

Lucas on Involuntary Unemployment

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Abstract

The aim of this paper is to examine critically Lucas' arguments against Keynes's *General Theory* and in particular against Keynes's concept of involuntary unemployment. It comprises two main parts. In the first, I question Lucas's claim that Keynes betrayed the equilibrium discipline by freeing himself from the postulates of optimising behaviour and market clearing. In the second, I discuss Lucas' three arguments against the involuntary unemployment concept – first, that there is no rationale for drawing a distinction between two sorts of unemployment, second, that every economic outcome features voluntariness and involuntariness jointly and, third, that alternatives to unemployment are always present.

Key words: Keynes, Lucas, involuntary unemployment

JEL classifications: B22, E12, E13

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1. Introduction

Lucas is one of the main protagonists of the scientific revolution that substituted equilibrium dynamic macroeconomics for the standard IS-LM approach. As any scientific revolution, it had both a positive and a negative agenda, the latter consisting of dismissing the earlier reigning paradigm. Lucas played an important role in this respect by putting forward two types of arguments. The first is the famous ‘Lucas critique’, stressing the inability of Keynesian econometric models to serve the purpose of evaluating the consequence of alternative economic policies. In the same vein is Lucas’s claim that the 1970s provided a real-life experiment of the failure of policies aiming at exploiting an alleged trade-off between inflation and employment. The second line of argumentation is his methodological criticism of Keynes’s *General Theory* (1936). While Lucas never wrote a systematic piece on Keynes, he expressed his opinion of him in several interviews. More important, his several methodological papers – to Prescott, Lucas is “the master of methodology” (Snowdon and Vane 1999: 264) – all contain important passages dismissing Keynes’s contribution to economic theory.

The aim of this paper is to assess the validity of Lucas’s criticism, especially his indictment of the involuntary unemployment concept. In part 2, I briefly review Lucas’s general appraisal of Keynesian theory. In part 3, I assess Lucas’s claim that Keynes betrayed the equilibrium discipline by freeing himself from the postulates of optimising behaviour and market clearing. Finally, in part 4, I critically examine Lucas’s abrasive comments on the relevance of the notion of involuntary unemployment.

2. Lucas’s general appraisal of Keynes’s contribution to economic theory

In recent years, Lucas has been abundantly interviewed. Each time he was asked about his opinion on Keynes the same negative assessment came out. To Klammer (1984) he easily admitted that *General Theory* was a book he disliked (1984: 50).

I *don’t* like that book. It’s not a very congenial book to read. ...I find it carelessly written, not especially gracefully written, sometimes dishonestly written. I don’t like the bullying tone. I don’t like the sort of British aristocratic stuff (1984: 50-1).

To Snowdon and Vane, he expressed the view that, while Keynes was an important ideological figure, his theoretical contribution was slight.

Of course Keynes is an extremely important figure in the twentieth century history, but I think his major influence was ideological. The Depression followed soon after the Russian revolution, and there was a lot of idealism about socialism as a way of resolving economic problems, especially as the Soviet Union had no depression. ...The message of the *General Theory*, in which he emphasized the seriousness of depressions, is that they can be solved within the context of liberal democracy without having to resort to centralized planning.... The *General Theory* was an unusual book in that sense. Maybe more important than economic theory. But that seems to be a different question from that of the influence of Keynes's theoretical ideas on the way we practice economics, which I think is now very slight (Snowdon and Vane 1999: 148).

The same message is to be found in Usabiaga Ibanez (1999):

I think Keynes's actual influence as a technical economist is pretty close to zero, and it has been close to zero for 50 years. Keynes was not a very good technical economist. He didn't contribute much to the development of the field. Keynes's influence was more political, is more an image of what sort of things an economist should be doing, and what kind of life an economist should live (Usabiaga Ibanez 1999: 180).

There are two aspects to Lucas's opinion. The first one is specific to Keynes and the wrong track that he allegedly took; this will be dealt with in part 3 of the paper. The second applies to the state of economics in general, as it prevailed in Keynes's time. Here Lucas's judgment is underpinned by the blunt divide he draws between pre-scientific economics, as consisting of verbal discussions, and scientific economics, consisting of model-building, thereby stating openly what many economists think yet keep to themselves. To Lucas, Keynes's *General Theory* is definitely on the side of the pre-scientific *modus operandus*. He views it as a rambling verbal exposition, eliciting endless hermeneutic discussions – 'disconnected qualitative talk' as stated in Lucas and Sargent ([1979] 1994: 6).¹ Nonetheless, Lucas recognizes that the shift towards modern,

¹ Lucas's judgment may look harsh. However, hardly milder opinions have sometimes sprung from Keynesian quarters. Look for example at Samuelson's comment about the *General Theory* made for the tenth anniversary of its publication. Except for its conclusion, it hardly differs from Lucas's judgement. "It is a badly written book, poorly organized; any layman who, beguiled by the author's previous reputation, bought the book was cheated of his 5 shillings. It is not well suited for classroom use. It is arrogant, bad-tempered, polemical, and not overly-generous in its acknowledgements. It abounds in mares' nests and confusions: involuntary unemployment, wage units, the equality of savings and investment, the timing of the multiplier, interactions of marginal efficiency upon the rate of interest, forced savings, own rates of interest, and many others. In it the Keynesian system stands out indistinctly, as if the author were hardly

scientific economic theory arose with the first macroeconomic models constructed in the aftermath of the Keynesian revolution, a development that Keynes hardly encouraged yet that was often made in his name ([1977] 1981: 219). The problem that existed at the time of Keynes – and, of course, before – was that economists lacked the technical (i.e. mathematical and econometric) apparatus needed to move discussion to a more productive level (Lucas [1980] 1981: 275).

While Keynes and the other founders of what we now call macroeconomics were obliged to rely on Marshallian ingenuity to tease some useful dynamics out of purely static theory, the modern theorist is much better equipped to state exactly the problem he wants to study and then to study it (Lucas 1987: 2).²

3 Keynes's alleged betrayal of the equilibrium method

3.1 Lucas's indictment

According to Lucas, Keynes intended initially to construct a theory of the business cycle – mass unemployment or involuntary unemployment being then associated with depression – yet redirected his project to the apparently simpler issue of explaining the logical existence of involuntary unemployment at one point in time. This is a move that Lucas regrets.

The onset of the Great Depression did nothing to improve Keynes's equipment for understanding the business cycle, viewed as a recurrent sequence of booms and depressions. Instead, it permitted him to reformulate the problem itself as one of accounting for the level of output and employment at one point in time, as opposed to one of accounting for a particular pattern repeated in the time series. So reformulated, the problem could productively be studied simply by discarding an equation of static equilibrium (the labour supply curve) in contrast to the much more difficult task, undertaken in the *Treatise*, of supplementing this static theory with suitable short-run dynamics ([1980] 1981: 275).³

aware of its existence or cognizant of its properties; and certainly he is at his worst when expounding its relations to its predecessors. Flashes of insight and intuition intersperse tedious algebra. An awkward definition suddenly gives way to an unforgettable cadenza. When it is finally mastered, we find its analysis to be obvious and at the same time new. In short, it is a work of genius" (Samuelson 1964: 318-9).

² See also his Nobel lecture (1996: 669).

³ See also Lucas ([1977] 1981: 215).

My own interpretation is slightly different from Lucas's. I would rather emphasize the divide that existed at the time between value theory, on the one hand, and business cycle and monetary theory, on the other. To Marshallian economists, from Marshall until Keynes, a phenomenon such as unemployment was considered a market failure. Its qualification as involuntary raised no eyebrows. Yet, to all intents and purposes it had no room in value theory, its proper domain being business cycle theory. The latter was deemed, as it were, an annexe of value theory – what could not be generated in value theory would find a place in business cycle theory. The drawback was, of course, that these two fields were only loosely linked. Against this background, the *Treatise of Money* can be viewed as a contribution to business cycle theory, while the *General Theory* may be considered to belong to value theory. Keynes's unwitting aim was then to transfer involuntary unemployment from business cycle to value theory. As value analysis was static, so was his theory. The contrast between Keynes, on the one hand, and Lucas and real business cycle theorists, on the other, is that while Keynes project amounted to wanting to import involuntary unemployment from the field of business cycle to that of value, Lucas and real business cycle theorists aimed at merging the fields of value and business cycles theory while extending the exclusion of unemployment (and hence involuntary unemployment), already present in value theory, to the new wider field.

Turning now to Lucas's main argument, a striking point is that, contrary to Friedman, he engages in no substantive analysis of Keynes's theory. His dismissal follows exclusively from a matter of prerequisites. At stake is the 'discipline' – a metaphor favoured by Lucas – by which economists should abide when constructing theories. Its gist is simple: two postulates ought to be adhered to, (a) that markets clear and (b) that agents act in their own self-interest (Lucas and Sargent, [1979] 1994: 15).⁴ Moreover, to Lucas and Sargent these two are linked by a relationship of implication. Economic rationality, they claim, implies market clearing. These postulate are not viewed as circumstantial, i.e. linked to particular models in view of their specific purpose. On the contrary, they are deemed to constitute a universal requirement. This claim pervades all of Lucas's methodological papers. It has been taken up, not only by new classical economists, to whom it has become a dogma, but also by a wider range of economists – with hardly any justification as if the matter was so obvious that none was needed.

⁴ A referee of this paper made the point that Lucas' dismissal of the involuntary unemployment concept directly follows from his equilibrium conception. While I agree with this viewpoint, I have refrained from the referee's suggestion to frontally address this issue in the present paper, because I have discussed it in two companion papers, De Vroey (2001, 2002).

Lucas's indictment of Keynes follows. His basic flaw is to have failed to abide by this equilibrium discipline. Keynes, he states, gives us an example of "bad social science: an attempt to explain important aspects of human behaviour without reference either to what people like or what they are capable of doing" (1981: 4). The following two excerpts bring the point home:

After freeing himself of the straightjacket (or discipline) imposed by the classical postulates, Keynes described a model in which rules of thumb, such as the consumption function and liquidity preference schedule, took the place of decision functions that a classical economist would insist be derived from the theory of choice. And rather than require that wages and prices be determined by the postulate that markets clear – which for the labour market seemed patently contradicted by the severity of business depressions – Keynes took as an unexamined postulate that money wages are sticky, meaning that they are set at a level or by a process that could be taken as uninfluenced by the macroeconomic forces he proposed to analyse (Lucas and Sargent [1979] 1994: 15).

Keynes chose to begin the *General Theory* with the declaration (for Chapter II is no more than this) that an equilibrium theory was unattainable: that unemployment was not explainable as a consequence of individual choices and that the failure of wages to move as predicted by the classical theory was to be treated as due to forces beyond the power of economic theory to illuminate ([1977] 1981: 219).

Lucas's indictment, it turns out, is not that Keynes offered us a flawed economic explanation of unemployment but rather that the explanation he gave of unemployment was non-economic. Keynes's lapse from the equilibrium discipline, Lucas is ready to admit, was understandable in view of the apparent contradiction between cyclical phenomena and economic equilibrium, yet *ex post* it turns out to have been a dramatic mistake that prompted a long detour in the progress of economic theory.

3.2 A critique of Lucas's indictment

Lucas could be criticized for writing history in a 'whiggish' way. However, this is not the line of criticism I wish to adopt. My aim is rather to go to the heart of the matter by questioning the validity of Lucas's assertion that the presence of optimising behaviour and market clearing are two *sine qua non* requirements for any theoretically correct argumentation. To me, this assertion raises two problems. The first pertains to the

meaning of “acting in one’s own self-interest”, the second to the alleged relationship of implication between the two postulates.

The view that agents act in their own interest is certainly a good starting point. Yet, are agents always able to make their self-interest aim prevail? The possibility of some incapacity in this respect should not be discarded in an *a priori* way. Let me recast the issue in reference to optimising behaviour since acting in ones’ self-interest and optimising behaviour are usually equated. The term behaviour should then be understood in a narrow sense as meaning an observable behaviour. In other words, intentions are not considered as behaviour.

The point I have in mind can be traced back to an observation made by Hayek more than half a century ago:

I have long felt that the concept of equilibrium itself and the methods which we employ in pure analysis have a clear meaning only when confined to the analysis of the action of a single person and that we are really passing into a different sphere and silently introducing a new element of altogether different character when we apply it to the explanation of the interactions of a number of different individuals ([937] 1948: 35).⁵

A similar insight is to be found under Patinkin’s pen when he draws a distinction between individual experiments and market experiments (1965: 11-12; 387-392). It has been aptly summarized by Yeager in the following way:

An individual experiment involves discovering, at least conceptually, the desired behaviour of an individual person, of a small or large group of individuals, or even of all individuals in the community, acting in certain capacities, under certain specified circumstances. Whether these circumstances are compatible with other economic conditions and whether they can in fact prevail (whether they are genuinely or even conceptually attainable, to use the Chicago terminology) is beside the point: it is not the purpose of an individual experiment, by itself, to describe the economic equilibrium that will tend to emerge.... This other type of analysis, which pulls together the results of various individual experiments, examines the conditions under which the plans of various persons would and

⁵ Lachmann makes a further step with respect to Hayek by claiming that only the first of these two equilibrium concepts is an indispensable tool of economic analysis. The notion of interactive equilibrium, he claims, raises a host of problems of relevance, especially when general equilibrium is concerned. Cf. Lachmann (1977: 37).

would not mesh, and describes the processes at work when plans fail to mesh, and describes the equilibrium position, is what Patinkin means by market experiments (1960: 59).

Elaborating on Hayek's and Patinkin's views, I suggest separating the notions of the *optimal plan* and *optimising behaviour*. Optimal plan refers to agents' intentions as formed before the opening of trading, the solution to the choice-theoretical problem they are facing as expressed in their individual supply or demand (or excess demand) schedules.⁶ Optimising behaviour refers to what is observable after trading has started. Thus, optimising behaviour implies that the optimal plan has been realized. The gist of the above quotations is that optimal plan and optimising behaviour need to be logically separated – a difference exists between finding a solution to a choice problem and having it implemented. Whenever optimising behaviour is the sole concept used, the possibility of a wedge between them is discarded by definition. Unfortunately, economists have quickly forgotten Hayek's and Patinkin's observations, which in turn may explain why Lucas's viewpoint has hardly raised any eyebrows.⁷

This distinction can also be cast in reference to the notions of equilibrium and disequilibrium. It then consists in separating the logical existence of individual equilibrium (the solution to an agent's choice problem) from its effective existence (the successful transformation of the optimal plan into optimising behaviour). What is usually understood by equilibrium *tout court* is actually an interactive equilibrium, i.e. a state where optimal plans have been made compatible. Thus, disequilibrium refers to a state of incompatibility across individual plans. The notion of individual disequilibrium can be used to designate the inability of some agents to have their optimal plans transformed into optimising behaviour.

If my claim that a distinction must be drawn between optimal planning and optimising behaviour is accepted, Lucas's view must be recast as stating that the economists'

⁶ In Patinkin's words: "We can consider the individual – with his given indifference map and initial endowment – to be a 'utility-computer' into whom we 'feed' a sequence of market prices and from whom we obtain a corresponding sequence of 'solutions' in the form of specified optimum positions" (1965: 7).

⁷ To see how deep the dodging of Hayek's point goes, just notice that it is already put aside in Robbins's traditional definition of the object of economic science. In Stigler's formulation of it, "Economics is the study of the principles governing the allocation of scarce means among competing ends when the objective of the allocation is to maximize the attainment of the ends" (Stigler, 1946: 12). Whereas this definition fits the optimal planning aspect, it entirely neglects the compatibility dimension. It is as if the latter followed automatically from the former. A more correct formulation would run as follows: "economics is the study of the process whereby economic units' equilibrium plans (aiming in effect at accommodating scarce means among competing ends under the objective of maximizing the attainment of some objective) are made compatible".

discipline rests on two distinct postulates, optimal planning and market clearing. These are not the two faces of the same coin. Their validity must be assessed independently. Nor can it be taken for granted that the former implies the latter.

No objection will be levelled against adopting the former as a postulate. The conjecture of optimal planning means that it is assumed that agents have the ability to solve optimally any decision problem they are facing. This assumption is certainly an exaggeration, yet it is nonetheless acceptable as it is probably better, and certainly more tractable, than alternative assumptions. But can this acceptance be extended to the second feature? First of all, it must be realised that new classicists have not invented market clearing. The latter was a recurrent characteristic of pre-Keynesian economics, from Adam Smith onwards, at least as far as value theory was concerned. It is to be found in the writings of (old) classical political economists, as well as of Marshall and Walras, and their followers. Only Keynes was to make an exception in this respect. Thus, new classicists have just restored market clearing whistling the end of the Keynesian recess.

Still, the earlier economists' justification for its continuing presence would have been different from Lucas's. Take for example Marshall. As hinted at above, he might have claimed that a proper domain, other than value analysis, was available for the market non-clearing phenomenon, namely the business cycle and monetary theory. He might also have stated that there was little harm in postulating market clearing, since the only important equilibrium concept was normal equilibrium. Therefore, whereas discarding the possibility of disequilibrium as a departure from normal equilibrium would have been inadmissible, discarding the possibility of departures from the lower equilibrium concept would just be a matter of benign neglect.

Returning to the main thread of my argument, market clearing is the consequence of some prior assumption related to 'trade technology', i.e. the institutional set-up that is needed to make the realisation of equilibrium possible, to borrow Clower's terminology. Like other Walrasian models, Lucas's models are based on the *tâtonnement* or auctioneer hypothesis. The latter is a theoretical scenario, just a story in fact, explaining how the equilibrium values calculated by the economist when studying the logical existence of a general equilibrium could effectively come into existence in the artificial economy described by the model. As soon as this hypothesis is made, the matter is sealed: market clearing is always verified. But then market clearing is the direct consequence of the auctioneer hypothesis rather than the implication of agents construing their plans of action in an optimising way.

While the postulate of optimal planning can be accepted on the ground that it is a good caricature of real-world behaviour, this is hardly the case for the auctioneer-cum-market-clearing postulate. The latter postulate betrays the deep nature of the theoretical *explanandum* as it amounts to picturing a decentralized system under the traits of a centralized organization of trade. Actually, the only way in which it can be defended is by an argument of expediency – the admission that any alternative scenario about the making of equilibrium is lacking.⁸ The change induced by Lucas is then no trifle. It amounts to transforming expediency into methodological virtue.

The counterpart of Lucas's claim that optimising behaviour is a postulate is his rejection of the disequilibrium notion on the grounds that it lacks micro-foundations ([1977] 1981: 221) or is 'unintelligent behaviour' ([1977] 1981: 225). However, if my above reasoning is accepted, there is no reason to discard individual disequilibrium as a matter of principle. This notion does not run counter to the view that agents are rational and develop optimal plans. Rather it points to their incapacity to transform the individual optimal plan into optimising behaviour. Following Lucas and excluding such cases in an *a priori* way amounts to considering that economic theory consists exclusively of solved price-formation problems – a standpoint that, as stated by Hahn, amounts to assuming away the very basic issue that political economy has been supposed to address from Adam Smith onwards.⁹

The conclusion to be drawn is that, for all its wide acceptance, Lucas and Sargent's characterization of the methodological discipline that must govern the construction of economic theory is wanting because it fails to draw a distinction between optimal planning and optimising behaviour. Once this distinction is made, it turns out that Lucas discipline claim must be recast as stating that methodologically correct economic theory is underpinned by two postulates: first, economic rationality – i.e. agents are able to sort out an optimal plan – and, second, market clearing – i.e. the automatic transformation of optimal plan into optimising behaviour. Beyond doubt, the latter is the most contentious. It is true that a lot of phenomena can be explained by models based on market clearing. The outstanding contribution of Lucas and his co-authors has been their demonstration that a model of the business cycle could be constructed on this premise. However, it is not because market clearing can usefully be assumed for certain purposes that it may be

⁸ Cf. De Vroey (1998a).

⁹ In Hahn's terms, "Imposing the axiom that the economy is at every instant in competitive equilibrium simply removes the actual operation of the invisible hand from the analysis. By postulating that all perceived Pareto-improving moves are instantaneously carried out, all problems of co-ordination between agents are ruled out" (1985: 4).

declared that models aiming at demonstrating market non-clearing are methodologically faulty.

3.3 Recasting Keynes 's project

I shall claim that Keynes's very project is to develop a theory of individual disequilibrium – exactly what Lucas considers forbidden. Before doing so however, it is worth pausing for a short discussion of the Marshallian conception of equilibrium, as it constituted Keynes's point of reference.

Marshallian theory is based on the interaction of two equilibrium concepts, market-day or temporary equilibrium on the one hand, and normal equilibrium on the other, where the latter concept is considered more fundamental than the former.¹⁰ The criterion for market-day equilibrium is market clearing, i.e. the matching of market-day supply and demand, while the criterion for normal equilibrium is that agents have no incentives to change their behaviour. Normal equilibrium thus features the standstill connotation that the equilibrium concept has in elementary physics and in the vernacular. Contrary to what is true in a Walrasian context, in the Marshallian approach the term “equilibrium” should never be used without a modifier – one should always speak of either “market-day equilibrium” or “normal equilibrium”.

In Marshall's corn market model, where he studies market-day equilibrium, market clearing is always realized even when false trading is admitted. Yet what needs to be underlined – because it marks a sharp contrast with the Walrasian perspective – is that market clearing and disequilibrium can go hand in hand, since disequilibrium refers to a lack of attainment of normal equilibrium rather than to the matching of market supply and demand. In such disequilibrium states, the higher equilibrium values fail to be realized (i.e. normal and market-day values fail to coincide). In other words, Marshallian disequilibrium implies no individual disequilibrium. The possibility of a failure of the optimal plan to be transformed into optimising behaviour is not tackled.

The standard Marshallian approach should be viewed as consisting of two possible occurrences, the ‘equilibrium triad’ and the ‘disequilibrium triad’. The former is the combination of optimising behaviour, market clearing, and equilibrium, the latter the combination of optimising behaviour, market clearing, and normal disequilibrium (meant

¹⁰ Cf. De Vroey (2000).

as. a departure from normal equilibrium). This disequilibrium triad is considered a perfectly plausible outcome and as theoretically correct as the equilibrium triad.

Against this background, Keynes's aim in the *General Theory* can be reconstructed as the replacement of the "Marshallian disequilibrium triad" with the "Keynesian triad", i.e. a combination of individual disequilibrium, market non-clearing and normal equilibrium. The involuntarily unemployed would be in a state of individual disequilibrium, and the labour market would close with a mismatch between market-day supply and demand. Such a state of affairs should nonetheless be considered as a normal equilibrium, that is, a standstill situation.

Keynes's definition of involuntary unemployment in chapter 2 of the *General Theory* is that involuntary unemployment exists if some agents are willing to sell their labour services at the ongoing wage – or even at a lower wage – yet are unable to do it. Put differently, involuntary unemployment is typically a case of individual disequilibrium. It pertains to what could be called a 'breach of the reservation wage principle'. Agents are observed as non-trading, despite the fact that the market wage exceeds their reservation wage. According to the first-order condition of their decision problem – i.e. the equalization of the marginal rate of substitution between consumption and leisure with the real wage rate – they should be participating, yet they are not. Nonetheless, trading occurs rather than an adjustment in the wage rate.

Involuntary unemployment ought thus be understood as a case of 'forced leisure' as opposed to 'chosen leisure', which makes the 'involuntary' modifier perfectly relevant. The unemployed, the argument runs, are unable to make their optimal plan come true, which means in turn that they are deprived of the capacity, normally attached to every economic agent, to participate, be it on an infinitesimal scale, in the interactive process through which market outcomes are generated. They are left aside through no fault of their own by the market system and excluded from the opportunity to work.¹¹ This account illustrates the failure of the transformation of the optimal plan into optimising behaviour, evoked above. It has perfect choice-theoretical credentials. No foregoing of the micro-foundation discipline is involved.

This being stated, Keynesian theory is hardly bereft of serious problems. However, they bear on the realization of Keynes's project rather than its legitimacy. I am of the opinion

¹¹ In Coddington's terms: "To say that someone is involuntarily unemployed is to relieve him of the responsibility for his condition; it is to suggest that he is unemployed 'through no fault of his own' " (1983:27).

that neither Keynes nor the subsequent generations of Keynesian economists were able to clinch the involuntary unemployment/individual disequilibrium case (De Vroey 1997, 1998b). The basic reason for this failure has to do with the standard assumptions made about ‘trade technology’, as authors such as Clower and Leijonhufvud partially perceived (1975). In the standard Marshallian model, market clearing is obtained for two reasons: first, the assumption of perfect or quasi-perfect information (De Vroey 2000) and, second, the minimum institutional assumption that all agents are simultaneously present or interconnected during the trading operation. In the standard Walrasian approach, the presence of the auctioneer ensures the realization of equilibrium in every trading round. Both approaches implicitly view the market as a democratic institution. It operates in a non-exclusionary way: any participant, however small he may be, can stop the market from closing, as long as it fails to realize any element of his optimal choice set. How can an outcome that is not chosen arise in such a context? This is simply a forbidden result.

This result is confirmed by recent neo-Keynesian models that claim to have demonstrated Keynes’s involuntary unemployment concept. This is clearly the case for Azariadis’s implicit contract model (1975), which was quickly dismissed on the ground of its being *ad hoc*. The same is true, although less glaringly, for Shapiro’s and Stiglitz’s celebrated shirking model (1984), a version of the broader category of efficiency wage models. When the workers are also the owners of the firm – the only case where Shapiro and Stiglitz are able to demonstrate that policy measures have a Pareto-improving effect – it is clearly in workers’ interest to set up a lottery device, which results in the possibility of their being unemployed. Agents are both workers in and owners of the firm. As workers, they are inclined to shirk. As owners, their interest is to avoid shirking. The lottery device is the institutional solution to these opposite trends. In this context, unemployment becomes a case of bad luck. No individual disequilibrium is present.

To see this, drop the involuntary unemployment category and just retain the three criteria I have used to construct the Marshallian and the Keynesian triads – optimising behaviour versus individual disequilibrium; market clearing versus market non-clearing; normal equilibrium versus normal disequilibrium. It then turns out that what they call involuntary unemployment corresponds to a new triad, the ‘new Keynesian triad’, consisting of optimising behaviour, market non-clearing and normal equilibrium.¹²

¹² Consistently with my interpretation, defenders of the efficiency wage approach admit that, in their theory, involuntary unemployment means being jealous of those who have won in the lottery rather than being a result occurring through no fault of the unemployed.

Table 1. The four triads

<i>The Marshallian equilibrium triad:</i>	optimising behaviour	market clearing	normal equilibrium
<i>The Marshallian disequilibrium triad:</i>	optimising behaviour	market clearing	normal disequilibrium
<i>The Keynesian triad:</i>	individual disequilibrium	market non-clearing	normal equilibrium
<i>The new Keynesian triad:</i>	optimising behaviour	market non-clearing	normal equilibrium

To conclude, I have taken on Lucas because he declares that Keynes betrays the equilibrium discipline. Contrary to him, I believe that attempting to demonstrate individual disequilibrium does not amount to falling outside the scope of the equilibrium method. Had Lucas simply stated that Keynes was unable to achieve his programme, I would have been in agreement with him. It is the claim of the illegitimacy of Keynes's project that is unacceptable to me. The admission that Keynes proved unable to demonstrate involuntary unemployment as an individual disequilibrium phenomenon should not lead to the condemnation of this project, as a matter of basic principles.

4. Lucas's critique of the involuntary unemployment concept

On top of his main indictment, bearing on Keynes's having abandoned the equilibrium discipline, Lucas also criticizes Keynes for having introduced the messy involuntary unemployment concept into macroeconomic thinking.

What is the excuse for letting his [Keynes's] carelessly drawn distinction between voluntary and involuntary unemployment dominate aggregative thinking on labour markets for the forty years following? ([1978] 1981: 242).

Small wonder, he claims, that trying to assess involuntary unemployment or to measure full employment has led to confusion, since "the 'thing' to be measured does not exist" ([1978] 1981: 244). The sooner involuntary unemployment is disposed with, the better.

This misses the point: involuntary unemployment is not a fact or a phenomenon which it is the task of theorists to explain. It is, on the contrary, a theoretical construct which Keynes introduced in the hope it would be helpful in discovering a correct explanation for a genuine phenomenon: large-scale fluctuations in measured, total unemployment. Is it the task of modern theoretical economics to 'explain' the theoretical constructs of our predecessor, whether or not they have proved fruitful? I hope not, for a surer route to sterility could scarcely be imagined.

In summary, it does not appear possible, even in principle, to classify individual unemployed people as either voluntarily or involuntarily unemployed depending on the characteristics of the decision problem they face. One cannot, even conceptually, arrive at a usable definition of full employment ([1978] 1981: 243).

This conclusion results from three separate arguments. First, Lucas claims that Keynes should not have opposed two sorts of unemployment, frictional and involuntary unemployment. Second, he argues that every economic outcome features voluntariness and involuntariness jointly. Third, he argues that unemployment, viewed as an activity amongst others, should be considered voluntary since alternative activities are always present.

To discuss Lucas's last two claims, a distinction must be drawn between labour market rationing and unemployment as an activity (De Vroey 1999). The former refers to a specific market outcome, namely the occurrence of excess supply in a given labour market. In contrast, unemployment is understood as pertaining to a typology of the active population, where people are classified according to the sort of activity they are engaged in. The category of unemployment then applies to those agents whose specific activity is job searching. They have, it is supposed, experienced labour rationing in their preferred labour market and remain in a waiting position with the hope of participating into it at a later trading round, instead of engaging in non-wage activities or taking a job in some less-preferred labour market. Obviously, labour rationing and unemployment are linked, as the former is a necessary condition for the latter. Yet labour rationing is not a sufficient condition for unemployment. Individuals who are rationed in their preferred labour market may well end up otherwise than unemployed. Lucas's last two observations pertain to unemployment viewed as a specific activity rather than to market rationing *per se*.

4.1 Why separate unemployment into two sorts?

The first question Lucas raises concerns Keynes's separating two types of unemployment.

[Keynes made] the prior assumption that measured employment can be decomposed into two distinct components: 'voluntary' (or frictional) and 'involuntary', with full employment then identified as the level prevailing when involuntary employment equals zero (Lucas [1978] 1981: 241)

Accepting the necessity of a distinction between explanations for normal and cyclical unemployment does not, however, compel one to identify the first as voluntary and the second as involuntary, as Keynes goes on to do. This terminology suggests that the key to the distinction lies in some difference in the way two different types of unemployment are *perceived by workers*. Now in the first place, the distinction we are after concerns *sources* of unemployment, not differentiated types.... The recognition that one needs to distinguish among sources of unemployment does not in any way imply that one needs to distinguish among types (Lucas [1978] 1981: 241-2).

Touché. Keynes's underlying flaw – a typical Marshallian defect, for that matter – is his tendency to jump incessantly from the model to the real world. He should have drawn a better divide between these two levels of discourse. This would have made him recognize that, whenever the reflection is confined to standard value-analysis, only two occurrences should be considered, unemployment or forced leisure, on the one hand, and chosen leisure, on the other. The latter should not have been labelled 'voluntary unemployment', an entirely misleading appellation in the case at hand. Likewise, the 'involuntary' modifier in the expression 'involuntary unemployment' becomes unnecessary because it is redundant. In this context, either market clearing exists, in which case unemployment is absent, or there is market non-clearing, in which case unemployment (or forced leisure) is effectively present.¹³

4.2 The mixed presence of voluntariness and involuntariness in any economic outcome

The second argument put forward by Lucas runs as follows:

¹³ Bringing in the concept of full employment in this context adds nothing but trouble. Either it designates market-day equilibrium, in which case it is superfluous, or it designates the maximum quantity of employment, an uninteresting reference that should surely not be viewed as dominating the market-clearing level of employment.

The worker who loses a good job in prosperous time does not *volunteer* to be in this situation: he has suffered a capital loss. Similarly, the firm which loses an experienced employee in depressed times suffers an undesirable capital loss. Nevertheless the unemployed worker at any time can always find *some* job at once, and a firm can always fill a vacancy instantaneously. That neither typically does so *by choice* is not difficult to understand given the quality of the jobs and the employees which are easiest to find. Thus there is an involuntary element in *all* unemployment, in the sense that no one chooses bad luck over good; there is also a voluntary element in all unemployment, in the sense that however miserable one's current work options, one can always choose to accept them ([1978] 1981: 242).

At stake is the meaning of voluntariness in general, an issue that is directly related to a much larger philosophical problem bearing on freedom. On this matter, Lucas has illustrious predecessors, the foremost being Aristotle, who devoted several passages of *The Nicomachean Ethics* to the voluntariness-involuntariness divide.¹⁴

Ought individuals, the underlying question runs, be considered responsible for their present condition? Whenever this question receives a straightforward "yes" answer, the rejection of any involuntary outcome ensues automatically. All consequences of actions ought to be seen as voluntary. Think, for example, of a thief caught after a robbery and sent to jail. According to the strong acceptance of voluntariness, he is behind prison bars voluntarily. Before committing the robbery, he knew the odds of being caught. Likewise, a heavy smoker who ends up with lung cancer ought to be qualified as "voluntarily ill". However, as underlined by Aristotle, at least two factors run counter to such an affirmative answer, first, force – "and that is compulsory of which the moving principle is outside, being a principle in which nothing is contributed by the persons who acts" ((1980: 48) – and, second, ignorance (going along with regret) – "of people, then, who

¹⁴ For example, "Those things, then, are thought involuntary, which took place by force or owing to ignorance. ... With regards to the things that are done from fear of greater evils or for some noble object (e.g. if a tyrant were to order one to do something base, having one's parents and children in his power, and if one did the action they were to be saved, but otherwise would be put to death), it may be debated whether such actions are involuntary or involuntary. Something of the sort happens also with regards to the throwing of goods overboard in a storm; for in the abstract no one throws goods away voluntarily, but on condition of its securing the security of himself and his crew any sensible man does so. Such actions, then, are mixed, but are more like voluntary actions; for they are worthy of choice at the time they are done, and the end of an action is relative to the occasion. Both the terms, then, 'voluntary' and 'involuntary', must be used with the reference to the moment of action. Now the man acts voluntarily; for the principle that moves the instrumental parts of the body in such actions is in him, and the things of which the moving principle is in a man himself are in his power to do or not to do. Such actions, therefore, are voluntary, but in the abstract perhaps involuntary; for no one would choose any such act in itself" (Aristotle 1980: 48-49).

act by reason of ignorance he who regrets is thought an involuntary agent” (1980: 50). The "full responsibility" view has a polar opposite, wherein, on the contrary, individuals are seen as socially determined, e.g. because of their class membership. As a result they are depicted as mere ‘products of the social structure’ rather than as free choosers.

Neither of these two extreme views is satisfactory. Nonetheless, the involuntary unemployment category may still make sense in so far as it is accepted that some "responsibility boundary" can be drawn. Placing this limit at a high or a low level would mean that one bends towards or away from the full responsibility viewpoint. By studying the occupational trajectory of individual unemployed people and by knowing the configuration of their choice sets, it should be possible in principle to assess whether or not an individual could be qualified as involuntarily unemployed. To put some flesh on this, think of the following case. A highly-skilled person, yet one who is already aged, has lost his job because the firm where he used to work went bankrupt. Assume, moreover, that the branch in which he was working is declining. Whereas his age is an handicap to getting a lower-skilled job, he lacks the means to become self-employed. Suppose also that the emigration solution is precluded. The question at hand is whether his unemployment qualifies for the involuntary modifier. The answer to this question hinges on where to put the responsibility boundary. When younger, this person could have anticipated the frailty of the firm employing him and quit it immediately, in which case he would have found a job. Placing the responsibility boundary at a high pitch amounts to judging that it was in his reach to make such a judgment and his responsibility to take the consequences. Hence the conclusion would be that he should be considered voluntarily unemployed. On the contrary, placing the boundary lower amounts to considering that expecting people to be able make such judgments and decisions amounts to overtaxing their rationality. Hence he should be classified as involuntarily unemployed. Significantly, in such a framework, nobody could be "100% involuntarily unemployed", because some responsibility is always involved. It should come as no surprise that the proportion of the involuntarily unemployed within the pool of the unemployed would be higher in a context of depression. Therefore, the association made by Keynes between involuntary and mass unemployment is quite plausible.

To conclude on this point, Lucas is right when stating that all unemployment situations comprises a mix of voluntariness and involuntariness. Nevertheless, he should be criticized on another ground, namely for his failure to see it that his statement bites as much at his own conception of economic theory as at that of Keynesians. If it is accepted that the assertion "Mr. X is 100% involuntarily unemployed" is too extreme, the opposite assertion, that

“Mr. X’s unemployment is 100% voluntarily”, is just as wanting. Now this, it may be argued, is precisely the viewpoint on which economic theory, as conceived of by Lucas, is based.

4.3 Alternatives always exist

To Lucas, unemployment should be viewed as an activity among others that, like them, should be tackled in choice-theoretical terms. If agents are observed as being unemployed, they must have chosen this activity over other ones.

Workers who lose jobs, for whatever reason, typically pass through a period of unemployment instead of taking temporary work on the ‘spot’ labour market jobs that are readily available in any economy. ... To explain why people allocate time to a particular *activity* – like unemployment – we need to know why they prefer it to *all* other available activities (1987, 54).¹⁵

As I have dealt with this third claim in a separate article (De Vroey 1999), its assessment here will be rather quick. To gauge it, it is necessary to construct a taxonomy of different activities, one of which is being unemployed. Let me use the notion of ‘choice set’ to designate the types of activities that are open to agents, according to their endowments. The category of ‘wage-dependent’ agent can further be conceived of to designate those agents whose activity choice-set comprises only the wage-earning activity. They lack the means to become self-employed or to live on non-wage income. It must also be assumed that several labour markets exist, and that they can be hierarchized by skill. Against this background, it is possible to assess Lucas’s claim that alternatives are always available. At stake is whether agents’ “activity choice-set” comprises a single or several elements.

De Vroey (1999) claims that the following conditions are sufficient for making the involuntary unemployment category relevant and dissociable from the case of voluntary unemployment (where the job-searching activity is chosen). First, market rationing must come into existence in the lowest market in the skill-ladder, i.e. the unskilled labour market. Any market rationing occurring in a higher level cannot lead, at least directly, to involuntary unemployment. If the rationed agent prefers, for quite understandable reasons, to remain in his normal market, rather than accepting his chances in a lower skill market, he must be characterized as voluntarily unemployed, since an alternative

¹⁵ Lucas's stance has, in fact, a long lineage. To wit, it was voiced by von Mises in his 1949 *Human Action* book: "Unemployment in the unhampered market is always voluntary. In the eyes of the unemployed man, unemployment is the minor of two evils between which he has to choose." (1949: 596).

was available. For example, an accountant who finds no job in his field and does not want to become a cab-driver – an example alluded to in Klamer and Lucas’s conversation (1984: 40) – is considered voluntarily unemployed.¹⁶ A second condition is that rationed agents must be wage-dependent. Somebody who is looking for a job while he could be living off his income is voluntarily unemployed, since an activity other than unemployment is available to him. Third, the self-employment activity ought to comprise only decent or socially integrated jobs. Becoming a beggar is not viewed as an acceptable alternative. Finally, ‘real’ job-seekers should be sorted from people pretending to be job-seekers in order to get unemployment benefits without really wanting to enter the official labour market. Whenever unemployed people meet these four conditions, they can be considered as involuntarily unemployed. Thus, alternatives do not always exist. Lucas is wrong in stating that it is impossible, even in principle, to construct the category of involuntary unemployment.¹⁷

5. Concluding remarks

The first subject that I have examined in this paper is the validity of Lucas’s indictment of Keynes for having freed himself from the equilibrium discipline. I have argued that it is flawed because of Lucas’s lack of a distinction between optimal planning and optimising behaviour, to which earlier economists, whom he seems to hold in high esteem, like Hayek and Patinkin, were so sensitive. Moreover, Keynes’s involuntary unemployment project – in fact a project of demonstrating a case of individual disequilibrium — should be cast against the background of Marshallian economics. In this light, there is no reason to claim that it falls outside the equilibrium method. At stake is theoretical legitimacy rather than success, for I readily admit that Keynes’s project, so recast, has hardly been implemented more than half a century after having been launched. To voice a further *caveat*, the methodological legitimacy of Keynes’s involuntary unemployment project hardly implies that it constitutes the most recommendable route to be taken. Actually, the broader aims of Keynesian economics – i.e. demonstrating market failures and supporting demand activation – can be achieved otherwise, without referring to involuntary unemployment.

¹⁶ If, on the other hand, he does offer his service in a lower market and succeeds in getting a job – the accountant who has become a cab-driver – he could be labelled ‘misemployed’.

¹⁷ A subsidiary conclusion is that the stigma often attached to voluntary unemployment now becomes ill-grounded. Actually, any shift from involuntary unemployment to voluntary unemployment is good news, because it indicates that the partition of society between agents with a limited decisional scope and those with a wider one is shifting in favour of the latter.

The second theme that I have tackled is Lucas's critical remarks on the involuntary unemployment concept. They are, I find, salutary. Lucas's merit is to have opened the black box and shown how messy this concept is, while it had long been taken for granted that its content was obvious. I have agreed with his first criticism that Keynes has no reasons for separating forms of unemployment. However, I have judged his other two criticisms – the mixed presence of voluntariness and involuntariness and the ever-presence of alternatives to unemployment – to be interesting yet less decisive than he seems to believe.

Going beyond Lucas's criticisms, it must be realized that on the subject of involuntary unemployment semantics may well have become blurred to the point of no return. It means very different things to different people. I have argued that it should mean individual disequilibrium. Some new Keynesian authors use it to mean individual equilibrium-cum-market non-clearing. To still others, it refers to a state of welfare-dominated underemployment in a multiple equilibria context, where it goes along with individual equilibrium and market clearing. For this reason – rather than because the 'thing' to be explained is nonexistent – it might indeed be wise to dispense with it.

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