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An Anatomy of the Concept of Time in Maynard Keynes

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One of the most striking changes in economic thinking which comes primarily with John Maynard Keynes, is his explicit focus on time. For example, it appears early in a part of Keynes's writings that prediction is a very difficult matter. Due to the near impossibility of prediction of the future, uncertainty is a central theme relatively early of Keynes's economic thinking. This theme regarding prediction also implies that Keynes makes a clear distinction between short- and long-term expectations. Theory was to be concerned mainly with the present and with short period situations and the explicit attention to the concept of time, and subsequent alternative method of analysis has led to a number of innovations in economic thinking. This paper will address Keynes's handling of the concept of time from three angles: studying his philosophical background, his understanding of society, and his development of economic theory.

Keywords: time, uncertainty, prediction, money, A-series, B-series

Introduction

Must has been said about Keynes and his brilliant thinking. When you consider the magnitude of commentary, one must wonder whether the limit has been reached. Conversely, one can also ask whether all qualitative elements have been examined thoroughly and put to constructive use. In all modesty, it is planned on the following pages to pursue a particular track, which covers Keynes's handling of the concept of time in his studies. Without further elaboration, one can safely state that there is an colossal difference between the great humility of Keynes and his caution of prediction and much of the economic work conducted today, which largely concerns the performance of long-term forecasts—even without the petty note that current macroeconomic models largely failed to predict the recent financial and economic crisis.

As noted above, one of the most striking changes in economic thinking, which was primarily brought about by John Maynard Keynes is his explicit focus on time¹. For example, it appears early in a part of Keynes's (1904) writings that prediction is a very difficult matter. He noted in an essay on Burke in 1904 that the power of prediction is so slight, that it is seldom wise to sacrifice a present evil for a doubtful advantage in

* This article stems from a paper that was presented at the 1st Word Keynes Conference in Izmir in June 2013. Thanks for comments from Anna Carabelli, Heinrich Bortis and Finn Olesen. The final result is, however, solely the author's responsibility.

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¹ This is a well-known point, see e.g. Backhouse and Bateman (2006, p. 26): "In a series of books Shackle argued that the Keynesian revolution concerned time. The essence of time is that it is irreversible and that we can know nothing about the future... The Keynesian revolution was about breaking with equilibrium, which can occur only in logical time, and creating a theory about how economics activity took place in historical time that was relevant to the real world" or Chick (1983, p. 11): "I shall argue that time is the key: that *the General Theory* is a static model of a dynamic process, the process of production. And it is as thoroughly monetary as the economy it attempts to explain".

the future (Carabelli, 1988, p. 129). This later becomes a recurring theme in a number of key writings.

Due to the near impossibility of prediction of the future, uncertainty is a central theme relatively early of Keynes's economic thinking. His later economic writings also conveyed a notion of fundamental uncertainty, sometimes with references to his earlier book on probability. In another realization of this book, Keynes noted that unlike the typical natural science, the material used in economics is, in too many respects, not homogenous through time.

This position regarding prediction also implies that Keynes often operates with a clear distinction between short- and long-term expectations. Theory should thus primarily be concerned with the present and with short period situations, and in his view, economic models should aim to separate the semi-permanent or relatively constant factors from those that are transient.

Keynes emphasized the historical time framework by making a clear distinction among past, present, and future conditions. The intention of this paper is to show how he came to focus on the analytical point of intersection of current short-period equilibrium situations and phenomena in historical time, in particular, on the factors determining the short-period equilibrium level of employment in *The General Theory*.

In summary, the article will accommodate Keynes's handling of the concept of time seen from three angles. The first is based on Keynes's philosophical background. The second is his general conception of society. The third concerns how Keynes treats time in economic analyses. In other words, the claim here is that the only way to study the anatomy of Keynes's concept of time not only depends on philosophy, but also on his conception of complexity of society, and not least his effort to develop a monetary theory of production.

Time-philosophy, Society and Theory

Keynes's early reflection on metaphysics and time is primarily inspired by McTaggart (1908), and his thoughts about ethics and politics stem from Moore (1897)². Keynes's paper on time from 1903 increases his awareness to avoid common sense notions of time and the writing reflects the contemporary deeper philosophical considerations about the existence of time. This refers to the classical dichotomy which was introduced by McTaggart (1908) and is still very central to current philosophy regarding time logic, namely, the A-series and the B-series. This is quite accurately collected by Øhrstrøm (2011), who pointed out that there is the dynamical approach (the A-theory) according to which the essential notions are past, present, and future. In this view, time is seen "from the inside". Secondly, there is the static view of time (the B-theory) according to which time is understood as a set of instants (or durations) ordered by a before-after relation. Here time is seen "from the outside". In the A-series, time belongs to events and there is real change. In the B-series, time is seen as external to the observer and there is no change.

Keynes sought inspiration as a student from classical philosophy, for example from Kant (1998), who perceived time as something consecutive—he assumed that time could be comprehended as something uniform, something that could be set as a sequence, but this approach, like the B-theory, deemphasizes the difficulties concerning the dynamic aspect of time. According to another classical philosopher Hegel (2000), knowledge can only be related to the past history, and the future is without form and therefore cannot be thematized. The

² The author draws on an analysis he has made on Keynes's initial thinking about the concept of time in "Keynes's early recognition and use of the concept of time" in Keynes's *General Theory For Today—Contemporary Perspectives*, Edward Elgar, 2012, edited by Jesper Jespersen and Mogens Ove Madsen (Jespersen & Madsen, 2012).

present unifies the past and the future negatively—time is the contradiction and ceaseless motion of finite beings like it is in the A-theory.

It is quite interesting that Moore (1897) and McTaggart (1908) shared the same view on the unreality of time:

I would say that neither Past, Present, nor Future exists, if by existence we are to mean the ascription of full Reality and not merely existence as Appearance. On the other hand, I think we may say that there is more reality in the present than in past and future, because, though it is greatly inferior to them in extent of content, it has that coordinate element of immediacy which they entirely lack. Again, and lastly, I think we may distinguish in this respect between past and future. The past seems to be more real than the future, because its content is more fully constituent of the present, whereas the future could only claim a superiority over the past, if it could be shown that in its appearance would become more and more at one with reality. (Moore, 1897)

Which means that the present is not real, because it can only be thought of as infinitely small; and past and future cannot be real, not only because they also must be thought of as infinitely divisible, but also because they wholly lack that immediacy, which is a necessary constituent in reality.

In Keynes's (1903) paper from 1903, time is about the awareness of change and change requires that at least one aspect differs with respect to what is happening, i.e. whether the event is future, present, or past—in McTaggart's (1908) theory, it's a characteristic. On the contrary, B-series alone cannot account for change, because "earlier than" or "later than" cannot differ in their characteristics—a changeless state is a timeless state.

In other words, static time interprets the indivisible aspect of being, so to speak, and dynamic time interprets the unreal aspect of becoming. That some difference between past and future is, as Keynes said, indispensable.

In this way, his paper in 1903 on time became a pivotal point for Keynes, where the dynamic concept of time appeared. It is important to note here that there is an already established essential element for the later Keynesian revolution in economics.

According to Davis (1994)³, Keynes never clearly articulated his philosophical conversion, although there were changes in the views that Keynes originally had. Except perhaps his essay from 1938 on his early beliefs, in which he describes how he became inspired by Moore's (1897) *Principia Ethica* and became a forerunner in the escape from the Benthamite Calculus tradition. This underlines his deep interest in human nature and leads to a criticism of Moore (1897):

It seems to me that Moore's chapter on "The Ideal" left out altogether some whole categories of valuable emotion. The attribution of rationality to human nature, instead of enriching it, now seems to me to have impoverished it. It ignored certain powerful and valuable springs of feeling. Some of the spontaneous, irrational outbursts of human nature can have a sort of value from which our schematism was cut off. Even some of the feelings associated with wickedness can have value. And in addition to the values arising out of spontaneous, volcanic, and even wicked impulses, there are many objects of valuable contemplation and communion beyond those we knew of—those concerned with the order and pattern of life amongst communities and emotions which they can inspire. (Keynes, 1938b, pp. 448-489)

Man is the story acting subject—but acting alone or in communities? This is a quite interesting question, because Keynes in this *Early Belief Essay* also saw himself as an advocate of a principle of organic unity

³ Davis (1994, pp. 146-147): Keynes's philosophical development: "Intuition in the Moorean sense was replaced by individual expectations. The focus on probability became secondary to the focus on convention. Rational behavior as a principal concern in the analysis of individual judgment was supplanted by a preoccupation with the effects of interdependence and uncertainty. These paradigmatic changes and developments can be observed at work in *The General Theory*".

through time. His inspiration came from Moore (1897), in that the whole has an intrinsic value different from sum of its parts. It is important to notice that Keynes, in 1920, was inspired by this in his work on probability and he was well aware of the relation between individual parts and wholes:

Yet, there might well be quite different laws for wholes of different degrees of complexity, and laws of connection between complexes which could not be stated in terms of laws connecting individual parts. In this case, natural law would be organic and not, as it is generally supposed, atomic. If every configuration of the universe were subject to a separate and independent law, or if very small differences between bodies—in their shape or size, for instance, led to their obeying quite different laws, prediction would be impossible and the inductive method useless. Yet nature might still be uniform, causation sovereign, and laws timeless and absolute. (Keynes, 1921, p. 277)

If this is combined with Keynes's assessment of how difficult it would be to transform the conclusions from Darwin's *The Origin of Species* into a shape in which they would be seen to rest upon statistical frequency:

Not only in the main argument, but in many of the subsidiary discussions, an elaborate combination of induction and analogy is superimposed upon a narrow and limited knowledge of statistical frequency. And this is equally the case in almost all everyday arguments of any degree of complexity. The class of judgments, which a theory of statistical frequency can comprehend, is too narrow to justify its claim to present a complete theory of probability. (Keynes, 1921, p. 118)

This remains a central and recurring theme of Keynes. In a letter to Harrod (1938) in 1938, he wrote:

I also want to emphasise strongly the point about economics being a moral science. I mentioned before that it deals with motives, expectations, psychological uncertainties. One has to be constantly on guard against treating the material as constant and homogeneous. (Keynes, 1938a, p. 300)

This means that intuition and values always play a part in the art of forming an economic model—rather than induction, not, however, necessarily applicable to the whole world, but by choice of certain features or aspects which are determined to be the purpose of the analysis (Togati, 1998, pp. 34-35). Also, behind this, it is important to determine the relatively constant (psychological) factors in order to make limited generalizations about the behaviour issuing from them⁴.

This is the basis for Keynes's fundamental economic thinking, as well as for his views on the general society to transcend the matter with great humility and realism—like he does in this passage in an article on foreign policy in 1937:

I have said in another context that it is a disadvantage of “the long run” that in the long run we are all dead. But I could have said equally well that it is a great advantage of “the short run” that in the short run we are still alive. Life and history are made up of short runs. (Keynes, 1937a, p. 62)

Again, Keynes emphasised the short term, as the wording of “in the long run we are all dead” originally comes from *A Tract on Monetary Reform* (Keynes, 1923, p. 65), where Keynes also pointed out that this long run is a misleading guide to current affairs. He thought that economists set themselves too easy, too useless, a task if they only tell when the storm is long past that the ocean is flat again. Actually, it is a similar errand that Keynes later ran in *A Treatise on Money* (Keynes, 1930) when he gave a critique of Cassel's application of a theory to current events concerning money and foreign exchange, where an underlying assumption is that the

⁴ Ted Winslow (Runde & Mizuhara, 2003, p. 151) stated that: “For such factors to be rationally taken as stable, we must have grounds in our direct knowledge of their organic embeddedness for reasonably believing that the factors will be preserved into, and hence continue to govern behavior in, the future we wish to forecast. Since such givenness is always strictly limited, rational forecasting of this kind will be restricted to a relatively short period into the future”.

terms of trade do not change. Keynes did not agree and mentioned that there can be big variations in the rate of foreign investments and he added:

Moreover, students of theory of the credit cycle, and indeed, of all those parts of economic theory which deal with short-period phenomena, have sometimes, by overlooking the temporary divergences between price levels which in the long run are likely to move together, assumed away the very facts which is the task of such a theory to investigate. (Keynes, 1930, pp. 66-67)

Like in a lot of other examples, Keynes is obsessed with the study of change—but in addition to his work on philosophy and society view, there is also a latent and parallel need for development of an economic theory with a more explicit handling time compared to the classical theory that Keynes was brought up with. This is made abundantly clear in his contribution to *Festschrift für Arthur Spiethoff* in 1933, where he found that the reason why the problem of crisis is unresolved, or why the theory is so unsatisfactory, is to be found in the lack of what might be termed as a monetary theory of production. The previous theory that Keynes referred to as a real-exchange economy he will replace with a monetary theory of production and this has clear implications:

The theory which I desiderate would deal, in contradistinction to this (a real-exchange economy), with an economy in which money plays a part of its own and affects motives and decisions and is, in short one of the operative factors in the situation, so that the course of events cannot be predicted, either in the long period or in the short, without a knowledge of the behaviour of money between the first state and the last. (Keynes, 1936a, p. 408)

How this end is the subject of the next section, but it is important to emphasize that much of Keynes's fundamental understanding of time and society is actually done early in his academic life. This applies not only to the phenomenon of time—both understood from inside and outside, this also applies to his understanding of how economic science is a moral science and the need to make use of intuition and, as is also required, much creativity, when economic models must be formulated.

The General Theory and After

The basic question, which Keynes wanted to answer with the release of *General Theory*, was to solve the problem of what determines income and employment as a whole. If this is possible, one can acquire the complete theory of a monetary economy (Keynes, 1936b, p. 293).

In relation to the monetary aspect, the important thing is that the concept of time is closely related to the phenomenon of money:

Money in its significant attributes is, above all, a subtle device for linking the present to the future; and we cannot even begin to discuss the effects of changing expectations on current activities except in monetary terms. We cannot get rid of money even by abolishing gold and silver and legal tender instruments. So long as there exists any durable asset, it is capable of possessing monetary attributes and, therefore, of giving rise to the characteristic problems of a monetary economy. (Keynes, 1936b, p. 294)

What is meant by “effects of changing expectations on current activities”? Here the idea is to choose the option, in light of Chapter 18 of Keynes's *General Theory*, of a short move from a number of invariable basic assumptions, through the economic model, towards the determination of the fundamental quaesitum, which is the dependent variables of income and employment measured in wage-units.

Several factors are taken as given. These are the skill and quantity of available labour and equipment, the existing technique, the degree of competition, the tastes and habits of the consumer, the social structure and so on.

Now, the independent variables are the propensity to consume, the schedule of the marginal efficiency of capital, and the rate of interest. Keynes described the ultimate independent variables as consisting of:

(1) The three fundamental psychological factors, namely the psychological propensity to consume, the psychological attitude to liquidity and the psychological expectation of future yield from capital assets; (2) the wage-unit as determined by bargains reached between employers and employed; and (3) the quantity of money as determined by the action of the central bank. (Keynes, 1936b, pp. 246-247)

Keynes is well aware that the division of determinants of given factors and independent variables is arbitrary from any absolute standpoint, but the object is to discover those factors in which the changes are found in practice to exercise a dominant influence on the *quaesitum*. He highlighted in particular the importance of investment:

Finally, if we assume (as a first approximation) that the employment multiplier is equal to the investment multiplier, we can, by applying the multiplier to the increment (or decrement) in the rate of investment brought about by the factors first described, infer the increment of employment. (Keynes, 1936b, p. 248)

What moves Keynes's system in *The General Theory* is interplay between changes in psychological factors and mechanical factors as the multiplier. In the analysis in chapter 8 of the propensity to consume, he gave a more general description of the psychological factors:

The subjective factors, which we shall consider in more detail in the next chapter, include those psychological characteristics of human nature and those social practices and institutions which, though not unalterable, are unlikely to undergo a material change over a short period of time except in abnormal or revolutionary circumstances. (Keynes, 1936b, p. 92)

A central point here is the abnormal situation, where the propensity to consume may be sharply affected by the development of extreme uncertainty concerning the future (Keynes, 1936b, p. 94). The same applies for the explanation of the existence of the liquidity preference that uncertainty to the future course of the rate of interest is the sole intelligible⁵ explanation (Keynes, 1936b, p. 94). And it is also evident of expected future yield of capital assets:

The schedule of the marginal efficiency of capital is of fundamental importance because it is mainly through this factor (much more than through the rate of interest) that the expectation of the future influences the present. The mistake of regarding the marginal efficiency of capital primarily in terms of the current yield of capital equipment, which would be correct only in the static state where there is no changing future to influence the present, has had the result of breaking the theoretical link between to-day and to-morrow. (Keynes, 1936b, p. 145)

Thus, if anybody neglects to consider uncertainty stemming from the influence of future events, this implies a static state analysis into which is imported a large element of unreality. It is possible to consider the collective state of psychological expectation, which, according to Keynes, covers the state of long-term expectations. In addition, it is possible to be guided to a considerable degree by the facts (or expectations) about which a person feels somewhat confident (Keynes, 1936b, p. 148), even if some of the knowledge can be vague and scanty. The state of confidence depends on how high the likelihood is of the best forecast turning out quite wrong, but: "There is, however, not much to be said about the state of confidence a priori. Our conclusions

⁵ While Keynes presented relative yields as a general explanation liquidity preference, he was also crucially aware of the ability of people to behave, both individually and as a whole, in an emotive manner. It is the role of the economist to identify where major psychological shifts of the whole occur and account for these as best they can.

must mainly depend upon the actual observations of markets and business psychology” (Keynes, 1936b, p. 149).

If, however, the state of confidence is given, a change in investment will generate a change in employment. This thought process is carried forward with help from a definite ratio established between income and investment, and between total employment and that employment directly created through investment—the so called multiplier (Keynes, 1936b, p. 113). Keynes sees this further step as an integral part of the theory of employment. It allows the determination of the impact of an investment on employment.

This means that there is an interplay between changes in psychological factors and mechanical factors as the multiplier—it also means that both the A-series and the B-series of time logic are represented in Keynes’ analysis in *The General Theory*. It provides the opportunity to pursue how the patterns of the marginal propensity to consume the marginal efficiency of capital and liquidity preference (specified in the beginning of a production period) will unfold in the form of a mechanical law of motion that determines income and employment.

Life and history are made up of short periods (Keynes, 1937a, p. 62), as Keynes said—that might be the reason why he did not study how the value of the multiplier did not change in historical time and instead concentrated on an instantaneous multiplier (Termini, 1981, p. 18). After the release of *The General Theory*, he continued on this track which deals with the finiteness of economics models:

A practical theory of the future...has certain marked characteristics...based on so flimsy a foundation, it is subject to sudden and violent changes. The practice of calmness and immobility, of certainty and security, suddenly breaks down. New hopes will, without warning, take charge of human conduct. The forces of disillusion may suddenly impose a new conventional basis of valuation. All these pretty, polite techniques, made for a well-panelled Board Room and a nicely regulated market, are liable to collapse. At all times the vague panic fears and equally vague and reasoned hopes are not really lulled, and lie but a little way below the surface. (Keynes, 1937b, pp. 214-215)

He also assumes later an even more radical approach to the concept of uncertainty:

By “uncertain” knowledge... I do not mean merely to distinguish what is known for certain from what is only probable. The game of roulette is not subject, in this sense, to uncertainty; nor is the prospect of a Victory bond being drawn. Or, again, the expectation of life is only slightly uncertain. Even the weather is moderately uncertain. The sense in which I am using the term is that in which the prospect of a European war is uncertain, or the price of copper and the rate of interest... About these matters there is no scientific basis on which to form any calculable probability whatever. We simply do not know. (Keynes, 1937b, pp. 213-214)

This is sometimes referred to as a true or nihilistic uncertainty. In fact, it should perhaps be seen more in the light of an imminent outbreak of new world war—but basically it does not change the model in *The General Theory*, but sharpens attention to the basic psychological factors in the model.

It can be seen that Keynes follows quite consistently his particular mode of analysis, despite several bids for alternative handling of the concept of time from various economists before and after the release of *The General Theory*⁶.

Conclusion

One of the most striking changes in economics thinking, which comes primarily with Keynes is his explicit focus on time. An anatomy of Keynes’s concept of time can be best understood by studying his

⁶ This is particularly the disputing parties with Lindahl, Robertson, Ohlin, Harrod, Tinbergen, and Myrdal.

philosophical background, his understanding of society, and his development of economic theory. This implies that it is possible to view his handling of the concept of time as both related to the A-series and B-series of the time logic. This dichotomy can be found in *The General Theory*, which both used a dynamic concept of time, which related to a number of basic psychological mechanisms, and a static concept of time, related to the well-known multiplier. Despite numerous challenges in his perception of time, Keynes did not change his position, but he was rather sharper in his view—not least when it comes to the concept of uncertainty.

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