

BOOK REVIEW

## ***Technology and Isolation: Clive Lawson on the impact of technology on the economy and society***

Clive Lawson, *Technology and Isolation*, Cambridge, Cambridge University Press, 2017, 228pp. ppk. ISBN: 978 1 316 63235 2

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### **Introduction**

Advances in machine learning, artificial intelligence (AI), robotics, 3-D printing etc. are now a mainstay of the popular press, and organizations such as the World Economic Forum argue that we are at the beginning of a fourth industrial revolution, one that will radically alter society and work. And yet, what technology is and how it relates to society more generally are questions that are still relatively poorly understood, partly because there are so many different (possibly incompatible) things referred to as technology, creating different inferences regarding the role of technology: is it neutral, determining, materially defined, a mere social construct, instrumental, alienating etc. Answers to such questions, in turn, affect how one conceives of technology. In this context, Clive Lawson's book *Technology and Isolation* (Cambridge University Press, 2017) provides a timely and innovative study of the influence of technology on society. Lawson brings a sense of perspective and clarity, based on wide-ranging reading of the many ways that technology has been considered. He does so from a philosophical, point of view. Whilst many contemporary economists might be sceptical of such an approach, it is valuable in so far as it asks important fundamental questions that tend to be omitted because of the way economists are now socialised to think and research. *Technology and Isolation* rewards careful reading and deserves to become a standard point of reference.

Primarily, Lawson provides an ontological account of technology which he clarifies, and puts to work, by considering a range of currently topical themes within the domain of technology studies. Given his concern to avoid any form of determinism, he carefully elaborates certain tendencies that are likely to be present as technology comes to play an ever-larger role in our lives. For example, a central aspect of previous critiques of the role of technology in society is the way in which technical activity leads to an instrumental attitude centred on means and ends, where this instrumental attitude starts to expand to other spheres of human life, colonising social activity.

Lawson's book can also be understood as one concerned with making connections, especially between different disciplines. Most explicitly, Lawson attempts to connect the philosophy of technology with recent developments in social ontology, especially as set out by the Cambridge Social Ontology Group. But Lawson is concerned also with the connections between various social sciences in their study of technology. Lawson is an economist by training, and it is clear that many of his motivations and concerns are prompted from economic questions. Moreover, Lawson draws upon several economists who addressed the broader connections between technology and society in their work. But Lawson's intention is to provide a broader picture of those connections, one that is relevant for all the social sciences, the philosophy of social sciences, and the philosophy of technology, as well as

even for accounts of social ontology. I shall here try to provide a broad outline of the topics addressed in this fascinating book, starting with the relevance it has for economics in particular, but also situating this relevance in the broader scenario set out in the book.

### **Technology, economics and determinism**

Technology is a topic that has been discussed by economists of various traditions and in various ways. Karl Marx believed it to be central for understanding human societies, noting how “Technology discloses man’s mode of dealing with Nature, the process of production by which, he sustains his life, and thereby also lays bare the mode of formation of his social relations, and of the mental conceptions that flow from them” (Marx, 1999[1867], p. 487). Technology is also central for the institutionalist tradition stemming from Thorstein Veblen. Indeed, the idea of instrumental valuing that many see as central to institutionalist thought, is primarily concerned with the nature of technology and its relationship to other kinds of social phenomena, especially social institutions (Ayres, 1978[1944]; Tool, 1987).

In addition to the Marxian and institutionalist tradition, technology is also often mentioned within mainstream economics, for example when discussing economic growth, where technology is either taken to be exogenously given (Solow, 1956) or endogenously determined (Romer, 1986), but a key determinant in any case. Inequality, a topic much discussed recently, is also often seen as a consequence of technological change, which increases the marginal productivity of skilled workers while maintaining or even reducing the marginal productivity of unskilled workers (Goldin and Katz, 2008).

But despite the common recurrence to the word “technology” and the importance rightly or wrongly attributed to it in shaping various social and economic outcomes, its meaning is rarely discussed within economics, especially outside the traditions associated with Marx and Veblen. As Lawson (2017, p. xi) notes, in mainstream economics “anything that changes the relationship between inputs and outputs of some production process is referred to as technology”. Technology is merely mentioned as something that changes the mathematical form of the production functions employed. Here, the problem is clearly a tendency for mathematical formalism regardless of the underlying content.

Even amongst those less inclined toward mathematical formalism, technology figures less prominently in social analysis than one would expect given the impact of technology on society. A reason for this neglect is the fact that earlier contributions seemed to go too far in their assessment of the influence of technology in society. This is especially the case regarding the current of thought often termed “technological determinism” (Lawson, 2007; 2017). Lawson argues, however, that rejecting these older contributions to the study of technology on the basis of their supposed technological determinism, tends to mean that more recent accounts have felt justified in ignoring crucial issues that these older contributions were addressing. Lawson, instead, attempts to engage with these (supposedly deterministic) accounts. Part of his reasoning seems to be that such accounts do not, when looked at in any detail, actually constitute a thorough-going form of determinism (Lawson (2007, pp. 33-35). But also because, Lawson argues, such accounts are far too interesting and important to ignore. To understand how Lawson accommodates their insights, whilst still avoiding determinism himself, it is necessary to consider the ontological account of technology he develops.

## Lawson's ontology of technology

A central problem for the study of technology, as is often noted, is to clarify what the term technology might actually refer to. In this regard Lawson distinguishes between definition and ontology, where the former is essentially a matter of convention and the latter one of discovery. As regards to the former, Lawson provides a historical account of the development of the term, focusing in particular upon the point at which the term technology becomes significant in academic and public discourse. Lawson argues that this happens in the early 20<sup>th</sup> century, especially in the United States. The crucial point that he makes is that in this period the term shifted its meaning from the etymologically more accurate "study of craft" to refer instead to an object of study itself, namely, the material results of science and other forms of study. Lawson then provides an ontological account of such material results over several chapters where he attempts to accommodate a variety of characteristics usually associated with technology, so understood.

Central to the account developed is a distinction between three moments of the process in which technology comes into existence, these being: the moment of isolation, where mechanisms, aspects, or elements of the world are isolated or separated from the domain in which they are found; the moment of recombination, where these isolated elements are recombined to produce essentially new objects with new characteristics and properties; and the moment of enrolment, where such objects are positioned within the social world.

This tripartite distinction underlies much of the material Lawson covers in *Technology and Isolation*, especially in the second half of his book. For example, it is easy to see how Lawson addresses questions of technology's influence on society without falling foul of the determinism he criticises. Essentially, the first two moments, concerned with isolation and recombination are responsible for the general properties or tendencies that have been associated with technology, whilst the moment of enrolment captures the recent contributions of constructivists and others, who emphasise the way that technology is shaped by human activity. Although Lawson develops and utilises all three of these moments extensively within the book, I shall limit myself to a focus upon the first and third of these moments in this short review.

The first point to make is that it is perhaps the latter moment, of enrolment, that draws most heavily upon the social ontology literature. Enrolment involves the act of embedding or positioning artefacts in our daily lives, investing them with meaning and functions, and associating rights and obligations to their use. As with Lawson's earlier contributions (such as Lawson, 2007) it is clear that he is heavily influenced by Roy Bhaskar's early account of critical realism, and in particular his transformational model of social activity. However, Lawson's (2017) new conception has been developed together with recent elaborations on social ontology associated with the Cambridge Social Ontology Group, and the notion of social positioning in particular – see Stephen Pratten (2015) for various contributions that capture the essence of the project associated with the Cambridge Social Ontology Group. These ideas about social positioning, which remain rather undeveloped in Bhaskar's work, have become a central component of the Cambridge group's contributions, especially in their engagement with a variety of other thinkers, such as as John Searle, with whom they share otherwise very similar social ontologies.

Lawson's (2017) book is much more, however, than an elaboration of the ontological theses advanced within the Cambridge Social Ontology Group. For example, Lawson captures a

range of different aspects of technological activity within what he terms a “transformational model of technical activity”, where technological artefacts act as the material condition and consequence of certain human activities, but also where the values and ideas of human beings become ‘materialised’ in artefacts. In Lawson’s terms, technical activity involves harnessing the capacities of material artefacts in order to extend human capabilities. Similarly, Lawson concludes that the most adequate way to conceptualize technology is as artefacts that extend human capabilities. These ideas of course overlap in that this extension of human capabilities is part of the process by which technology enables human activity in certain directions, while constraining it in others.

### **The significance of isolation**

To return to Lawson’s tripartite distinction, it is clear, given the title of Lawson’s book, that the moment of “isolation” plays a central role. However, the role played by the idea of isolation is not perhaps the most obvious, i.e. Lawson is not primarily concerned with the idea that a society with more technology in it is one where people are more isolated from each other (although this may be the case). Rather, Lawson is concerned with the way that different ideas of isolation recur throughout the technology literature and attempts to give some grounding for this.

It is important to see that this focus on isolation also draws heavily on existing work in ontology, especially on Bhaskar’s account of science and his identification of the conditions of experimental activity as requiring conditions of closure. Of course, for Bhaskar the aim is to distinguish the basis of differences between the different (experimental and non-experimental) sciences. But for Lawson, the moment of isolation is important in distinguishing technological artefacts from other social phenomena. In particular, something like closed systems must exist for technological components and other elements to be so isolated as to be recombineable in the form of new technological artefacts (which can then be enrolled in different ways).

Lawson’s analysis of technology and isolation is also relevant for understanding how different human beings may see their well-being affected in different ways by a tendency towards a more instrumental attitude, which undermines the status quo. In fact, there have been divergent perspectives on the instrumental attitude brought about by technological change, which is seen in positive terms by some authors such as Clarence Ayres (and Veblen if we accept Ayres’ interpretation of Veblen), and in negative terms by authors such as Martin Heidegger, who criticises modernity for bringing an impoverished or trivialised lifeworld, as Lawson (2017, pp. 177-201) notes. Lawson (2017, p. 9) also notes that despite many differences, there are also striking similarities between Heidegger’s critique and that provided by Jürgen Habermas, since both emphasise how instrumental attitudes leads to a concern with relating means and ends that drains the lifeworld of its meaning. This happens because the tendency to isolation is transferred to non-technological activities as well, with personal and emotional involvement being significantly reduced.

While Lawson (2017, pp. 8-9) refers to philosophers like Martin Heidegger and Jürgen Habermas when addressing the colonisation of the lifeworld by this instrumental attitude within modernity, the general idea of colonisation of the lifeworld by an instrumental attitude was a central one in economics in the past, not least for the German Historical School, within the work of authors like Werner Sombart and Max Weber. For Sombart and Weber, capitalism

was characterised by a calculative attitude, where all human life is assessed in terms of means and ends. And even Joseph Schumpeter's (1942) analysis of capitalism draws on the same idea, while stressing how the expansion of this calculative attitude leads to the destruction of human values that sustain capitalism.

The expansion of this calculative attitude can also be clearly seen in economic theorising, leading mainstream economics to become ever more formalised while taking human rationality in a merely instrumental sense. Of all social sciences, economics has perhaps been the one most often associated with a conception of the human agent where the latter has a purely instrumental attitude toward the world. Understanding how technology contributes to such an instrumental attitude, which colonises various spheres of human life, can help explaining this state of affairs. Drawing on Lawson's conceptualisation of the role of technology in society, the tendency for a merely technical analysis within economics (while characterising human agents in terms of a merely instrumental attitude) can then be seen as a symptom of a more general problem in society. Lawson delivers a broader analysis of this social problem, which is enabled by his development of a sophisticated ontological account of technology.

Lawson (2017) does not discuss these links to the state of modern economics, or the role of the German Historical School in emphasising the calculative attitude within capitalism, but develops important connections between the calculative attitude and the use of technology, while also drawing on contributions from Veblen, who received important influence from the German Historical School (especially from Gustav von Schmoller and Werner Sombart). But according to Ayres, Veblen saw such an instrumental attitude in more positive terms, as noted above, since it would lead to the destruction of ceremonial aspects of life that Veblen saw as detrimental to human well-being, within what Ayres saw as a Veblenian dichotomy between instrumental attitudes and the ceremonial aspects of life. What Ayres defends, however, is not an extremely calculative attitude such as the one depicted in modern mainstream economics and its conception of human beings, but rather a practical concern with engaging with the world while going beyond the ceremonial repetition of often repressive human practices.

Lawson (2017, pp. 82-98, 168-176) develops Ayres' ideas on technology in great detail, focusing on Ayres' distinction between tools and icons, where tools are artefacts used for merely instrumental purposes, while icons are associated with various ceremonial aspects. Lawson also draws heavily on Ayres' notion of recombination which is, as noted above, seen by Lawson as the second central moment in the diachronic understanding of technology.

This notion of recombination, together with the moments of isolation and enrolment highlighted above, enable Lawson to address another important influence of technology on society. In addition to a supposed impoverishment of the lifeworld, the speed and rhythm in contemporary societies is often pointed out as a reason for loss of meaning in social interaction. Distinguishing moments of isolation, recombination and enrolment enables Lawson to provide an explanation of social acceleration (a topic addressed also by James Gleick and others) which goes a long way to explaining this process.

Lawson (2017) explains this process noting how, as more components are isolated, the number of possibilities for recombination increases. This leads to the emergence of technological devices through recombination, which is associated with the idea that technological change is accelerating. However, in order for such devices to enter use they must be enrolled which implies harnessing the capacities of technical objects for human use.

As noted, artefacts function in society only when enrolled in particular networks of social relations. But, Lawson argues, this enrolment always takes time, especially if it is to incorporate lessons learned by different communities about what a good life might involve.

But as further isolation and recombination lead to greater technological progress, technological devices arrive at a speed that makes meaningful enrolment difficult or even impossible. Thus, there is the tendency for superficial forms of enrolment to take place, and this tendency leads to a normalization of superficial enrolment, thus explaining why modernity is often perceived as an epoch where human life is experienced as more superficial, as human activities lose much of their meaning. Lawson's (2017) account enables an explanation of this normalization of superficial enrolment, which captures a much debated phenomenon which is, however, seldom explained so clearly.

A great contribution of the book is, indeed, the way in which it provides a clear but balanced explanation of many problems posed by technology to society, without focusing too much on one side of the problem and losing sight of other relevant aspects, as often happens in contributions which tend to emphasise either the negative or positive aspects of technology almost exclusively. Even the reader who disagrees with Lawson's thesis will find abundant resources in the book for developing alternative positions drawing on Lawson's excellent synthesis of competing views on technology.

### **Social ontologies and the philosophy of technology**

The main emphasis, throughout Lawson's book, is upon ontology. He both describes various problems in ontological terms and attempts to give ontological answers. And as noted, it is because of his attention to ontological matters that he avoids errors often found within the technological literature, such as technological determinism. Thus, it may perhaps be useful to conclude this review by saying a little more about the social ontology that informs Lawson's analysis, the different ways in which technology can be conceptualised under such as social ontology, and the relevance of social ontology for understanding contemporary problems.

As noted above, Lawson takes much from the Cambridge Social Ontology Group. For example, the idea of social positioning plays a central role in Lawson's conception of technology, since an essential feature for material objects to become technology is to become positioned. It is not only human beings, but also material artefacts that can be positioned, so that enrolment can take place. More generally, the social ontology that Lawson brings for his analysis of technology is a (critical realist) structured social ontology, where powers, mechanisms and tendencies may be out of phase with actual events, and the social realm is defined as the part of reality which necessarily depends upon human beings.

This structured ontology stands in contrast with other ontological accounts that Lawson discusses in the book, such as Bruno Latour's, according to which it is in practice not possible to distinguish the social and the non-social, and the world is characterised by "flat happenings", where a range of actants cause and are caused, giving the social scientist little else to do other than trace (describe/collect) the nature of their associations." (Lawson, 2017, p. 47). This leads to a conception where there are no social forces or powers (Lawson, p. 48), and in fact the world is reduced to events. Thus Lawson (2017, p. 49) quotes Harman's remark that "Latour is proudly guilty of what Bhaskar and DeLanda call "actualism"", while

arguing against such a conception, noting how “certain systems are so organised as to have powers that did not exist before the organisation came into being” (Lawson, 2017, p. 48).

While this social ontology is certainly behind much of the analysis of the book, its application to the problems posed by technology also raises problems for the ontological conception adopted, leading to its revision regarding certain aspects. As a consequence, the perspective adopted by Lawson (2017) regarding the study of technology departs from other perspectives advanced within the Cambridge Social Ontology Group in important ways, some of which were noted above. Particularly significant in this respect is the fact that for Lawson (2017) the social position of an artefact depends not only on the way in which a given community positions it, but also on the way its material components are organised.

This means that for Lawson (2017) a photocopier, for example, is a photocopier not only because it is so positioned by a given community, but also because its material components are organised in a way that enables any community to infer from it that it was designed to be used as a photocopier. In Tony Lawson’s (2012) perspective, in contrast, it would seem that the identity of an object depends fully on how an artefact is socially positioned. So, if the photocopier is positioned as a table by some community, it is a table, regardless of whether it is possible to infer from its material components what it was designed for.

Other authors within the Cambridge Social Ontology Group, such as Phil Faulkner and Jochen Runde, also possess a different conception of technology and identity, that Lawson (2017) also discusses. For Faulkner and Runde (2013), a technical object is a structured continuant with a function and is positioned in a social structure. The function is an agentive function, a term used by Searle to denote a function that depends upon the material causal powers of an object. This seems to bring us closer to Lawson’s (2017) idea that the intrinsic material properties of an object are central to its identity. But for Faulkner and Runde (2013) this means that non-material technical objects, such as a bitstring, or even human beings, can be understood as technical objects, since they also are structured continuants with a form and function. However, given Lawson’s concern with technology’s special place and role in human societies, he conceives of technology in narrower terms. Thus, people are not technological objects because they do not consist of elements that were isolated and recombined in order to extend human capabilities. And neither even are non-material objects, such as computer code, technology. While “it is certainly possible to imagine code as disembodied”, it is also the case that “code and software are important examples of technology” only when “they are realised in particular material devices and artefacts”, and “to the extent that such things can ever exist as disembodied in any real sense... they are not technology” Lawson (2017, p. 94).

At root here, is a deep ontological problem that goes back to Plato and Aristotle, of whether forms (or universals, to use medieval terminology) exist independently of their material embodiment, as Plato seems to have argued, or only in conjunction with their material embodiment, as in Aristotle’s hylomorphic theory. It is an ontological problem that, when applied to code and software, for example, has very important implications as computer programming becomes ever more relevant for the economy and society, given the scope of human activities that are increasingly performed through computer programs, leading to a continuing expansion of the role of technology into human activity. These are very relevant issues for contemporary discussions on the fourth industrial revolution, and its potential impact in the economy and society.

In the past, the service sector was seen as the last stand for human interaction, as technology replaced human labour in agriculture and industry. While in agriculture and industry a product is delivered to the customer in a finished form, in services the customer co-produces whatever service is being provided, by interacting with the provider of the service. In fact, a service is sometimes defined in terms of whether it is co-produced with the customer (Sampson and Froehle, 2006), rather than in terms of intangibility. But as the internet enables services to be performed through ever more sophisticated computer programs, we reach toward an economy and society where the mode of production tends to be less characterised by human interaction than ever before. So in addition to the ontological question of whether technology must be embodied in tangible materials or not, we must also address the challenges brought by this ever greater role of technology in human societies.

John Maynard Keynes thought that technological change would enable a world where humans would find the problem of production already solved, thus allowing time for much more enriching human interaction than ever before. Marx had warned, however, that as long as the economic system remains a capitalist one, technology will be used to extract more surplus value from labour, while decreasing the well-being of human beings who become elements of a machinery driven by a motor mechanism that controls the rhythm of human life. And a motor mechanism need not be necessarily a steam engine or an internal combustion engine. E-mail systems or social network feeds, in which information arrives at a certain speed while requiring some response by the humans who receive it, are an example of another motor mechanism that shapes the rhythm of human life, at a speed high enough for preventing meaningful enrolment, leading to what is widely perceived as an increasing superficiality in human life. We are yet to learn how to put technology into good use, not only for the sake of human well-being, but also for ecological purposes. As E.F. Schumacher (1972) noted a long time ago, as long as technologies are not compatible with a balanced ecology, the problem of production remains unsolved.

In order to avoid falling into discussions of merely epiphenomenal aspects as it often happens when addressing these issues, we need first to understand the nature of technology and its relation to society. This is why ontologically informed accounts such as Lawson's, which drive us into the nature of social phenomena, are crucial for a deeper understanding of the contemporary world. However, the different social ontologies discussed above also show how ontological analysis cannot be merely a top-down approach, but must also be revised as the analysis of technology raises further challenges for the ontological conception adopted. Thus, Lawson (2017, pp. 34-36) stresses that he is not doing ontology of social science, but rather ontology *for* social science (Latsis *et al*, 2007), one that is relevant for understanding the problems of contemporary societies discussed across the various social sciences. In this regard, Lawson's book constitutes a great advance in our understanding of technology, and it deserves to be read widely.

## References

- Ayres, C. E. (1978 [1944]). *The Theory of Economic Progress*. Kalamazoo MI, New Issues Press.
- Bhaskar, R. (1989). *The Possibility of Naturalism*, Brighton UK, Harvester.
- Faulkner, P. and Runde, J. (2013). "Technological objects, social positions, and the transformational model of social activity." *MIS Quarterly*, 37(3), 803-818.
- Feenberg, A. (2000). *Questioning Technology*, New York, Routledge.

- Latsis, J.S, Lawson, C., and Martins, N.O. (2007). "Introduction: ontology, philosophy and the social sciences." In Lawson, C., Latsis, J., and Martins, N. (eds.) *Contributions to Social Ontology*, London, Routledge, 1-14.
- Lawson, C. (2007). "Technology, technological determinism and the transformational model of social activity." In Lawson, C., Latsis, J.S. and Martins, N.O. (eds.), *Contributions to Social Ontology*, London, Routledge, 32-49.
- Lawson, C. (2017). *Technology and Isolation*. Cambridge, Cambridge University Press.
- Lawson, T. (2012). "Ontology and the study of social reality: emergence, organisation, community, power, social relations, corporations, artefacts and money." *Cambridge Journal of Economics*, vol. 36, no. 2, 345-385.
- Marx, K. (1999). *Capital*. Oxford, Oxford University Press.
- Pratten, S. (ed.), (2015). *Social Ontology and Modern Economics*, London, Routledge.
- Romer, P. M. (1986). "Increasing Returns and Long Run Growth." *Journal of Political Economy*, 94, 1002-1037.
- Sampson, S. and Froehle, C. (2006). "Foundations and Applications of a Proposed Unified Services Theory." *Productions and Operations Management*, 15(2): 329-343.
- Schumacher, E.F. (1973). *Small is Beautiful: A Study of Economics as if People Mattered*, London, Blond and Briggs.
- Schumpeter, J. (1992[1942]). *Capitalism, Socialism and Democracy*, London and New York, Routledge.
- Solow, R. (1956). "A contribution to the theory of economic growth." *Quarterly Journal of Economics*, 70, 65-94.
- Tool, M.L. (1987). "Introduction." [to special issue *Evolutionary Economics I: Foundations of Institutional Thought*], *Journal of Economic Issues*, 21(3), 951-967.
- Veblen, T. (1921). *The Engineers and the Price System*, New York, Macmillan.

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