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LUDWIG LACHMANN AND THE AUSTRIANS

Abstract. Ludwig Lachmann looked to the Austrian School of economics as an intellectual space of refuge from the sterile formalism that constituted the academic work of the mainstream economics establishment. From an early interest in capital-theory, he moved to broader epistemological, methodological, and institutional concerns – specifically, from the subjectivism of values to the subjectivism of expectations and the implications thereof for human action. Human action in disequilibrium was his central focus. This paper examines the relationship of Lachmann’s views to the Austrians, those who preceded him, those of his time, and those who have come after him. During his lifetime his views sometimes provoked controversy. I examine this from the perspective of 2017 and the concerns of the modern Austrian intellectual community and find that Lachmann’s views are surprisingly much more complementary to those of his contemporary Austrians than has perhaps hitherto been realized.

Keywords: Ludwig Lachmann, Austrian Economists, methodology, expectations, subjectivism

Introduction

Ludwig Lachmann was born and grew up in Germany where he received his early graduate education studying under Werner Sombart and was greatly influenced by the work of Max Weber. Considering this in isolation one might have expected him to have been a disciple of the younger German Historical School. Yet for the whole part of his postgraduate career he was an enthusiastic, passionate, and uncompromising defender of the Austrian school of economics. To be sure, he was a critical defender of that school and pushed his own particular vision of what he believed was the essential message of Austrian economics. That he was successful in doing so is all the more surprising given that from a rather early age he found himself in what must have seemed to him to be an economics department at the end of the world in South Africa, far removed from the centers of economic creativity in Britain and the United States.

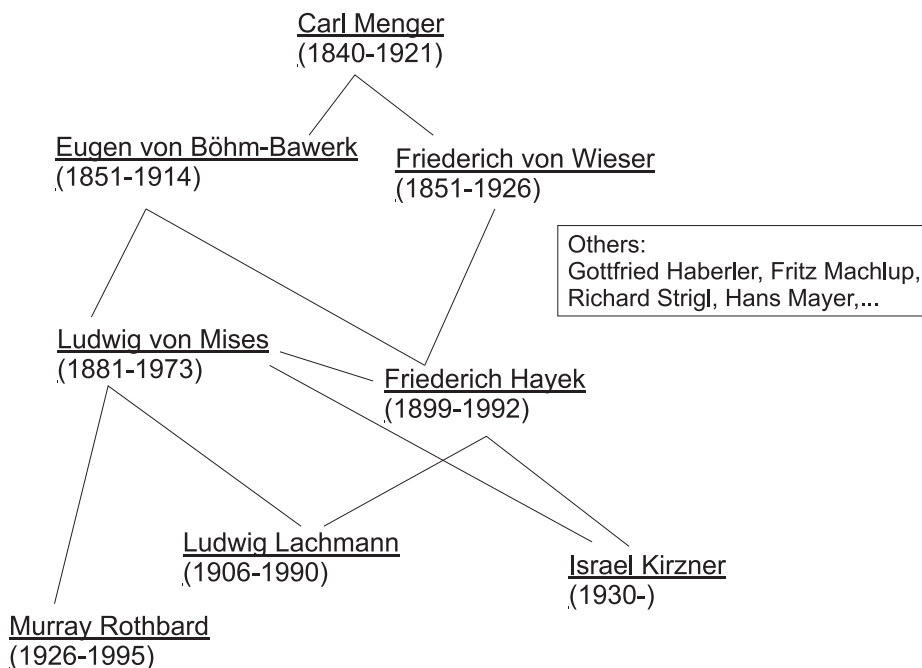


Figure 1: The Austrian School of Economics from inception to the third generation.

He appears to have become interested in Austrian economics during the 1920s while still in Germany. He met Mises very briefly in Berlin in 1932, when Mises was there for a conference. Lachmann knew who he was and made a point of meeting him. In 1933 Lachmann arrived in England and decided to pursue a second graduate degree at the London School of Economics (LSE). This placed him within the vibrant new ‘Hayekian’ school of economics, together with such scholars as Lionel Robbins, John Hicks, Nicolas Kaldor, Abba Lerner, George Shackle and others, and at the very center of the fast developing battle between the Hayekians and the emerging Keynesians. He was already a Hayekian when he arrived (Mittermaier 1992: 9). As Mittermaier points out, being a ‘Hayekian’ at that time referred to an appreciative interest in the Austrian theory of capital and the business (trade) cycle.¹

After World War II, unable to find a satisfactory permanent position in England, he moved to South Africa where he remained for the rest of his life. In the last few decades of his life he spent a semester each year in the United States teaching and conducting seminars and generally interacting

with scholars and interested graduate students at NYU and GMU. It was during this last period that his influence on modern Austrian economics was most apparent. And the importance of this contribution has only grown with time. From today's perspective looking back at the Austrian revival there is no question that Lachmann's particular vision is an integral and indispensable part of that revival. One cannot imagine doing modern Austrian economics without a tacit or explicit adherence to the principles that Lachmann emphasized. While his views often appeared to be very controversial at the time, in retrospect they appear much less so, and his differences with the leading thinkers in Austrian economics of less practical importance than once might have been thought. In this paper I consider the relationship of Lachmann's thought to those of his contemporaries and predecessors in Austrian economics² (see figure 1 above) in successive sections following. The final section concludes.

Menger

Lachmann was the most thoroughgoing subjectivist of all of the Austrians, even moreso than Menger. He saw Menger as having set the standard for Austrians when it came to subjectivism. In his two major works (1871, 1883) Menger grappled with the subjectivism of value and the implications of this for scientific investigation in the social sciences. Despite that, Lachmann considered Menger's subjectivism as incomplete, as not having gone far enough.

The most important identifying aspect of the Austrian School is the rigor with which it embraces the subjectivism of value.³ Lachmann claimed that Menger's subjectivist revolution was incomplete (see Lachmann, 1978) – in two respects. Firstly, Menger seemed to think that human “needs” had a sort of objective essence, so that one could objectively judge the correctness or otherwise of an individual's attempt to satisfy certain needs (Menger, 1871: 121). This part of Menger's work is correctly regarded as inconsistent with his thoroughgoing subjectivism; it is an aberration, and has been mostly disregarded by the members of the Austrian School.

More importantly, Lachmann pointed out that *the subjectivism of value implies the subjectivism of expectations*, and while the revolutionary nature of the former is widely acknowledged, the latter is not. For Lachmann this was a key issue:

Austrian economics reflects a ‘subjectivist’ view of the world. The subjective nature of human preferences is its root. But in a world of change the subjectivism of expectations is perhaps even more important than the subjectivism of preferences. The assumption of ‘static expectations,’ however, means not merely that expectations as autonomous forces causing economic change are ignored so that a mechanism of other forces may be exhibited in its ‘pure form’ but also that *the diversity of expectations*, the pattern of inconsistent expectations held by different individuals at the same time, which we find in the real world, cannot even come into sight. (Lachmann 1977: 28).

Though he does not explore its implications, we can justifiably claim that Menger indeed does realize the connection between subjective value and the subjectivism of expectations (1871: 67–70). There is no fundamental disagreement with Menger on this. It is a matter of emphasis. Menger did not follow up on what Lachmann considered to be an important insight

In his capital theory, Lachmann considered Menger’s approach to be much more satisfactorily subjective than that of Menger’s younger colleague Böhm-Bawerk.

Böhm-Bawerk

Lachmann was both an admirer of and a critic of Böhm-Bawerk’s work on capital. Böhm-Bawerk (1890) picked up on Menger’s insight that time plays a crucial role in production and in economic growth and development. As economic growth and rising incomes allow producers to take more time in the development of better, more efficient, production techniques, production becomes more “roundabout”, more complex. Roundabout methods of production will only be chosen if they are more productive of value (utility). Complex production-goods and techniques (and the same might be said of labor-services) are developed.

Böhm-Bawerk tried to find a measure of the amount of time embodied in any project in the sense of how much time it would take to set up that project from scratch (tracing their components all the way back to the original nature-given substances and labor it would hypothetically take to build them). In pushing this line of reasoning, the more precise he endeavored to become, the more ambiguous and elusive his essential point became. He wanted to measure “embodied time” – the amount of time embodied in any production project. Realizing that some arbitrariness attached to the period over which any productive combination extends, from the original labor (and land) to the final product – having to contemplate points far

back in time – Böhm-Bawerk proposed a more tractable measure of time that he called the average-period-of-production (APP). The APP is the labor-weighted average of the amount of time applied in the project. It is an input-weighted average. It relies on the ability to add-up units of labor – that is, it presumes that labor services are homogeneous and can be used to gauge the intensity of time applied (labor-hours). The use of an input-weighted measure arguably departed significantly from the original vision laid out by Menger, which, purportedly led Menger to regard Böhm-Bawerk's treatment of capital and time as a serious mistake. In this regard, Lachmann is thoroughly Mengerian.

Problematic or not, Böhm-Bawerk's approach was very influential. Its appearance as a decisive move against subjectivism notwithstanding, the vast literature in capital and growth theory related directly or indirectly to Böhm-Bawerk's conception did raise some interesting questions from which Austrians learned a lot, even as they attempted to grapple with what was right and what was wrong with Böhm-Bawerk's approach, most notably in Lachmann's work on capital.

Lachmann (1956) maintained that, outside of equilibrium there was simply no way to aggregate the bewildering array of heterogeneous production-goods. In reality capital was not a stock of anything. It was, rather, a structure of different things fitting together to serve the purposes of their employers. In a now famous quote, Lachmann explains:

The generic concept of capital without which economists cannot do their work has no measurable counterpart among material objects; it reflects the entrepreneurial appraisal of such objects. Beer barrels and blast furnaces, harbor installations and hotel room furniture are capital not by virtue of their physical properties but by virtue of their economic functions. Something is capital because the market, the consensus of entrepreneurial minds, regards it as capable of yielding an income.... [though heterogeneous in nature] the stock of capital used by society does not present a picture of chaos. Its arrangement is not arbitrary. There is some order to it. (Lachmann 1956, xv).

In his discussion of the enhanced productivity of roundabout methods of production, Böhm-Bawerk seemed to imply that capital accumulation, proceeding as production became more roundabout, necessarily embodied new technology. Increasing roundaboutness implied technological change (progress). However, in his formulation of the APP this is not clear. Using that formula it is possible that production becomes “longer” but not technologically better. In fact this is just one aspect of Böhm-Bawerk's work in which quantitative and qualitative changes get mixed up.

For Lachmann the heterogeneity of production-goods implies that *capital accumulation and technological progress go together*. He recasts Böhm-Bawerk's intuition about increasing roundaboutness into the idea of increasing *complexity*. Production-goods are heterogeneous and exist in a structure of production that becomes more complex and heterogeneous with economic progress. Lachmann's theory is a theory of progress reflected in, and achieved by, a continuing specialization of economic activities, a growing division of function. Heterogeneity matters because heterogeneous capital goods perform *qualitatively* different functions in combination with other human and physical resources. New goods, new methods of production, new modes of organization, new resources (production-goods) (Schumpeter 1947: 84–5) – all of these are part of the market process, all this change is part of the “information age.” It is not the fact of changes in technology that is revolutionary; it is the speed with which it is occurring that is new.

The pace of change is not only quicker, it is accelerating. Lachmann's considerations suggest that our ability to absorb and adjust to change has dramatically increased; it must have, or else we would not be able to observe these changes, occurring as they do within a well-ordered social framework, a framework that remains intact in spite of the ubiquity of change.

To understand the phenomenon of accelerating structural change occurring together with our enhanced abilities to adapt to change, we must realize that the scope and pace of technological change itself is governed by our ability to generate and process relevant information. This means that the current pace of technical change is dependent on the results of past technical advances, particularly the ability to generate and process information. This is a complex process involving multilevel interactions over time. If technological change is seen as the result of many trial-and-error selections (of production processes, of product types, of modes of distribution, and so on) then the ability to generate and perceive more possibilities will result in a greater number of successes. It will, of course, also result in a greater number of failures. Lachmann's proposition that capital accumulation, proceeding as it does hand in hand with technological change, that necessarily brings with it capital regrouping (of complementary capital-goods) as a result of failed production plans, appears in this perspective to be particularly pertinent. “[E]conomic progress ... is a process which involves trial and error. In its course new knowledge is acquired gradually, often painfully, and always at some cost to somebody.” (Lachmann, 1956, p. 18). Today, new knowledge acquisition is not so gradual (Lewin 2013).⁴ In this way we see how Lachmann took the themes

of the founding Austrians and extended them in a way that made them relevant and applicable to our comprehension of the wonders of the digital age.

Hayek

All of this grew out of Lachmann's preoccupation with the work of his mentor and older colleague Friedrich Hayek while at the LSE. Lachmann's capital theory is clearly Hayekian in spirit and he acknowledges Hayek's important influence. "My greatest debt of gratitude is to Professor F. A. Hayek whose ideas on capital have helped me to shape my own thought more than any other thinker." (Lachmann 1956: xvi).

Lachmann's approach reflects what he saw to be the inextricable connection between *capital, knowledge, and expectations*, the implications of which he clearly thought needed to be spelled out in order to provide a satisfactory answer to the Keynesian challenge. This is something with which Hayek was preoccupied, namely, the question of how to explain the business cycle, and for which purpose he turned to Mises's monetary theory. The Austrian Theory of Capital (ATC) was an important building block for Hayek's version of the Austrian business cycle theory (ABCT). In his influential work on this (1933, 1935) Hayek had referred to, and made use of, a highly stylized version of the ATC. And much of his work in the 1930's was dedicated to the attempt to elaborate and make this theory more widely accessible, especially to English speakers. In the process, he was led to a thorough reexamination of the ATC, writing a number of important articles (some of which are collected in Hayek 1939) and culminating in *The Pure Theory of Capital* (1941). It was this body of work that was the greatest Hayekian influence on Lachmann, that crucially shaped his own subsequent work on capital theory and also his enduring preoccupation with the topic of *expectations* relating back to his earlier work, before coming to London, on individual decision-making in a dynamic social world.

People's actions grow out of their plans. Working on capital theory Lachmann realized the importance of expectations in shaping individual plans in complex and varied ways. He was troubled by the influence of people's expectations on their actions, and felt that in *Price and Production* (1935a) and *Monetary Theory and the Trade Cycle* (1933) and in his debate with Keynes subsequent to the publication of Keynes's *Treatise* (1930), Hayek had neglected to adequately address expectations in the trade cycle

story offered as a counter-argument to Keynes's. Reading Keynes *General Theory* (1936) upon its publication he was surprised to find Keynes's extensive treatment of the subject.

Lachmann always maintained that the quarrel [the Hayek-Keynes debate] was unnecessary and that no important economic principles were at stake. It concerned empirical questions about how markets work in the modern industrial world (which were fix-price and which were flex-price, in Hicks's terminology) although there were also some political undertones. Keynes had won, he thought, partly because he had introduced expectations most effectively into his theory, at least where it suited his purposes, whereas neither Mises nor Hayek responded in like manner. In 1934 Paul Rosenstein-Rodan had said to Lachmann that the question of expectations was 'the major flaw in Hayek'. Keynes had not made the mistake. As Lachmann wrote once (unpublished): "I bought a copy of the 'General Theory' the week it came out (February 1936). At first I understood very little. But when I came to the definition of 'marginal efficiency of capital', I realized: Keynes too was bothered about expectations. Investment depended on expectations! As I had reached the same conclusion before, that was a great help." (Mittermaier 1992: 10)

Lachmann believed that the Austrians had inappropriately neglected expectations in the context of this debate. Indeed, the implications of subjectivism for expectations, was a theme that motivated his work for the rest of his life. He saw his view of expectations as being more fundamental than Hayek's. As he later wrote: "For in the general equilibrium perspective Hayek adopted in the 1930's it is convergence, and the nature of the economic processes promoting or impeding it, that must be of primary interest. The divergence of expectations appears in this perspective mainly as an obstacle to equilibrium, if not as a reflection of a temporary distorted view of the world" (1979: 314n).

An examination of Hayek's work on capital up to the time that Lachmann left London shows that at least by that time he and Hayek were on the same page as regards the heterogeneity of capital and the diversity of expectations, though, as with Menger and Mises, with different emphasis⁵. While Lachmann continued to differ from Hayek in his conception of the notion of a tendency toward general equilibrium, on the matter of the dynamics of the market process more generally there was little disagreement. And it seems from Hayek's later admiration of Lachmann's book on capital that indeed they appear to have learned from each other (Lewin 2013).

After World War II Hayek and Lachmann went their own separate ways both literally and figuratively. Both worked on broadly institutional questions, Hayek much more extensively. To consider their respective contribu-

tions on this would take us too far afield. It is clear however that in some of the fundamentals Lachmann considered his approach to institutions to be very different from Hayek's. In particular, he disapproved of the application of invisible-hand, evolutionary, principles to the development of institutions. He did not approve of Hayek's resort to group selection to explain the origin, survival, and development of social institutions. Lachmann wanted to leave much greater space for individual human agency in that context.

This is a matter for potentially interesting further investigation. For example, one might wonder how Lachmann explains the origin of institutions. But once again, as a matter of practical Austrian economics their ideas may be seen as more complementary than competitive. Both were interested to discover and articulate the nature of the institutional fabric within which human action takes place in a dynamic world.

Mises

It was also on the matter of the diversity of expectations that Lachmann perceived himself to differ from Mises. His 1943 article on the "*Role of Expectations*" (Lachmann 1943) was taken by Mises to be directed at him, specifically at the ABCT for assuming static expectations. But of course that criticism would apply equally to Hayek's version of the theory. In any case, Mises felt compelled to respond to the criticism in a note in *Economica* (1943). This appears to be the only published interaction between Mises and Lachmann.

Right at the very end of *Role* Lachmann tackles the nature of expectations within the ABCT. He points out, something that was pointed out many times after him, that for a business cycle to occur as a result of the credit expansion which reduces the interest rate, expectations must be elastic. In other words, investors must expect that the new interest rate will endure sufficiently long for them to want to change their investment decisions. By contrast, if investors know the ABCT and believe it, they will expect the interest rate to be unsustainably low and will not alter their investments in the manner suggested by the theory. It is clear from his words that Lachmann is skeptical about the Austrian theory of the business cycle.

In his response Mises says that Lachmann's article "deserves careful attention" and that he fully agrees with him (Mises 1943, 251). He goes on to say:

But I want to point out that I did not fail to state the fact that my explanation of the trade cycle is based on such an assumption [of elastic expectations]. ... The economic consequences of credit expansion are due to the fact that it distorts one of the terms of the speculators and investors' calculation, namely interest rates. He who does not see through this falls victim to an illusion; his plans turn out wrong because they were based on falsified data. Nothing but a perfect familiarity with economic theory and the careful scrutiny of current monetary and credit phenomena can save a man from being deceived and lured into malinvestments. (252)

This statement by Mises is quite remarkable in two ways. Firstly, he acknowledges that for the cycle to occur, investors must be fooled into thinking that the interest rate change is more permanent than it can be. He might have further pointed out that, in line with Lachmann, since expectations will vary across different investors, for a cycle to occur one needs only a sufficient number of investors to believe that the new low interest rate represents for them a viable profit opportunity in the new investment project. There will be capital gains and losses in the short term that will result in resources flowing to those who perceive the gains (Cachanosky 2014). Secondly, and perhaps more importantly, Mises makes clear that the interest rate is *only one of the variables that investors take into account when appraising investment projects*, implying that the other variables may change along with it producing an indeterminate result. This is a significant admission that I've not seen elsewhere in expositions of the ABCT (though see Lewin 2011, 106). What it comes down to is that Mises is saying that it is an empirical matter, something with which Lachmann could hardly disagree. And as an empirical matter, it seems as though the evidence is not unsupportive of the ABCT in its broadest possible conception.

This is the only explicit interaction between Mises and Lachmann in the public record that I know of. But of course Lachmann wrote many articles citing Mises, some of them reviewing Mises's work, in which he continued to emphasize the importance of disparate expectations and the implication that this rendered the course of the market process theoretically indeterminate. It seemed to his readers, and I think to Lachmann himself, that his approach to expectations differed from that of both Mises and Hayek – that Mises's approach was one that perceived a more determinate market process; in short, that Mises did not sufficiently emphasize disparate expectations.

It is hard to know what Mises thought about this, except for that one short article discussed above. But reading Mises's work, including *Human Action*, it seems to me, does not unambiguously support that point of view.

Of course there is the methodological question about whether or not Mises was a strict *apriorist*, something perhaps best left to the experts with strong opinions on the matter (but see Zanotti and Cachanosky 2015). Mises has abundant references to real world events and institutions and he distinguishes between the development of theory and its application, and when it comes to the latter he perceived the world to be dynamic, ever-changing, and (though not using that terminology) filled with people possessing disparate expectations, and thus possessing different appraisals of productive resources. Furthermore, save for his use of the Evenly Rotating Economy as a theoretical device, Mises never assumes any kind of system-equilibrium. He does not discuss the question in neoclassical terms. And reading him through an Austrian lens one must conclude that he's talking about action in disequilibrium. So I would contend that at least implicitly on the matter of expectations, the key distinguishing feature of Lachmann's economic approach, Mises and Lachmann are not very far apart.

At least in one area Mises and Lachmann's ideas can be seen as nicely complementary – that is, in the theory of the business firm. Mises emphasized the role of the businessman in calculating and appraising business ventures in order to make a profit. In other words the businessman acts in accordance with his particular expectations and what they imply for the value of the business. The ideas of both Mises and Lachmann in this regard can be seen to connect importantly with concepts in both accounting and corporate finance (see Braun, Lewin and Cachanosky 2016; and Lewin and Cachanosky 2017, 2018).

Kirzner

Lachmann had a long, close, and productive relationship with Israel Kirzner. It was clearly a relationship of mutual respect and admiration. However, there is no doubt that in one key respect they remained in fundamental disagreement. I refer to the question of whether or not entrepreneurship can be assumed to be equilibrating. This disagreement was never really resolved, and, as we look back on it, some have wondered whether it was worth the time and effort (Boettke, Coyne and Newman 2016). My concern here is really more with the question of how much this disagreement really matters for the influence of Lachmann as a leading Austrian thinker alongside Kirzner.

On the matter of capital theory, Kirzner was very close to Lachmann as is evident by his book on the subject, *An Essay on Capital* (1966) written

soon after the publication of Lachmann's *Capital and its Structure* (1956) to which it referred favorably. Kirzner does not disagree that as a general point different entrepreneurs can have different expectations leading to disparate valuations of capital equipment. But in the way that he conceives of entrepreneurship, he long maintained that the entrepreneurial act must be thought of as equilibrating, that is as making the plans of individuals more compatible, more likely to succeed. This comes from his conception of the entrepreneur as an all-purpose arbitrageur. In the broadest possible sense the entrepreneur is someone who perceives a price discrepancy, an opportunity to buy at a low price in order to sell at a higher price. This very perception is what Kirzner calls entrepreneurship. Acting on the basis of that perception will be profitable. Profits arise from a discrepancy between the prices of goods at the same point in time, or between two points in time with account being taken of interest, or between prices of productive resources and the price of the outputs they produce; in other words, as Mises had put it, in this third case profits arise from the entrepreneurial perception that resources are being undervalued. This entrepreneurial opportunity, to which self-interested entrepreneurs will be ever alert, represents a hole in the market, a flagrant disequilibrium, which by remedying the entrepreneur may profit.

Lachmann (and later many others) pointed out that perceptions of profit as described by Kirzner may turn out to be wrong and that, therefore, acting on these false perceptions will be disequilibrating. It was over this that the issue was joined. Kirzner was reluctant to grant that entrepreneurial activity could be thought of as disequilibrating. By bringing prices into closer conformity it seemed to him, and those who agreed with him, that one simply could not call this disequilibrating. But for Lachmann the fact of disparate expectations meant that all actions could be disequilibrating or equilibrating and that which would prevail was an empirical matter. In some of his responses Kirzner seem to agree while disagreeing. For example, he used the notion that "Paris gets fed" to argue that it should be obvious that entrepreneurial activity results in ordered outcomes. Yet clearly, this is an appeal to empirical reality and not a theoretical proposition.

It seems that this issue will never really be resolved, though very recent pronouncements by Kirzner suggest that he has moved a little closer to Lachmann's position⁶. But does it really matter? Both Lachmann and Kirzner believe that the entrepreneur is very important in economic theory. It is the most prominent element in distinguishing Austrian from neoclassical economics. Neoclassical economics quite simply have no place for the

entrepreneur, no theory of entrepreneurship, and therefore no explanation for what many would think is the most important driving force of current economic development. And Lachmann would agree that more than any other theorist, perhaps with the exception of Joseph Schumpeter, Kirzner has been responsible for a renewed focus on the entrepreneur in economics and most notably also in management scholarship. Both Kirzner and Lachmann agree that the institutional backdrop within which entrepreneurs exist is a crucial element in determining the outcome of entrepreneurial actions. Institutions define the rules of the game, and institutions like private property, the rule of law and private contracting act to make many aspects of our actions more predictable, more reliable. And that is why, as an empirical matter, in spite of the ubiquity of entrepreneurial error, the net result can be seen most often as beneficial, as ordered. That is all we need.

Conclusion

My examination has shown that while always controversial, Ludwig Lachmann made hugely significant contributions to the corpus of modern Austrian economics. Indeed it was the very controversial nature of his approach that has left us with such a valuable legacy. It probably would have pleased him to have his contributions seen as complementary to those Austrian economists who preceded him and were his contemporaries as well as knowing that his influence now spans generations of more recent scholars.

NOTES

¹ Hayek's contributions to philosophy, politics and methodology were yet to come, and importantly, as Mittermaier correctly points out, Lachmann was never a Hayekian in this later and broader sense. (Mittermaier 1992; also Grinder 1977b).

² Like all of the later generation of Austrian economists, Lachmann has very few references to Wieser. So I will not examine Wieser here. No doubt there was some indirect influence in so far as Wieser was an influence on Joseph Schumpeter and his theory of the entrepreneur. Lachmann and Rothbard seldom interacted, though Rothbard did praise Lachmann's book on capital. Thus, although Rothbard was clearly important for many aspects of current Austrian economics, being that he was not connected much with Lachmann, I will not consider him here.

³ "Value is thus nothing inherent in goods, no property of them, nor an independent thing existing by itself. It is a judgment economizing men make about the importance of the goods at their disposal for the maintenance of their lives and well-being. Hence value does not exist outside the consciousness of men." Menger, 1871, p. 121.

⁴ Our ability to adapt to and facilitate change is also greatly enhanced by the encapsulation of knowledge in physical production-goods. Production-goods may be said to “know how” to do certain things. They are embodied knowledge put there by their creators. They are *modules* of knowledge that can be used in multi-specific ways. “Modularity” is a key aspect of our ability to enhance and adapt to change. See Lewin and Baetjer 2011.

⁵ For example “It is evident that the various expectations on which different individuals base their decisions at a particular moment either will or will not be mutually compatible; and if these expectations are not compatible those of some people at least must be disappointed. (Hayek, 1933b, 140; see also Lewin 2013).

⁶ In a recent lecture at the meetings of the Southern Economic Association, and personal communication.

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