. Keynes' system simply by using the multiplication law, we can take my present degrees of belief, and by considering the totality of my observations, discover from what initial degrees of belief my present ones would have arisen by this process of consistent change. My present degrees of belief can then be considered logically justified if the corresponding initial degrees of belief are logically justified. But to ask what initial degrees of belief are justified, or in Mr. Keynes' system what are the absolutely a priori probabilities, seems to me a meaningless question; and even if it had a meaning I do not see how it could be answered. "(Ramsey,1980; in Kyburg & Smokler; boldface added)

Of course, Keynes was very clear that if there is no finite probability in favor of the hypothesis coming from a source other than the given data (see Keynes),then his system of inductive logic can't be applied to those kinds of cases, so no answer can be given.

I have covered all of Ramsey's assertions contained in both of his reviews in 1922 and 1926 concerning Keynes's logical theory of probability as laid out by Keynes in his A Treatise on Probability in 1921.The question that needs to be investigated is not Keynes's alleged mysterious or mystical or non measurable, non numerical probabilities ,but how it came to pass that reviews as extremely poor as those written by Ramsey's could be used to assert that Ramsey had demolished ,destroyed or devastated Keynes's theory. None of Ramsey's assertions are correct in the Cambridge Magazine about Keynes. None of Ramsey's assertions in Truth and probability are correct as regards Keynes. The following position of B. Bateman is truly incomprehensible:

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"Ramsey's most noticed achievement (to date) by historians of economic thought is probably the open challenge he made to Keynes's Treatise on Probability, a criticism that first appeared during the second ten-week term of Ramsey's second year as an undergraduate in a short review published in the Cambridge Magazine (January 1922). Keynes had postulated that probability is an objective logical relation between two propositions; Ramsey denied that any such relations existed, completely undercutting the work that had taken Keynes roughly fifteen years to bring to fruition in 1921.

How did an eighteen-year-old undergraduate have the audacity to make such a critique and how had he been able to publish it? This is the story that Paul tells so well."(Bateman, 2016). What is worth a full scale academic investigation is the paragraph where Bateman asks "How did an eighteen-year-old undergraduate have the audacity to make such a critique and how had he been able to publish it?" when his 1922 review is complete and total intellectual garbage masquerading as valuable ,intellectual work.

How was it Possible for the Extreme Feebleness of Ramsey's Reviews to Have Gone Unnoticed For 100 Years ?

C.Misak (2020) has very recently resurrected the foolish, funny, silly and stupid belief that Ramsey destroyed and demolished Keynes's logical theory of probability, as contained in the A Treatise on Probability in 1921 ,in a very tiny three page, unrefereed comment published in Jan., 1922 issue of the Cambridge Magazine when he was 18 years old in her biography of Ramsey. Misak has continued to make her claim in a number of other publications as well. The name Boole does not appear in any of her ongoing commentary or in her book, just as the Boolean foundation of Keynes's work does not appear at all in any of the work on Keynes done by I J Good, Harold Jeffreys, R.Monk, I Hacking, ,H.Mellor, etc ,and does not appear at all in any of the work on Keynes done by G. Meeks, R. Skidelsky, D.Moggridge , B. Bateman, R.O'Donnell, A.Carabelli,etc. Consider the following discussion provided by Misak (2020):

"Truth and Probability' would sketch Ramsey's alternative to Keynes's conception of probability and set the course for subjective probability theory and decision theory. But it is clear that his position was already gelling when he was an undergraduate. In the same month that Ramsey's 1922 review of the Treatise appeared, Keynes wrote to Broad: I find that Ramsey and the other young men at Cambridge are quite obdurate, and still believe that either Probability is a definitely measurable entity, probably connected with Frequency, or it is of merely psychological importance and is definitely non-logical. I recognize that they can raise some very damaging criticisms against me on these lines. But all the same I feel great confidence that they are wrong. Braithwaite would have been one of the young men leaning towards the frequency theory."(Misak, 2020). Now Keynes makes it very clear that "But all the same I feel great confidence that they are wrong." (Misak, 2020).A reader would now be expecting to see a discussion of what points Keynes felt he could make to refute the criticism being levelled.

Misak presents nothing dealing with how Keynes felt that he could easily refute the young men at Cambridge. Instead, we find this: "Keynes was shaken by Ramsey's criticism. Clive Bell, who wasn't a logician, but had lived in the same house as Keynes when he was finishing the manuscript, said that Ramsey made a rent' in Keynes theory, 'which caused the stitches to run'(boldface added). Roy Harrod, who did understand the arguments, said that while Keynes took a negative review of Joseph's to be irritating and off the mark, he thought that Ramsey's was neither: "The only criticism which disturbed Keynes at this time came from another quarter. There was an undergraduate at Trinity, Cambridge, who had recently arrived from Winchester, the son, like Keynes of a Cambridge don. This was Frank Ramsey. Keynes quickly spotted him as a young man of outstanding genius. Although he was still an undergraduate when the Treatise appeared, his criticism carried more weight with Keynes than any other, and it is not clear that Keynes felt that he had a satisfactory answer to it.

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The Treatise on Probability was an important book for Keynes. It shaped his later views of what we now call risk and uncertainty. It was also important to Ramsey, shaping, in a negative way, his own ideas about uncertainty and how to measure it. The debate set the tone for the future relationship between these two distinguished probability theorists. Keynes had been hearing from almost everyone that the Treatise was a major achievement until it fell apart under the criticism of his favourite undergraduate."(Misak, 2020).

The errors here reflect that Misak herself has no idea about what Keynes's crushing response to Ramsey ,based on Part II of the TP, would have been if he had chosen to deploy it. Misak above has confused the concept of uncertainty with risk. Ramsey 's system can only deal with risk. Furthermore ,pace Misak, the majority of reviews of the TP were critical, not laudatory. There are many unanswered questions in Misak's book. I have specified a few of these questions below:

- Given that Keynes believed that "But all the same I feel great confidence that they are wrong", how is it possible to conclude that" Keynes was shaken by Ramsey's criticism"?
- How is it possible for Clive Bell, an artist with no knowledge of mathematics, statistics, logic or Boolean algebra and logic ,to have been an expert on Keynes 's theory ?
- Again, given that Keynes believed that "But all the same I feel great confidence that they are wrong", how could Keynes feel " The only criticism which disturbed Keynes….."since Keynes had already made it clear that he was not bothered at all by the young men of Cambridge?
- Again ,given that Keynes believed that "But all the same I feel great confidence that they are wrong", how is it possible to conclude that" it is not clear that Keynes felt that he had a satisfactory answer to it."?
- Given Ramsey's commitment to numerical probability ,it is impossible for Ramsey to deal with uncertainty unless Misak has equivocated on the meaning of uncertainty in her sentence that" It was also important to Ramsey, shaping, in a negative way, his own ideas about uncertainty and how to measure it."Additivity means that risk alone can be at issue. Uncertainty can not be dealt with by Ramsey's theory.Misak never explains why. How can Ramsey deal with uncertainty if he has already assumed additivity ,which rules out uncertainty ?
- How was it that Keynes's theory "…fell apart under the criticism of his favourite undergraduate."if Ramsey himself was totally and completely ignorant of the impregnable logcal foundation erected by Keynes in Part II based on the Boolean approach of 1854?

The uncontestable fact is that Misak herself has no idea about what Keynes theory was about. Misak is relying on either the philosophers(I J Good, Harold Jeffreys, R.Monk, I Hacking, H., Mellor, etc) or the economists(G. Meeks, R. Skidelsky, D.Moggridge , B. Bateman, R.O'donnell, A.Carabelli,etc.) for her "understanding" of what Keynes was doing.However, they can provide neither, since none of the philosophers(I J Good, Harold Jeffreys, R.Monk, I Hacking, H.Mellor, etc) or the economists(G. Meeks, R. Skidelsky, D.Moggridge , B. Bateman, R.O'donnell, A.Carabelli,etc) ever read Part II of the TP. The current lack of basic understanding of Keynes's accomplishments in the TP, which were all covered by Edgeworth in his two reviews,explain the current come back of the Ramsey myth as presented by Misak(see references). The fact that Keynes had refuted Ramsey on pp. 35-36 of the TP one year before Ramsey started making his claims in 1922,is currently completely unknown among philosophers and economists. Ramsey didn't even get the most basic foundation of Keynes's approach down, which was the logic of objective similarity relations that Keynes fully develops in Part III of the TP. The only conclusion possible is that ,due to this giant lacuna,it is advisable that all academics stop using the work on Keynes produced by I J Good, Harold Jeffreys, R.Monk, I Hacking, H. Mellor, etc., and G. Meeks, R. Skidelsky, D.Moggridge , B. Bateman, R.O'donnell, A.Carabelli,etc. ,because of the very misleading conclusions arrived at by these authors ,who simply are totally ignorant of the very basic analysis carried out by Boole in 1854 in his The Laws of Thought that serves as the foundation for all of Keynes's work.

Consider Misak's claims again and her following statements:

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"Keynes's theory of probability was his first target. His attack was mounted in a review of the book in the January 1922 issue of Ogden's Cambridge Magazine and in less formal settings. Braithwaite's reaction indicates just how effective it was. He recalled that he read Keynes's Treatise in the long vacation, immediately after it came out, and said that he swallowed it whole: 'Whereupon Ramsey produced some pretty serious criticisms of it and shook my beliefs about it.

Ramsey peppered his review of the Treatise with problems that are simply made up :

"He objected to the attempt to provide a logical foundation for the Principle of Indifference. He objected to the idea of an unmeasurable, non-numerical probability and would later, in the 'Truth and Probability', offer an account of how all probabilities are measurable. And he objected to the very idea of Keynes's objectively fixed probability relations the idea that all statements stand in logical relations to each other. As Ramsey put there is no such probability as the probability that 'my carpet is blue' given that 'Napoleon was a great general'." (Misak, 2020).

Misak's belief that Keynes believed that"… all statements stand in logical relations to each other." is simply incomprehensible, preposterous , gobbledygook. Next ,consider the following:

"In January 1922, a 19-year-old University of Cambridge undergraduate challenged a recently published work of philosophy by a fellow of King's College, Cambridge, a man twice his age and well on his way to recognition as Britain's leading public intellectual. In the uninhibited style that is so characteristic of Cambridge argumentation, Frank Ramsey laid into John Maynard Keynes's Treatise on Probability, which had proposed that there exists an objective probability relation between any two noncontradictory statements. Keynes had conferred on probabilities a status independent of anyone's beliefs about the likelihood that the second statement would follow from the first. But Ramsey objected that, "There is no such probability as the probability that 'my carpet is blue' given only that 'Napoleon was a great general.'"

Much would depend on this intellectual encounter, for Keynes came to accept Ramsey's critique, and followed the younger man in accepting that necessarily fallible subjective beliefs about the future play a role in any decision to act."(W. Janeway,2020).

It is total nonsense to claim that Keynes proposed a logical theory of probability where "… there exists an objective probability relation between any two noncontradictory statements." (Janeway,2020).

Finally, it has been claimed that Ramsey made a "…brilliant critique of Keynes's ideas about probability(1922)."(Wheeler,2012,p.443).This is also nonsense. Similar types of nonsense can be found in ,for instance ,the works of Skidelsky(1992,chapter 3), Zabell, Weatherson, (2002) , Suppes, and many others. See the references. Methven follows the pattern of not having read the TP. In a footnote. Methven claims the following in his footnote 2 in chapter 3 on page 54 of his 2015 book:

"For a fine example of Ramsey's astuteness at even the young age of 18,see his meticulous review of Keynes's A Treatise on Probability…"(Methven ,2015).

In fact ,just the opposite is the case. Ramsey,at the age of 18,does not provide a single ,correct piece of analysis in his three page note. In other word, any serious scholar, such as Borel in 1939,who had changed his views from his 1924 review and was now talking about "…the beautiful work done by Mr. J. M Keynes…"in his TP ,would have to wonder how could such a piece of work of such very low quality make it as the lead article in the 1922 ,January issue of Cambridge Magazine?

CONCLUSIONS

Citation Information: Brady, M.E. (2021). On the correction of all thirty five errors contained in Ramsey's 1922 and 1926 reviews of Keynes's treatise. *Journal of management Information and Decision Sciences, 24*(S6), 1-19.

The Ramsey myth being pushed in Misak's 2020 biography of Ramsey and many other philosophers and economists does not have a single shred of support. J M Keynes could not respond to Ramsey's 1922 Cambridge Magazine "article" Keynes's response would have required him to methodically show that every paragraph of Ramsey's 3 page note didn't make any sense at all due to the large numbers of errors of commission and omission. Ramsey not only didn't get anything right about chapters I,II and III of the A Treatise on Probability. There is nothing in the three page review of the A Treatise on Probability that is correct.

The real mystery is not Keynes's " mysterious " non numerical probabilities ,which are interval valued ,imprecise probabilities. The real mystery is how literally thousands of academic economists and philosophers could have taken such a poorly written paper by an 18 year old teenager seriously for 100 years. This paper examines every criticism directed at Keynes in the fifteen paragraphs that make up Ramsey's 1922 review and the 20 paragraphs contained on pp .25-32 ,and 43-48 of his 1926 "Truth and Probability" that criticize Keynes as contained in Kyburg and Smokler's 1980 edited volume ,titled "Studies in Subjective Probability .I can find no criticism made by Ramsey which is correct and related to something stated by Keynes in his A treatise on Probability.Much of this paper merely rewrites the analysis of Ramsey's severe deficiencies contained in my books of 2004.

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