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Refereed Review Article

Tiziano Raffaelli, Tamotsu Nishizawa and Simon Cook (eds)
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Marshall, Marshallians and Industry Economics
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Introduction[1]

The editors' introduction to *Marshall, Marshallians and Industry Economics*, begins with the following observation:

> In recent years, Alfred Marshall's reflections on industrial organization have attracted renewed attention, first in the booming literature on the industrial district and then as anticipations of the competence theory of the firm. Firms are no longer seen as devices aimed to economize transaction costs but as organisms that grow and thrive, thanks to their core competencies. This attitude has fostered a revival of interest in Marshall's theory of industrial organization which now proves itself to be of long-lasting relevance. (p. xv)

In this setting, the scope of the volume is described in the following manner:

> The book develops the line of research that inspired *The Elgar Companion to Alfred Marshall* and found expression in the part devoted to Marshall in the recent *Marshall and Schumpeter on Evolution* [Shionoya and Nishizawa 2008]. The perspective here is enriched by new considerations on Marshall's thought and by deeper attention to the school of industrial economics that took inspiration from it and to contemporary research related to that tradition. (p. xvii)

To readers familiar with the contents of *The Elgar Companion of Alfred Marshall* (Raffaelli et al. 2006), the editors' observations on the nature and significance of Alfred Marshall's industrial economics would appear to be rather uncontroversial, reflecting the perspective increasingly taken by Marshall scholars over recent years. However, this is clearly not Marshall the equilibrium theorist that dwells (and at times remains hidden) in the standard microeconomics textbooks and which the wider community of economists has become acquainted with. Therefore, *Marshall, Marshallians and Industry Economics* could potentially fulfil two interrelated roles. First, it may augment and enrich the growing body of literature assembled by contemporary Marshall scholars that reflects the perspective clearly delineated in the editors' introduction.[2] Second, it may perhaps play a role in encouraging the more general reader to venture beyond the typical mainstream textbook portrayal of Marshall's contributions, and to consider more closely the enduring relevance of Marshall's approach to the analysis of industrial economics and economic thinking in general, in a manner advocated by the contributors to this volume. The difficulty in achieving the second type of objective should not be underestimated, as is perhaps most clearly reflected in David Collard's review of Arena and Quere's (2003) edited volume, *The Economics of Alfred Marshall*:

> There are (at least) two sorts of Marshallian: the book-4 Marshallian and the book-5 Marshallian. Most of the contributors to this volume are book-4 Marshallians. Their collective point is that Marshall's true legacy was not the period analysis of book 5 but something much more dynamic, Darwinian, and empirically based. There is something in this view, although the present reviewer's position is that much though Marshall would have liked to have left a different legacy, he did not actually succeed in doing so. (Collard 2004: 401)

It is the popular notion that the content of Book V of the *Principles*[3] (together with the attached Mathematical Notes) could somehow be divorced from Marshall's other writings that has led to the textbook depiction of Marshall as a prominent pioneering equilibrium theorist in the marginalist tradition, and to the neglect of Marshall's approach to industry economics and his views on the role of historical analysis and applied work in the formulation of economic analysis. Irrespective of how Marshall's economics is evaluated, it was clearly Marshall's *intention* in the *Principles* (and elsewhere) to preserve a unity between the value theory being constructed within the partial equilibrium framework in Book V, and the essentially evolutionary explanations of industry organisation and economic development being described in Book IV and recurrently throughout the *Principles*. The neglect of Marshall's industrial economics has therefore reflected a fundamental misunderstanding and misrepresentation of Marshall's objectives; part of a process which Paul Samuelson (1967: 111) described in approving terms as 'getting Marshall out of the way'. Therefore, *Marshall, Marshallians and Industrial Economics* not only provides a vehicle through which the content and relevance of Marshall's own writings can be reassessed and reinvigorated; it also enables Marshall's insights and methodological approach to be shown to be of continuing relevance in the project of reconstructing industrial economics.

All but two of the chapters in *Marshall, Marshallians and Industry Economics* are based on contributions to a workshop held at Hitotsubashi University in 2008. The book begins with a general introduction provided by Giacomo Becattini, who over the years has been a particularly enthusiastic and effective promoter of Marshall's approach to the analysis of industry. The remainder of the book is divided into four sections; the first section contains three chapters dealing with some of Marshall's key ideas on industrial economics. The three chapters allocated to Section 2 place Marshall's industrial economics in the broader context of Marshall's perspective on economic and social interactions. The final two sections, containing ten chapters, consider aspects of the development of Marshall's industrial economics by his pupils and those who subsequently endeavoured to follow in the same tradition.

Marshall's Industrial Economics

Marshall (1920: xiv) famously proclaimed that 'the Mecca of the economist lies in economic biology', reflecting an ambition to introduce a mode of thinking that departed in several important respects from the 'mechanical' approach that Marshall had identified as originating from the 'mathematical-physical' sciences. Its concrete application is observed most directly in the portrayal of industry organisation and change found in Book IV of the *Principles*, and in the theme of 'economic movement' that is pervasive throughout the *Principles*. Industrial change is portrayed as a gradual growth of new habits of more or less reflex or automatic action, characterised by cumulative routinisation and specialisation made possible by the division of labour. It was the outcome of the establishment of routines on the one hand, and creativity through innovation on the other. Variety and changing competencies in production emerge as key elements of industrial development. Central to the process of industry organisation and change being described in Marshall's *Principles* was the presence of increasing returns to scale. Marshall explicitly sought to extend Adam Smith's insights into the relationship between the division of labour and economic efficiency in order to consider more closely how the organisation of business is shaped by the interrelationships between specialisation, competition, and the transfer of knowledge. The economies of scale associated with industrial reorganisation and progress, whether they are internal or external to the individual business organisation, were essentially knowledge based and their effects were irreversible in historical time. Competition was a form of organisation that evolved through time, with the endless process of adaptation and re-organisation associated with economic change ensuring that market structure itself was a transitory configuration.[4]

Marshall's industrial economics was informed by detailed observations of contemporary industrial organisation, together with historical investigations into its development. Marshall had been a frequent and observing traveller throughout Britain, Europe and the United States, where his travels were, in part, field trips in which observations were gathered on industrial and social conditions. Marshall's perspective on the nature and role of applied work in industrial economics can be observed in the contents of his *Industry and Trade*, originally promised as part of a 'second volume' to extend the general introduction to the study of economic science provided by the *Principles*, but which did not appear in print until 1919 when Marshall had reached 77 years of age. When read in isolation from the *Principles*, the content of *Industry and Trade* may appear to some readers to be mainly descriptive in nature, devoid of any specific theoretical content. However, when placed in the context of Marshall's evolutionary account of industrial organisation and progress found throughout the *Principle*s, it can be seen that Marshall's applied industrial analysis plays the crucial role of providing the historical and institutional material that informs the analytical core of the *Principles*. Importantly, *Industry and Trade* is *not* simply an exercise in applied work which is a mere appendage to the *Principles*. As John Whitaker (2003: 154) reasoned, evidence as to the extent to which Marshall's ambition to make economics follow more closely the biological pathway was realised probably lies buried in the complexities of *Industry and Trade*.

This provides the setting corresponding to the perspective from which the contributions to *Marshall, Marshallians and Industry Economics* have been written. Becattini's introduction provides an eloquent and succinct portrayal of the general perspective on Marshall's industrial economics that binds together the contributions to this volume. His introduction establishes industrial economics as representing the 'heartbeat' of Marshall's economics, being concerned with the co-evolution of economic and socio-cultural relationships, as opposed to the largely technologically based explanations that have traditionally opposed the interdisciplinary explanation of the various dimensions of industrial development. In chapter 1, Tiziano Raffaelli paves the way forward through his decisive affirmation of the evolutionary focus of Marshall's research program, demonstrating that an appreciation of Marshall's approach to industrial economics requires an awareness of the philosophical perspective that accompanied Marshall as he arrived at the doorsteps of political economy, having journeyed through the mathematical and moral sciences and psychology. Raffaelli presents his outline of Marshall's perspective on industrial organisation and business size largely in the setting of Marshall's often neglected *Industry and Trade*, where Marshall was forced to confront the realities of the emergence of joint stock companies, but at the same time reached an open verdict on the destiny of smaller firms. There is a sense of a struggle for survival between large and smaller firms occurring through time, a struggle reflecting very much the dialectical interrelationship between innovation and automation that had been emphasised in the *Principles*.

Marshall's *Industry and Trade* is also the main source drawn on in Tamotsu Nishizawa's chapter on Marshall's views on Britain's industrial leadership and business organisation. Nishizawa's discussion offers some interesting observations on Marshall's views, together with those of 'some critics', on the advantages of 'automatic cooperation' which Marshall had associated with aspects of British industry, relative to the planned cooperation of the specialised division of labour found in trusts and cartels which were more prevalent in the American and German experience at the time. In the final chapter of the first section, Kenji Fujii considers Marshall's emphasis on the connections between organisation and knowledge, although not in the usually discussed context of the integration of knowledge in the sphere of production. Instead, Fujii looks at the relationship between the integration of knowledge and the fairness of organisation, with the latter related to working conditions and the future development of capabilities. Raffaelli had in the earlier chapter considered Marshall's views on reforming the organisation of British industry, reaching the conclusion that 'Marshall's evolutionary model highlights the existence of a variety of conflicting tendencies, and calls for human intervention to check that those which prevail bring long-term benefits to the social environment' (p. 26). However, Fujii's account indicates that Marshall had a rather cautious approach to government intervention, with Marshall appearing to be more afraid of spoiling incentives through interventions that may be based on precarious judgements than of allowing possible unfair behaviours to continue. This ushers to central stage Marshall's notion of the 'chivalrous employer', where the moral attitudes of the employer play a decisive role, indicating that trust and commitment play a significant role in the functioning of organisations.

Some ‘wider perspectives’ of Marshall’s industrial economics are presented in Section 2 of *Marshall, Marshallians and Industry Economics*, beginning with Simon Cook’s ‘the history of nations’. This account is written largely from the standpoint of Becattini’s portrayal of Marshall’s conception of a political nation as an assortment of economic nations, with the latter being any organised industrial group which transcended ties to a specific territory. The chapter discusses how the general notion of a nation has changed through time, with the originality and relevance of Marshall’s liberal idea of the nation ascertained by relating Marshall’s thinking with that of Adam Smith and contemporary economic historians such as William Cunningham and Gustav Schmoller. In the following chapter, Roger Backhouse focuses on the critical issue of the nature and role of Marshall’s equilibrium analysis, and how this may relate to the broader dimensions of Marshall’s industrial economics being discussed elsewhere in the book. As Backhouse explains, when viewed from the perspective of pure theory in the Walrasian tradition in particular, Marshall’s partial equilibrium method appears to be inconsistent and to lack logical rigour. However, as Marshall had argued, to equate economics with pure theory was a ‘calamitous mistake’. Marshall instead was explicitly formulating an applied economics, which while involving deductive reasoning, had to be kept much closer to the real world. Marshall’s partial equilibrium approach was not simply a subset of a well identified general equilibrium system; instead, Marshall’s time period analysis was an attempt to gain some partial insights into evolutionary change in a heterogeneous world.

The logical and methodological shortcomings that came to be associated with Marshall’s economics in fact originated from the attempts to imprison Marshall’s applied approach within the boundaries of pure theory. In order to perpetuate this vulgar transformation of Marshall’s original agenda, the industrial economics heartbeat that had propelled Marshall’s applied economics had to be abandoned. The final chapter in Section 2, contributed by Marco Dardi, investigates Marshall’s perception of ideal social orders, and argues against the view that Marshall considered that the economist can be separated from the man of ideals. The idealistic side of Marshall’s thought is seen to be embedded within, as opposed to being distinct from, his ‘rational historicism’ approach to economics. The chapter includes an interesting interpretation of the role and nature of Marshall’s economic history, and sheds further light on the question of the role of intervention in the process of industrial development. As Dardi concludes, Marshall’s whole life was devoted to the search for mediation between the self-assertive instincts of industrial pioneers and the limitations of liberty involved in the protection of the weak (p. 125).

‘Post-Marshallian’ Industrial Economics

The rise to prominence of pure theory under the version of Marshallism presided over by A. C. Pigou, meant that the industrial economics promoted by Marshall was largely relegated to the subsidiary domain of applied economics, judged to be empty of analytical substance. However, expanding on some of the themes outlined in an earlier article by Raffaelli (2004), Section 3 of *Marshall, Marshallians and Industry policy* describes how Marshall’s work on industrial econom-

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ics was developed by some of his pupils, in a way which remained faithful to Marshall's vision of the role of industrial economics within economic analysis. It begins with Fiorenza Belussi's and Katia Caldari's general account of the rise and fall of the Lancashire industrial district, and discussion of the contrasting views on its operations by Alfred Marshall, Sydney Chapman and John Maynard Keynes. In the following chapter the work of Walter Layton and D. H. McGregor is described by Carlo Cristiano, with Layton's contributions scrutinised in more detail in the following chapter by Masashi Kondo. More distant connections with Marshall's approach to industrial economics can be gleaned from Leonard Minkes' discussion of the work of the 'economic sociologist', Phillip Sargant Florence. Finally, Hiroyuki Shimodaira analyses the view of industrial society portrayed in Dennis Robertson's *The Control of Industry*, and investigates how Robertson's approach may be linked with aspects of Marshall's writings on industry. Collectively, the chapters contained in Section 3 confirm that the essence of Marshall's approach to industrial organisation survived in the teaching and published work of a small group of his pupils and closest disciples. These writers contributed theoretical and empirical investigations from different and at times opposing perspectives, which as Raffaelli (2004: 214) has previously suggested, is paradigmatic of the open framework of Marshall's industrial analysis which shows 'the manifold trends of evolutionary processes'. The fact that the writings of his disciples were largely neglected reflected not the absence of intrinsic merit in the investigations, but rather the triumph of pure theory after Marshall had been 'got out of the way'.

The chapters in Section 4 of *Marshall, Marshallians and Industry Economics* make for particularly engaging reading, providing an indication of just how vastly different industrial economics may have been, both in terms of its content and role, if Marshall's research agenda had not been largely abandoned by mainstream economics in the first few decades of the twentieth century. The chapter provided by Marco Bellandi is particularly innovative, as it investigates the role of the extra-territorial dimensions of external economies; those which Marshall portrayed as depending chiefly on the aggregate volume of production in the whole civilised world, and therefore extending beyond localised industries that help to explain the advantages of the local district. As Bellandi explains, significantly diverging consequences for industrial organisation and development are implied by the different manifestations of these 'mobile external economies'. Clearly, much more work needs to be done to arrive at a more systematic treatment of these often neglected themes.

Building on Young and Lee's (1993) earlier work, the chapters provided by Fred Lee, Lisa Arena and Richard Arena, present an insightful exposition of the industrial economics movement at Oxford from 1920 to 1979, and what may in qualified terms be labelled the MacGregor-Andrews-Richardson led post-Marshallian approach to industry economics. Marshall's perspective on applied industry economics found a place at Oxford during D. H. MacGregor's reign (1922–45) as Drummond Professor of economics. MacGregor firmly rejected the static method embedded in the 'new' supply and demand based theories of imperfect competition, and sponsored a more applied and historical perspective in his own published work and in the teaching program. On D. H. MacGregor, Lee reaches the conclusion that, while making some significant contributions to Marshallian industrial economics, he in the end effectively abandoned it and 'let it be replaced by the equilibrium firm and marginalism' (p. 241). In this chapter, Lee develops a most interesting discussion of price theory and marginalism at Oxford during MacGregor's tenure, concluding perhaps somewhat controversially that Hall and Hitch's kinked demand curve was a marginalist response and explanation of why businessmen do not use marginalist analysis when determining prices (p. 237). As Lee also concludes, it was only after MacGregor retired and P. W. S. Andrews began articulating his theory of competitive oligopoly 'that marginalism and the equilibrium firm were theoretically contested', but that this was too late as by then marginalism had 'conquered Oxford as completely as the Holy Inquisition conquered Spain' (pp. 241–242).

An assessment of Andrews' contributions also features prominently in Lisa Arena's revealing account of the Marshallian tradition of industrial economics in Oxford over the period 1947–1979, which details the 'birth' of the industrial economics discipline, and how it was later to depart from Marshall's original approach during the latter part of this period, despite the best efforts of Andrews. On Andrews' own contribution, Lisa Arena found that the Andrewsian approach to industrial issues can be seen as 'comprehensive and loyal enough to Marshall's theory to render his methodology and concepts very much comparable', with Andrews refusing to read Marshall's contributions to economics as a static marginalist theory (pp. 255–256). Andrews' applied industrial analysis made him increasingly aware of the compatibility between his own work and that of Marshall's. This awareness was reinforced through his relationship with MacGregor, beginning with his attendance of MacGregor's lectures on Marshall at Oxford. His evaluation of Marshall's contributions encompassed an understanding of the extent to which the ensuing Marshallian analysis had departed from Marshall:

> "Old Marshall" at least supplied an analytical framework within which everyday life seemed to take an intelligible shape … Marshall's analysis has certainly not been pushed aside because it fitted its subject-matter worse than the newer analyses, or because it was less reliable a basis from which to predict the behaviour of actual industrial groupings of business; the world of competing monopolies has no industrial syntax. The case is, rather, that Marshallian theory has, it is thought, been convicted of internal inconsistencies. His analysis of industrial equilibrium was proved to be inconsistent with a theory of the equilibrium of the individual business which evolved from the "Marshallian tradition" and which was believed to be basic to Marshall's own concept of competition. The difficulty has been resolved by dropping industrial analysis and retaining the static equilibrium theory of the individual business. It would have been equally legitimate to have abandoned the latter. (Andrews 1951: 140)

The 'marginalist static equilibrium' representation of the firm had, in Andrews' judgement, encouraged the generation of *a priori* generalisations about the behaviour of business 'without any feeling that it was part of the job of the theorist to get nearer the apparently muddy and confused real world of business management' (Andrews 1964: 92). Like Marshall, Andrews had sought to get closer to this confused real world through the medium of his applied studies of industry, combining these with some general theoretical contentions.

However, over the decades Andrews' legacy began to fade, to the extent that Andrews was deemed not to even merit a single mention amongst the long list of entries alleged to represent the pioneers of industrial economics in the volume on 'pioneers' edited by Henry de Jong and William Shepherd (2007). This was despite the fact that Andrews was the founding editor of the *Journal of Industrial Economics* in 1952. Increasingly, the method of enquiry advocated by Andrews was seen as a competitor to the more mainstream approaches, which were more focused on markets than on firms and industries. In the decades that followed, a clear line of demarcation was established between the applied study of industrial organisation and theories of market behaviour found within mainstream pricing and resource allocation theory, as clearly represented in the *New Palgrave Dictionary of Economics* depiction of modern industrial organisation analysis:

> Based on the activities of those who consider themselves in the field, industrial organisation (or industrial economics) today may be broadly defined as the field of economics concerned with markets that cannot easily be analysed using the standard textbook competitive model. (Schmalensee 2008)

The revival of Interest in Marshall's Industrial Economics

Not surprisingly, the more recent revival of interest in Marshall's industry economics can be observed most directly within the sphere of modern evolutionary economics. In this respect, the contributions of George Richardson during the 1970s represent an important precursor. As Richard Arena's chapter on Marshall and Richardson clearly establishes, while there may be questions regarding the impact of Richardson's works on industrial economics, there can be no doubt about his Marshallian orientation. The key similarities between Marshall and Richardson are demonstrated to flow from a similar conceptualisation of the nature and role of organisation, competition, coordination and capabilities, all of which find their places in an explanation of industry that takes on an evolutionary dimension. Like his mentor, Philip Andrews, Richardson became a strong critic of equilibrium analysis, arguing that a proper understanding and evaluation of the competitive economy requires a study of the actual process of adaptation, rather than by taking the 'illusory short cut' of equilibrium (Richardson 1990: 107). Richardson believed that it was necessary to construct a theory of economic organisation, drawing on Marshall's 'general rule' that 'the development of the organism whether social or physical, involves an increasing subdivision of functions between its separate parts, and on the other hand a more intimate connection between them' (Marshall 1920: 240–241). Richardson stressed the connections between organisation and growth of knowledge, and the role of institutions in facilitating these connections.[5]

The connections between Richardson's interpretation of Marshall's industrial economics and modern evolutionary economics were appropriately observed by the prominent evolutionary theorist, Stanley Metcalfe:

> In Richardson's work we find clear insights into modern debates on markets v. Hierarchies, the stability of prices, the economics of information ... More significantly, by emphasising competition as a process based on differentiated firms, Richardson anticipated many of the questions credited to modern evolutionary theory. (Metcalfe 1994: 24)

These connections are brought to the surface in the final chapter of *Marshall, Marshallians and Industry Economics*, aptly titled 'Marshall's (real) influence on present-day industrial economics'. Here Richard Langlois convincingly places Marshall's industrial economics directly within the domain of modern evolutionary economics. This interpretation of Marshall's work flows directly from the manner in which Marshall perceived organisation, competition and dynamic capabilities, which stands in stark contrast to the treatment of markets and firms in modern mainstream price theory that clings to its Pigouvian heritage (and also the 'New Economic Geography' where attention is largely restricted to 'tangible' market size and factor immobility effects). The final paragraph of Langlois' chapter provides a fitting conclusion to the volume:

> Marshall is alive and well in some of the most vibrant reaches of what I have called Industrial Economics. In the economics of organization, especially the dynamic capabilities and resource-based approaches, and in Industrial Dynamics and Industrial Geography, genuinely, Marshallian ideas are alive and well. Like Marshall, these literatures are concerned with economic growth and the evolution of industrial structure through processes of specialization, differentiation and integration. (pp. 316–317)[6]

The 'organisational capabilities' or 'competence/resource based' theories of the firm are opposed to the traditional profit maximising theories of the firm and also to the 'transaction costs' theories emerging largely from the work of Oliver Williamson. The central ideas of the organisation capabilities theories, which can be directly linked with the work of George Richardson discussed above place emphasis on the significance of inter-firm relationships and markets, and their role in coordinating and furthering the growth of differentiated knowledge (Langlois 2006: 658–659).[7] Significantly, this approach is opposed to the notion that a catalogue of blueprints is available to firms to address these issues, with the relevance of the issue of capabilities related directly to the implications arising from imperfections and asymmetries in knowledge about how to produce and coordinate activities. Attention is focused on the strategic efforts to build and improve the set of operative capabilities as reflected in its array of accumulated strategic routines (Raffaelli 2004: 222–223). Most importantly, as portrayed most systematically by Brian Loasby (1999), an explicit role for the cognitive powers of human beings is found in these theories, in particular relating to how these powers help shape organisational forms in response to changes in the environment in which interactions occur. At the same time, these responses are founded initially on behavioural routines that have evolved with changes in the economic and social environment. These notions play a pivotal role in modern evolutionary economics, as they did in Marshall's 'biological' explanation of industry organisation and transformation.

Concluding Comments

As always, with this type of enterprise, there will be diverging opinions regarding 'omissions', and the way in which the themes are arranged in *Marshall, Marshallians and Industry Economics*. For example, it is difficult to follow why Marco Bellandi's chapter on interlinked territorial scales of Marshallian external economies is included in Section 4 (as opposed to Section 2, for example), as this chapter breaks the continuity of thought maintained in the other chapters in the section. Similarly, the themes under discussion is Roger Backhouse's chapter on Marshall's method would have been better placed in Section 1, given that these issues are of critical importance in developing an appreciation of Marshall's perspective on industrial economics. As noted by the editors, the omission from the discussion in Section 3 of Austin Robinson's *Structure of Competitive Industry* and *Monopoly* was unintentional and unfortunate, and while Berle and Means' *Modern Corporation and Private Property* was not directly inspired by the post-Marshallian literature, it nevertheless followed in the tradition of Marshall's vision of applied studies.[8] In Section 4, the work of the likes of Edith Penrose and Alfred Chandler could perhaps also have granted further attention. Finally, a perspective on Joan Robinson's evolving interpretations of Marshall's industrial economics may have been of interest to readers, particularly in light of the arguments being developed in Backhouse's important chapter. However, these are minor gripes, as the editors have commendably achieved their objective of conveying and further developing the line of research that inspired *The Elgar Companion to Alfred Marshall*. Collectively, the contributions reinforce the fundamental idea that Marshall's perspective on industrial economics was evolutionary in nature, and that his *Industry and Trade* is *not* simply an exercise in applied work which is a mere appendage to the *Principles*. Fittingly, the influence of Marshall's industry economics is most apparent within the domain of evolutionary economics, the modern manifestation of Marshall's proclaimed economic biology Mecca.

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Notes

1. This review article draws on and extends material published earlier in the *Marshall Studies Bulletin*, Issue 12, 2012.

2. See for example Raffaelli (2003a), Metcalfe (2007), Hart (2012), and contributors to Arena and Quere (2003), Raffaelli et al. (2006) and Shionoya and Nishizawa (2008).
3. All references to *Principles* refer to the eighth edition as published by Macmillan in 1920.
4. These dimensions of Marshall's treatment of industry organisation and transformation, largely overlooked in the course of the Marshallian cost controversies of the 1920s and beyond, were clearly enunciated in Allyn Young's (1928) insightful critique of the prevailing Marshallian equilibrium based theories of firms and markets.
5. A fuller discussion of Richardson's work is provided by the contributors to Foss and Loasby (1998).
6. The relevance of Marshall's economics to modern approaches to economic geography and the literature on industrial districts is emphasised by writers such as Becattini (2003), Raffaelli (2003b) and Loasby (2009).
7. Central aspects of the 'capabilities' approach can be observed as stemming from the earlier work of Nelson and Winter (1973), Langlois and Foss (1999), and Metcalfe (1998). More recently, the notion of dynamic capabilities, dealing with 'higher-order' process by which firms may undertake adaptations has been developed (Winter 2003; Nooteboom 2010).
8. Amongst the many volumes published on Berle and Means' work, Lee and Samuels (1992) is of particular interest as the contributors stress the challenges to mainstream approaches flowing from this work. Later work in the tradition of Berle and Mean is also of relevance, such as, for example, Robin Marris (1964).

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