

**Economic theory after  
Keynes: What Could Have  
Been, What Might Still Be**

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### Keynes's method

- The true novelty of his theory is his method: a new way of reasoning in economics
- Keynes's *Treatise on Probability* is his "essay on method"
- A continuity between the *Treatise on Probability*'s method and that of his economic writings
- Keynes's coherence on method

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1. **Economic Theory as a method: a new way of reasoning**
2. Correct economic theory: avoiding logical fallacies in reasoning. The methodology of criticism of classical theory
3. Making science with a complex world: A Treatise on Probability and Keynes's economics
4. Theory, Complexity and Incommensurability: multidimensional, heterogeneous and interdependent magnitudes
5. Economics as a moral science: happiness as Aristotelian eudemonia. Ethics of means.
6. A new view on rationality: rationality as reasonableness: probability vs. market conventions
7. Uncertainty as tragic dilemma
8. International relations: interdependence, multilateralism and ethics

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### 1. Economic Theory as a method: a new way of reasoning

- Economic theory: form and content are not independent
- A Logic
- A Method

"It seems to me that economics is a **branch of logic, a way of thinking** [rather than] a pseudo-natural science" (CW 14, 296)

"The theory of economics does not furnish a body of **settled conclusions** immediately applicable to policy. It is a **method rather than a doctrine**, which helps its possessor to draw **correct conclusions**" (CW 12, 151).

"The object of our analysis is, not to provide a **machine**, or method of blind manipulation, which will furnish an **infallible answer**, but to provide ourselves with an **organised and orderly method of thinking out particular problems** (CW 7, 297).

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## New way of reasoning: probable reasoning and open-end theory

- **Probable (logical probability à la Keynes TP) non-demonstrative thinking**
  - No "settled conclusions" or "infallible answers": Keynes's anti-positivistic theory of economics is in truth a **method of analysis**. Hence, as we will see, the need of reader's involvement.
- **Open-end theory**. No theoretical limits to "**further analysis**": all closures are provisional and the list of probable repercussions is never complete.

Reference:

- Carabelli and Cedrini 2011, Chapter 18 of the *General Theory* « further analysed » *The Theory of Economics as a Method*, *Cambridge Journal of Economics* (2013, forthcoming; first published online 5 June; DOI: 10.1093/cje/bet017)

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## The *General Theory* as an open system of thought: Chapter 18 as a guide to its reading (1)

### • Chapters 1 to 17

provisional conclusions "by isolating the complicating factors one by one"  
(*cet. par.* condition, assumptions of independence: see Chick 2004)

makes explicit the assumptions tacitly introduced in chs 1-17;  
shows that "independence" is in truth "independence for knowledge"

opens the way for the analysis of "probable interactions" in chs 19-21

### • Chapter 18 →

### • Chapters 19 to 21

"probable interactions of the factors amongst themselves": roundabout repercussions and removal of simplifying assumptions

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## The *General Theory* as an open system of thought: ch19 Roundabout repercussions (2)

Seven "probable repercussions":

- 1. reduction in money-wages may diminish the **propensity to consume** via reduction of prices and consequent redistribution of real income from wage-earners to other factors of the production, and from entrepreneurs to rentiers.
- 2-3. reduction in money-wages may increase the **propensity to consume** via reduction of domestic money-wages relatively to m-ws abroad, worsening terms of trade, and consequent reduction in real incomes.
- 4-5. reduction in money-wages may increase investment if it is expected to be a reduction relatively to money wages in the future (while it will have the opposite effect if money wages are expected to further diminish in the future)
- 6-7. reduction in money-wages may produce a general tone of **optimism** (or pessimism) on entrepreneurs, so that they "may break through a vicious cycle of unduly pessimistic **estimates of the marginal efficiency of capital** and set things moving on a more normal basis of expectation" (264)

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## A *Treatise on Money* as an open system of thought (1)

### Changes due to investment factors, ch18 TM

"The possible varieties of the paths which a credit cycle can follow and its possible complications are so numerous that it is impracticable to outline all of them. One can describe the rules of chess and the nature of the game, work out the leading openings and play through a few characteristic end-games; but one cannot possibly catalogue all the games which can be played. So it is with the credit cycle. We will begin, therefore, by examining the three openings and then proceed to an analysis of the characteristic secondary phase" (253).

### An Exercise in the Pure Theory of the Credit Cycle, ch20 TM

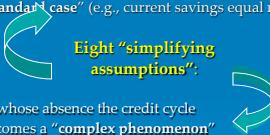
"I propose in this chapter to take a particular type of credit cycle and to work it out in full detail. Owing to the simplifying assumptions which have to be introduced in order to rule out the various complexities which are usually present in actual life, the example taken is somewhat artificial ... The method and ideas of the preceding chapters will, however, be better illustrated in this way than if I were to cover more ground less intensively" (274).

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**A Treatise on Money as an open system of thought ch20 (2)**

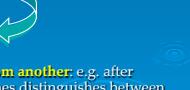
• Let us begin by **simplifying** the problem so as to set out the essential mechanism ... in a manner which is free from non-essential complications. Our **initial assumptions**, which **will be removed later on**, are as follows... " (274-5).

"standard case" (e.g., current savings equal net new investment),



Eight "simplifying assumptions":

in whose absence the credit cycle becomes a "complex phenomenon"



Simplifying assumptions **are not independent one from another**: e.g. after removing the "no-hoarding hypothesis" (ass.#3), Keynes distinguishes between a situation of "correct" and one of "mistaken expectations" (ass.#8).

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**The Treatise on Money as an open system of thought (3)**

• **Epilogue of An Exercise in the Pure Theory of the Credit Cycle:**

"the possible ramifications and extensions of the foregoing argument are so numerous that one could continue for many more pages amplifying, qualifying and generalising it. Perhaps, however, it has been carried far enough to enable a reader, who has **entered the general system of thought** here exemplified, to **apply it for himself** to any further interesting cases which **may occur to him** (292).



**Reader's involvement**

Keynes "wished to stimulate the reader into a **cooperative effort of interpretation of the book**"  
Gotti (1994)

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**Reader's involvement: open-end theory with infinite probable repercussions**

"when an economist writes in a quasi-formal style, he is composing neither a document verbally complete and exact so as to be capable of a strict legal interpretation, nor a logically complete proof. Whilst **it is his duty to make his premises and his use of terms as clear as he can**, he never states all his premises and his definitions are not perfectly clear-cut. It is, I think, of the essential nature of economic exposition that it gives, **not a complete statement**, which, even if it were possible, would be prolix and complicated, to the point of obscurity, **but a sample statement**, so to speak, out of all the things which could be said, **intended to suggest to the reader the whole bundle of associated ideas**, so that, if he catches the bundle, he will not in the least be confused or impeded by the technical incompleteness of the mere words which the author has written down, taken by themselves. This means, on the one hand, that **an economic writer requires from his reader much goodwill and intelligence and a large measure of co-operation**; and, on the other hand, that there are a thousand futile, yet verbally legitimate, objections which an objector can raise" (CW 13, 469-70).

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## 2. Correct economic theory. Avoiding logical fallacies in reasoning

In the introduction to the Series of Cambridge Economic Hand-books, 1922-3, Keynes wrote:

The theory of economics does not furnish a body of settled conclusions immediately applicable to policy. It is a method rather than a doctrine, which helps its possessor to draw **correct** conclusions (CW XII, p. 151)

- Fallacy of independence (*complexity and reductionism*)
- Fallacy of composition (*wholes and parts, partial equilibrium*)
- Fallacy of ignoratio elenchi (*introduction of tacit assumptions*)
- Fallacy of homogeneity (*treating heterogeneous magnitudes as if were homogeneous*)
- False analogies: *statistical inference (econometrics) and conventional expectations. Market idola.*

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## GT Ch19 Keynes's methodology of criticism of the classical theory

"I have called my theory a *general* theory ... I argue that important mistakes have been made through **extending to the system as a whole** conclusions which have been correctly arrived at in respect of **a part of it taken in isolation**" (xxxii).

"Common observation is [not!] enough to show that facts do not conform to the orthodox reasoning" (489): "if orthodox economics is at fault, the error is to be found not in the superstructure, which has been erected with great care for logical consistency, but in a **lack of clearness and of generality in the premisses**" (xxi).

The real problem with classical theory: its **unwillingness** to make **explicit** those **tacit assumptions of independence** introduced into the analysis to support the generality and validity of its arguments.

- - real variables / changes in the value of money
- - system always operating to its full capacity
- - fallacy of composition (individual's demand and community income).

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### Keynes's methodology of criticism: the introduction of tacit assumptions of independence and homogeneity

#### TP

- The TP's criticism of the general application of mathematical probability: the discussion on the limits of valid reasoning and the introduction of the tacit assumptions of independence and homogeneity
- In *A Treatise on Probability*, on Bernoulli's principle: "[these considerations] have only served to make explicit what was always implicit in the principle [of indifference]" (CW VIII 66).

Ref: Carabelli, A. (1991) 'The Methodology of the Critique of the Classical Theory: Keynes on Organic Interdependence', in B. Bateman and J. B. Davis (eds.), *Keynes and Philosophy: Essays on the Origin of Keynes's Thought*, Aldershot: Elgar, pp. 104-25.

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#### GT

- Keynes's methodological criticism of the classical economic theory: the introduction of tacit assumptions of independence and homogeneity
- A General Theory is theory which does not introduce tacit assumptions of independence and homogeneity
- the methodological structure of the GT (chp 18): ignoratio elenchi, i.e. the fallacy of independence (the fallacy of composition).

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**Making science with a complex world: A Treatise on Probability and Keynes's economics**

The *Treatise on Probability* as Keynes's "essay on method"

- Probability as the general case of knowledge
- Logical theory of probability

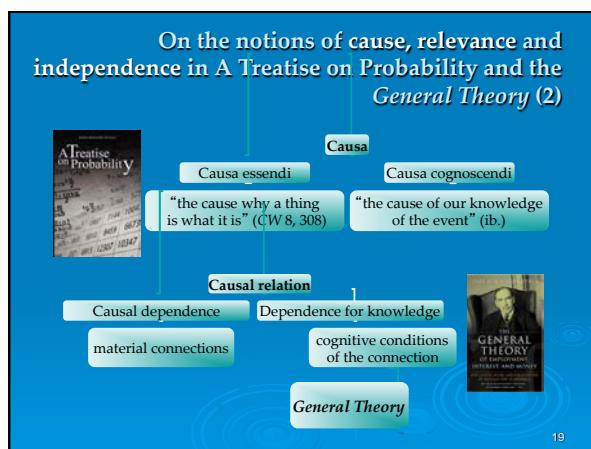
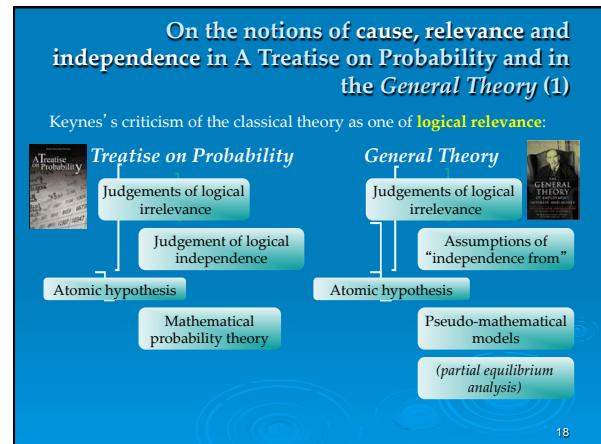
2. The logical foundations of mathematics, analogy and inductive reasoning
 

- The principle of "limited independent variety"
- The role of the "atomic hypothesis"
- The homogeneity hypothesis

His economics: Economics as a branch of probable, non-demonstrative logic

3. The atomic hypothesis which had worked so splendidly in physics breaks down in psychics. We are faced at every turn with the problem of organic unity, of discreteness, of discontinuity – the whole is not equal to the sum of the parts, comparison of quantity fails us, small changes produce large effects, the assumptions of a uniform and homogeneous continuum are not satisfied (CW 10, 262).

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**The "strictly logical" causal analysis of the General Theory (CW 29, 73)**

• The determinants of the system "are, indeed, themselves complex and each is capable of being affected by prospective changes in the others. But they remain independent in the sense that their values cannot be inferred from one another" (ch18, 183)

• "This does not mean that we assume these factors to be constant; but merely that, in this place and context, we are not considering or taking into account the effects and consequences of changes in them" (ch18, 245)

• "we can sometimes regard our ultimate independent variables as consisting of..." (ch18, 246)

• Independent variables "would be capable of being subjected to further analysis, and are not, so to speak, our ultimate atomic independent elements" (ch18, 247)

• The distinction between given factors and independent variables is "quite arbitrary from any absolute standpoint" (ch18, 247)

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## Economics. Making science with a complex world: Vs. **pseudo-mathematical methods and strict independence**

"It is a great fault of symbolic **pseudo-mathematical methods of formalising a system of economic analysis** ... that they expressly assume **strict independence** between the factors involved and lose all their cogency and authority if this hypothesis is disallowed; whereas, in **ordinary discourse**, where we are not blindly manipulating but know all the time what we are doing and what the words mean, we can keep 'at the back of our heads' the necessary reserves and qualifications and the adjustments which we shall have to make later on ... Too large a proportion of recent 'mathematical' economics are merely concoctions, as imprecise as the initial assumptions they rest on, which allow the author to lose sight of the **complexities and interdependencies of the real world** in a maze of pretentious and unhelpful symbols (297-98).

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## Making science with a complex world: Vs. **partial equilibrium analysis and ceteris paribus**



**Cet. par.**: "breaking up a complex question, studying one bit at a time, and at last combining ... partial solutions into a more or less complete solution of the whole riddle" (Marshall 1961, 366).

Keynes **beyond Marshall**, or a method of economic analysis which makes use of the *cet. par.* condition, but not as a means to obtain partial equilibrium:

"The object of our analysis is, not to provide a machine, or method of blind manipulation, which will furnish an infallible answer, but to provide ourselves with an organised and orderly method of thinking out particular problems; and, after we have reached a provisional conclusion by isolating the complicating factors one by one, **we then have to go back on ourselves and allow, as well as we can, for the probable interactions of the factors amongst themselves**. This is the nature of economic thinking" (297).

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## 4. Complexity and incommensurability : multidimensional, heterogeneous and interdependent magnitudes

➢ Complex and incommensurable magnitudes:

- TP's probability 1907-8, 1921
- utility 1909
- goodness 1905
- beauty (1905)
- the general price level (Essay on Index Numbers 1909; Tract 1923; Treatise on Money 1930),
- real capital (GT)
- aggregate income (GT, chp 4).

These magnitudes are characterized by heterogeneity, variety and pluralism of attributes (Keynes: "complex and manifold" magnitudes). There is no common unit of measure: their different attributes move in different directions: "small changes produce big effects"

References:  
 Carabelli A. 1992. "Organic interdependence and Keynes's choice of the units of quantity and of measures in The General Theory" in B. Gerrard-J. Hillard (eds.), *The Philosophy and Economics of J.M.Keynes*, Aldershot, Elgar 1992, pp.3-31.  
 Carabelli A. 1994. "Keynes on mensuration and comparison" in K.Vaughn ed., *Perspectives in the History of Economic Thought*, Aldershot, Edward Elgar, 1994, pp.204-38  
 Carabelli A. 1995. "Uncertainty and Measurement in Keynes: Probability and Organicism", in S. Dow and J. Hillard (eds.), *Keynes, Knowledge and Uncertainty*, Aldershot, Edward Elgar

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## Probability: intrinsic incommensurability

The difficulty of measurement is intrinsic and inherent in these magnitudes and does not depend on our inability to measure them (1909 *Essay on Index Numbers* CW XI: 52, 135)

"It is not the case here [probability] that the method of calculation, prescribed by theory, is beyond our powers or too laborious for actual application. No method of calculation, however impracticable, has been suggested. Nor have we any *prima facie* indications of the existence of a common unit to which the magnitudes of all probabilities are naturally referable . . . probabilities do not all belong to a single set of magnitudes measurable in terms of a common unit" (TP, CW VIII: 32-3).

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## Utility and incommensurability

Keynes's analysis of the measurement and comparison of utility is quite articulated and begins in 1905. It runs through his 1909 "Essay on Index Numbers" down to *A Treatise on Money* and later writings. It covers both the problems of the non-homogeneity of utility, of the non-interpersonal comparison of utility, of the measure of the amount of utility which a given sum of money purchases and of the non-exact measurement of utility due to organic unities.

In his 1909 "Essay on Index Numbers" on the measurement of utility:

- The measure of the amount of utility , which a given sum will purchase, is intrinsically and from the nature of the case beyond our reach. Since the total utility of a commodity is not proportional to its quantity, we have no means of comparison between two different total utilities which are part of differing wholes, and the total utility of a given amount of wealth depends upon its distribution... Even if we know the distribution of wealth, there is **no measure of the aggregate of individual utilities**. The aggregate exists and is perfectly determinate, but we must not infer from this that two such aggregates can be measured in terms of a common unit. . . **There is an aggregate of utilities, we may say, but not a sum** (CW XI: 59-60)

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## Complex economic magnitudes and incommensurability

In economics:

- General price level: "The complex relation of money to the commodities" (CW XI, 66).
- Capital is a collection, an aggregate of the most heterogeneous objects:  
"the difficulties as to the definition of the physical unit of capital, which I believe to be both insoluble and unnecessary" (CW VII: 138).
- Aggregate output:  
"the community's output of goods and services is a **non homogeneous complex which cannot be measured**, strictly speaking, except in certain special cases, as for example, when all the items of one output are included in the same proportions in another output" (GT CW VII 38).

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## Economic material: heterogeneous and organically interdependent parts (1926)

"The atomic hypothesis which had worked so splendidly in physics breaks down in psychics. We are faced at every turn with the problem of **organic unity**, of discreteness, of discontinuity – the whole is **not equal to the sum of the parts**, **comparison of quantity** fails us, small changes produce large effects, the **assumptions of a uniform and homogeneous continuum** are not satisfied" (1926 *Essay on Edgeworth* CW X, 262).

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## Treatise on Money (1930): complex and “manifold” magnitudes (the price level)

In *A Treatise on Money*, Keynes refers explicitly to his discussion in Chapter 3 of *A Treatise on Probability*,

the concepts 'complex or manifold' were to be understood 'in the sense that they are capable of variations of degree in more than one mutually incommensurable direction at the same time' (*TM CW V*, p. 88).

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## GT's chapter 4: the unit of measure (again an implicit reference to *A Treatise on Probability*)

"To say that net output to-day is greater, but the price level lower, than ten years ago or one year ago, is a proposition of a similar character to the statement that Queen Victoria was a better queen but not a happier woman than Queen Elizabeth - a proposition not without meaning and not without interest, but unsuitable as material for differential calculus. Our precision will be a mock precision if we try to use such partly vague and non-quantitative concepts as the basis of a quantitative analysis" (GT, CW VII, 40).

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## Economics as a moral science

"Economics [is] a moral science ... it deals with introspection and with values ... with motives, expectations, psychological uncertainties. One has to be constantly on guard against treating the material as constant and homogeneous" (CW 14, 300).

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## Economics as a moral science: Keynes's ethics

- Keynes's ethics: Greek ethics of virtue against utilitarianism. His early writings on ethics (*Miscellanea Ethica* 1905)
- Distinction between ethics of ends (happiness as Aristotelian Eudaimonia) and ethics of means
- Economics belongs to the ethics of means (practical ethics)
- Economics supplies the material preconditions for happiness

### References:

- Carabelli, Anna and Mario Cedrini 2011 "The Economic Problem of Happiness: Keynes on Happiness and Economics". *Forum for Social Economics*, Vol. 40 (3), 2011, pp. 335-59.
- Carabelli A. 1998 "Keynes on probability, uncertainty and tragic choices", *Cahiers d'Économie Politique*, vol. 30-31, pp. 187-222. (2002) now also in S. Nisticò e D. Rosato (eds) *Competing Economic Theories. Essays in memory of Giovanni Caravale*, Routledge , pp. 249-79

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## Rationality as reasonableness: TP's probability

- "Having some reasons" to believe or to act.
- Reasonableness as contingent rationality (varying according to circumstances).
  - The Aristotelian legacy: human contingent reason (practical reason) against calculus.
  - Common sense against scepticism (Keynes's own interpretation of Hume as sceptic).
- Reasonableness as grounding economic expectations (individual agents).
- Reasonableness as grounding economic policy (the role and reasonableness of public and semi-public institutions and of economic policy).
- Again the relevance of TP's probability as a methodological approach

### References:

- Carabelli A. 1988 *On Keynes's Method*, Macmillan, London
- Carabelli A. 2002 "Speculation and Reasonableness: a non-Bayesian Theory of Rationality", in S. Dow and J. Hillard, eds, *Keynes, Uncertainty and the Global Economy: Beyond Keynes*, Elgar , Aldershot, volume two, 165-185
- Carabelli A. 2003 *Keynes: Economics as a Branch of Probable Logic*, in Jochen Runde and Sohei Mizuhara eds, *The Philosophy of Keynes's Economics*, Routledge, London, pp. 216-26

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## Reasonable expectations and reasonable justification of economic policy

- Reasonableness as grounding economic expectations (individual agents): **liquidity preference and speculator's anticipating market conventions**
- **Independent of success** (fulfilment): successful expectations do not make them more reasonable (against Friedman's instrumentalism or positivism)
- **Practical reason against habits, rules and market conventions** (partial knowledge versus mere experience). Non demonstrative logic and intuition versus behaviourism.
  - Keynes's difference from Marshall's and Hayek's "follow rules, routines and conventions"
- Reasonableness as grounding economic policy (the role and reasonableness of public and semi-public institutions). **Reasonable justification of economic intervention** (against Hayek)

### References:

- Carabelli A. and De Vecchi, N. (1999) "Where to Draw the Line? Hayek and Keynes on Knowledge, Ethics and Economics", *The European Journal of the History of Economic Thought* 6:2, 271-96.
- Carabelli A. and N. De Vecchi ) (2001), Hayek and Keynes: from a Common Critique of Economic Method to a Different Theory of Expectations, *Review of Political Economy* 13:3, 269-85
- Carabelli A. and N. De Vecchi ) 2002 "Rethinking the Role of Reasonableness in the Theory of Rationality", in S. Dow and J. Hillard, eds, *Keynes, Uncertainty and the Global Economy: Beyond Keynes*, Elgar , Aldershot, volume two, 165-185
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## 7. Uncertainty as tragic rational dilemmas

- Uncertainty:
- no reasons (ignorance), not even some partial reasons (no probability, no reasonableness);
  - very low weight of arguments (no belief in belief, no confidence in reasonable belief)
  - reasons are incommensurable (heterogeneous, non comparable, no common unit of measure); tragic choices (moral and rational dilemmas) arise
- Conflict among heterogeneous compelling reasons, among heterogeneous compelling values.
- No reductionism to a common or homogeneous unit of measure. No resolution of conflict among heterogeneous reasons or values.

Reference:

- Carabelli A. 1998 "Keynes on probability, uncertainty and tragic choices". *Cahiers d'Economie Politique*, vol. 30-31, pp. 187-222. (2002) now also in S. Nistico' e D. Tosato (eds) *Competing Economic Theories. Essays in memory of Giovanni Caravale*, Routledge , pp. 249-79

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## Tragic dilemmas

- Radical uncertainty in probability is the heritage of Keynes's early interest in Greek tragic moral dilemmas.

### Rational dilemma in logic

- One of the most well-known rational dilemma is the dilemma of **Buridan's ass**. It represents a typical situation of indecision.
- Keynes refers to this dilemma both in his early versions of the *Principles of Probability* (1907) and in his 1938 letter to Townshend :
 

"when there is no reason for preferring any one to any others, when there is nothing, as with Buridan's ass, to determine the mind in any one of the several possible directions"

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## Rational dilemma: indecision. TP's dilemma of the umbrella

- Conflicting arguments lead to indecision, indeterminate action and uncertainty. No general rule of decision to solve the dilemma is possible:
  - "I cannot decide between the conflicting arguments; probably no general decision is possible. Sometimes the one and sometimes the other is true" (Keynes MSS, Beauty 1905)
- In *A Treatise on Probability* the best known example is the so-called dilemma of the umbrella (high barometer and black clouds represent opposite and conflicting reasons): "I am prepared to argue that on some occasions none of these alternatives hold, and that it will be an arbitrary matter to decide for or against the umbrella. If the barometer is high, but the clouds are black, it is not always rational that one should prevail over the other in our minds, or even that we should balance them, - though it will rational to allow caprice to determine us and to waste no time on the debate" (TP, VIII, p.32).

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## 8. International relations and complexity

- Organic interdependence of heterogeneous parts
  - No reductionism to a common or homogeneous unit of measure (incommensurability).
  - No resolution of conflict among heterogeneous reasons or values (irreducible conflict).
- Justice and moral attitude
- International economic policy: multilateralism (global economic interdependence in highly imbalanced international relations)

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## International relations: a methodological continuity

1913 *Indian Currency and Finance*:

"Every part of the system fits into some other part. It is impossible to say everything at once, and an author must need sacrifice from time to time the complexity and interdependence of fact in the interest of the clearness of his exposition. But the complexity and the coherence of the system require the constant attention of anyone who would criticize the parts. This is not a peculiarity of Indian Finance. It is the characteristic of all monetary problems. The difficulty of the subject is due to it" (CW I, 181-2)

1919 *The Economic Consequences of the Peace* and "The Reconstruction of Europe" (in Essays on Persuasion): German reparations and the organic interdependence of the European economy (CW II, 2, 150, 170, 186-7, see also chapter 6 on the interdependence between exports and imports)

1945 memorandum "Overseas Financial Policy in Stage III" international economic interdependence requires a "shared responsibility" plan between creditors and debtors.

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## Keynes's method: continuity and coherence

In the introduction to the Series of Cambridge Economic Hand-books, 1922-3, Keynes wrote:

The theory of economics does not furnish a body of settled conclusions immediately applicable to policy. It is a method rather than a doctrine, which helps its possessor to draw correct conclusions (CW XII, 151)

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