

Generalizing Darwinism to Social Evolution: Some Early Attempts

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Richard Dawkins coined the term *universal Darwinism* (1983). It suggests that the core Darwinian principles of variation, replication, and selection may apply not only to biological phenomena but also to other open and evolving systems, including human cultural or social evolution. Dawkins argued that if life existed elsewhere in the universe, it would follow the Darwinian rules of variation, inheritance, and selection. He had earlier proposed the “meme” as the unit of cultural replication and selection (1976).¹ This idea that Darwinism may have a broad applicability to other open and evolving systems has been developed in different ways by several contemporary authors, including Richard Lewontin (1970), Henry Plotkin (1994), Daniel Dennett (1995), and David Hull (1988, Hull et al. 2001).

However, the idea that Darwinian principles apply to aspects of human and social evolution is much older and dates back to the time of Charles Darwin. Darwin himself speculated that his evolutionary principles of variation, inheritance, and selection might apply to the evolution of human language, as well as to moral principles and social groups (1859, 1871). A sequence of other authors followed suit but did not resolve the conceptual problems in defining what exactly we mean by *social evolution*, as something more than the evolution of a mere collection of human beings. Accordingly, we have to ask what units of social replication or selection are proposed in these accounts. And in what sense might they amount to more than merely an aggregation of individuals? These questions point to matters of social theory that are relatively neglected even in modern versions of universal Darwinism. One of the conclusions of

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this paper is that an adequate conceptual explanation of the units and processes of Darwinian social evolution has yet to appear, although such an account may now be possible.

This paper is divided into four sections. The first section outlines the basic idea of a generalized, or “universal,” Darwinism. The second outlines a number of early predecessors of the idea, with emphasis on attempts to extend Darwinism to human social evolution. It is shown that these early accounts of social evolution typically focus on the individual rather than on social units of replication or selection. The third section focuses more particularly on some early accounts of units of replication or selection in social evolution that emerged in and after the 1890s. The last section concludes the essay and highlights some implications for recent attempts to extend Darwinism into the social domain.

Generalizing Darwinism

In introducing the term *universal Darwinism*, Dawkins argued that if life existed elsewhere in the universe, it would follow the Darwinian rules of variation, inheritance, and selection (1983). Even if there were a very different system of replication, including one that allowed the “Lamarckian” inheritance of acquired characters, a coherent account of the evolutionary process would still require the key elements of the Darwinian theory. Even in the social context, where acquired characters might be inherited, such Lamarckism requires Darwinism to complete its explanations and is not an alternative to it.² As long as there is a population of replicating entities that makes imperfect copies of themselves, and not all of these entities have the potential to survive, then Darwinian evolution will occur.

The idea of a generalized Darwinism has been applied to the development of neural connections in the brain, the immune system, and computer viruses (Edelman 1987; Plotkin 1994; Aunger 2002). These are cases not merely of analogy but of the existence of additional processes (additional to those at the genetic level) that are actually evolving in accord with the core Darwinian principles of variation, inheritance, and selection. Significantly, Gary Cziko (1995) described the acknowledgement of such a “universal selection theory” as “the Second Darwinian Revolution.”

As such, Darwinian evolution is not tied to the specifics of genes or DNA: essentially it requires some replicating entity. On planet Earth, we find that DNA has the capacity to replicate. But other “replicators” may exist, on Earth and elsewhere. Emphatically, “universal Darwinism” is not a version of biological reductionism or “biological imperialism,” where an attempt is made to explain everything in biological terms. The existence of Darwinian mechanisms also does not mean that the process involved is always that of genetic variation and selection. On the contrary, “universal Darwinism” upholds that there is a core set of general Darwinian principles that, along with auxiliary explanations specific to each scientific domain, may apply to a wide range of phenom-

ena. Accordingly, even if the detailed mechanisms of change at the social level are quite different from those described in biology, socioeconomic evolution is still Darwinian in several important senses. The Darwinian theory is extremely powerful because it is the only adequately detailed causal account of the evolution of complex systems, including organic life.

However, while all evolving systems may be subject to a core set of Darwinian principles, the notion of universal Darwinism itself provides no alternative to a detailed explanation of the particular emergent properties and processes at the social or biological levels. Acceptance of a generalized Darwinism does not provide all the necessary causal mechanisms and explanations for the social scientist nor obviate the elaborate additional work of specific investigation and detailed causal explanation in the social sphere (Hodgson 2001b). At the center of Darwinism there is a rigorous theory, but it explains little on its own and it is thus placed in the context of a mass of empirical material (Hull 1973). Even in biology, Darwinian principles provide a general explanatory framework into which particular explanations also have to be placed. Universal Darwinism cannot itself give us a full, detailed explanation of evolutionary processes or outcomes. It is a meta-theoretical framework rather than a complete theory.

The application of Darwinian principles to socioeconomic phenomena—consisting of irreducible social entities and structures—depends crucially on the existence of variety, mechanisms of inheritance, and processes of selection in that domain. If meaningful inheritance or selection do not exist, then Darwinian principles do not apply. Clearly, the identification of these processes depends decisively on precise definitions of inheritance (or replication) and selection. In addition the levels of selection have to be made clear, along with the replicators and interactors at each level. Some significant progress has been made in refining these concepts in recent years, while there are still important theoretical, conceptual, and definitional issues to resolve.³

A principal aim of this paper is to show that the idea of generalizing Darwinism to social evolution has a long and detailed history, long before Dawkins coined the term *universal Darwinism*. In the context of the current explosion of interest in evolutionary ideas in the social sciences, we can learn some useful lessons from this history.

Of course, it would be impossible to discuss all the social scientists that did not attempt to apply Darwinian principles. We may briefly note, however, that while several nineteenth century authors did consider the application of Darwinian principles to social phenomena—even mentioning the selection of human groups or nations—most of them got no further than considering mere aggregates of individuals, with typically no mention of characteristics additional to those found among the individuals involved. Some of these authors, namely Henry Drummond, Benjamin Kidd, and Sidney Webb, are mentioned below. Other authors, notably Herbert Spencer and Alfred Marshall, not only failed to establish adequately the nature and significance of social structures but also adopted a Lamarckian account in which the inheritance of acquired characters was considered as more important than selection in the evolutionary process. In the final

quarter of the nineteenth century, Spencer was even more influential than Darwin (Bowler 1983). It is now well established that Marshall's evolutionary thinking was much closer to that of Spencer (Thomas 1991; Hodgson 1993; Laurent 2000).

Nevertheless, Darwinian ideas influenced leading intellectuals in several countries, and this influence was not confined to biology (Kohn 1975; Russett 1976). Among these were the American pragmatist philosophers Charles Sanders Peirce, William James, and John Dewey. Peirce used Darwinism to underpin an ontology of randomness and novelty. James and Dewey situated the human will within a Darwinian evolutionary framework and also demonstrated the importance of Darwinism for psychology. Beneath the public hubbub about the descent of humans from apes, Darwinian principles had a deeper impact on the theories of a number of important thinkers. The question of the possible generalization of Darwinism to socioeconomic evolution thus remained on the agenda.

Early Extensions of Darwinism to Human Social Evolution

Darwin's own conjecture that core Darwinian principles may apply to the evolution of human language has already been noted. A few years after the publication of his *Origin of Species* (1859), several scholars followed his hints that the principles of selection, variation, and inheritance may have a wider applicability than to biological organisms alone, including to the evolution of human society.

One of these early attempts was by Walter Bagehot, who loosely but explicitly applied the principles of selection and inheritance to ideas and political institutions (1872). Subsequently, William James considered the natural selection of ideas in human learning and in the development of science (1880). These authors were thus among the first to consider an evolutionary epistemology.⁴ James opened his essay with the observation of a "remarkable parallel . . . between the facts of social evolution on the one hand, and of zoölogical evolution as expounded by Mr. Darwin on the other" (441). However, his discussion was largely confined to the selection of ideas in the heads of individuals. Subsequently Samuel Alexander (1892) and Benjamin Kidd (1894) wrote on the natural selection of ethical principles. Albeit limited in their robustness or scope, these works were exceptional in bringing the Darwinian principle of selection into the social domain and in considering units of selection other than individuals alone. These early precedents show that the idea of generalizing Darwinism to other evolving systems, outside biology and including human society, was taken on board by a number of influential thinkers toward the end of the nineteenth century.⁵

Our central concern here is the application of Darwinian principles to the evolution of social phenomena such as institutions. However, while several thinkers believed that Darwinian principles apply in this sphere, they were applied loosely and incompletely. Hence Bagehot's emphasis was on the struggle between nations, not on a process of selection involving additional social units or structures. He considered the role

of imitation and the “cake of custom” but did not emphasize institutions as units of selection. Similarly, Sidney Webb insisted that “the units selected are not individuals but societies” (1889, 53). But he was also unclear of the mechanisms or criteria of selection, other than to allude to the competitive struggle between nations for access to raw materials and for supremacy in world markets. Kidd wrote of human “societies” and “the survivals of the fittest” in the same sentence (1894, 43) but did not clearly establish any notion that social structures were themselves subject to selection processes as well as individuals. In the same year, Henry Drummond saw Darwinian evolution in human society (1894), but he did not examine the units of selection and processes of replication in more detail. These writers failed to consider the “natural selection” of social structures or institutions. When they applied Darwinian selection, it was loosely to collections of individuals. In seeing individuals as units of selection, it was widely accepted that the selected traits might also be conducive to the harmony and the survival of groups or nations. But this did not establish a rigorous concept of selection at the group or higher level.

Accordingly, a number of these early extensions of Darwinian principles to social evolution failed to establish the social units of replication and selections other than to refer imprecisely to societies or groups. Hence a crucial deficiency remained. It was not explained why human social evolution involved anything more than the selection of individuals. After all, the selection or fitness advantage of one group over another may simply result from the selection or fitness advantages of the members of the more adapted group. In this case, group (or social) selection or fitness amount to nothing more than individual selection or fitness. Without a supplementary explanation, such notions of “social” evolution dissolve simply into the evolution and selection of human individuals.

Several prominent accounts in the 1890s of Darwinian evolution in human society shared this limitation. The then prominent analyses of Otto Ammon (1895), Georges Vacher de Lapouge (1896, 1897) and Carlos Closson (1896a, 1896b) addressed individual selection, not the selection of social units. The writings of Ammon and Lapouge were preoccupied with explanations of social phenomena in terms of the alleged racial characteristics of individuals. Even when Lapouge and Closson emphasized the term “social selection” they meant the selection of ethnically defined individuals in the context of their social environment. For these and many other writers at that time, the quality of human civilization depended principally on the biologically determined capacities of the human individuals within it.⁶

Early Recognitions of Social Units of Replication or Selection

In the 1890s, and independently of each other, two writers first formulated the notion that there were social units of selection, irreducible to individuals, to which Darwinian principles might apply. The first of these was the Scottish philosopher David

George Ritchie. Ritchie corresponded with Alexander, and they both saw that Darwinian selection could be applied to the evolution of ethical ideas.

In his book *Darwinism and Politics*, Ritchie upheld that in human societies “language and social institutions make it possible to transmit experience quite independently of the continuity of race” (1889, 59). In other words, cultural transmission functioned alongside, and in addition to, what today we describe as genetic inheritance. George Henry Lewes (1879) and Henry Drummond (1894) had previously suggested this idea. Ritchie himself argued, “An individual or a nation may do more for mankind by handing on ideas and a great example than by leaving numerous offspring” (1889, 59). In the second edition of this book (1891), Ritchie added an essay “Natural Selection and the History of Institutions” and argued that Darwinian principles of variation, heredity, and selection applied to the evolution of social institutions as well as to organisms. Ritchie repeated that language and institutions are social mechanisms through which adaptations and knowledge may be inherited. He wrote of a struggle between “institutions, languages, ideas” as well as a struggle between individuals. But here, as elsewhere, Ritchie warned that although Darwinian principles applied to social evolution, they must always be used carefully, with meticulous acknowledgement of the differences in the mechanisms involved.

In a later article (1896) Ritchie developed these ideas in more depth. Although he regarded biology as a better source of ideas for the social sciences than physics or chemistry, he repeatedly warned against the casual and uncritical use of biological terms in a social context. Ritchie argued that there was not simply a process of struggle in society between individuals but also one between different “social organisms” including the family, social organizations, nations, and so on. This second-level struggle vastly complicated the processes of social evolution and selection. For instance, as Ritchie pointed out, one individual might simultaneously belong to several social units or institutions. Accordingly, the processes of selection at a social level might conflict with each other, as well as with the natural selection of individuals.

Ritchie noted that natural and social evolution differed in other respects. For instance, selection in the natural world works through the death of the unfit. In contrast, in the social sphere, it is not simply through “the slow and deadly process of natural selection that the various elements in our civilization have been produced, preserved, and diffused.” Ritchie argued that in social evolution “a great many habits are due to imitation and not to instinct, i.e., they are transmitted in the social inheritance of the race, and are not dependent on heredity, in the biological sense” (1896, 168–9). For Ritchie, this developed capacity to imitate involved a degree of consciousness and reflection. In these circumstances both “the habit may be changed without the extinction of the race . . . customs and institutions may perish without the necessary destruction of the race that practiced them,” and “customs and institutions may be handed on from race to race, and may long survive the race from whom they originated” (170). The life

span of the social units of selection could be entirely non-coextensive with the lives of the human individuals that sustained them.

While carefully acknowledging these important differences, Ritchie still regarded the theory of selection as being applicable to the social domain. Despite detailed differences of evolutionary mechanism, the “range” of Darwinian theory could be extended from the biological to the social sphere. In a prescient passage, Ritchie wrote,

But in asserting that human society presents many phenomena that cannot be accounted for by natural selection in its purely biological sense, I am not denying the truth of the theory, but rather extending its range. There is going on a “natural selection” of ideas, customs, institutions, irrespective of the natural selection of individuals and of races. (1896, 170–1)

This quotation contains a path-breaking recognition that Darwinian principles could be applied to social evolution and to nonbiological units of replication or selection. The idea of “extending the range” of Darwinian principles outside the biological sphere tallies with what was later described as *universal Darwinism*.

A key innovation by Ritchie was to recognize that the units of replication or selection could be social entities such as customs and institutions, rather than individuals alone. This is possibly the first explicit appearance of the idea of a natural selection of customs, institutions, or social structures in the English language. There were several earlier applications of natural selection to social phenomena, but none of them so clearly made customs or institutions the explicit units of selection.

The second scholar to write of institutions as units of selection was Thorstein Veblen. Elsewhere I have put forward the hypothesis that the British zoologist and philosopher Conwy Lloyd Morgan may have stimulated Veblen’s thinking in this area, alongside James, Peirce, and others. Circumstantial evidence exists that Veblen came into contact with Morgan in Chicago in 1896 (Dorfman 1934; Hodgson 2004a). In any case, Veblen’s idea of “the natural selection of institutions” dates from this time, and he was later to cite Morgan in his work.

By 1896 Morgan had accepted the arguments of August Weismann (1893) that acquired characters could not be inherited in the biological sphere. Rejecting Lamarck in favor of Weismann, Morgan then asked: if human beings had evolved only slightly in genetic terms, then what had evolved in the last millennium or so, when human achievements have been transformed beyond measure? Morgan’s answer to the puzzle was as follows:

This is that evolution has been transferred from the organism to the environment. There must be increment somewhere, otherwise evolution is impossible. In social evolution on this view, the increment is by storage in the social environment to which each new generation adapts itself, with no increased native power of adaptation. In the written record, in social traditions, in the manifold inventions which make scientific and industrial progress possible, in the prod-

ucts of art, and the recorded examples of noble lives, we have an environment which is at the same time the product of mental evolution, and affords the condition of the development of each individual mind to-day. . . . [T]his transference of evolution from the individual to the environment may leave the faculty of the race at a standstill, while the achievements of the race are progressing by leaps and bounds. (1896, 340)

Morgan thus established the possibility of social evolution having a substance and pace that was reducible neither to individuals nor their biological attributes. Information and knowledge were more than a passive environment of biotic selection in human evolution but involved a level of inheritance in their own right. Morgan added to Lewes's account an insistence—in line with the work of Weismann—that human biotic and mental capacities could not evolve so rapidly as to account for the evolution of human civilization.⁷

Returning to Veblen, in a book review of a work by Antonio Labriola, Veblen saw in Labriola's Marxism the doctrine that the "economic exigencies" of the industrial process "afford the definitive test of fitness in the adaptation of all human institutions by a process of selective elimination of the economically unfit" (1897, 390). But these were Veblen's words, not Labriola's. Veblen made the additional and substantial theoretical leap of applying the principle of selection to institutions and not merely to individuals or groups.

For Veblen, the institutional structure of society was not merely "the environment," as Morgan had put it. Veblen indicated that "the environment" consisted of institutional elements that were themselves, like organisms, subject to evolutionary processes of selection. Darwinism was interpreted not narrowly in terms of individuals being selected in a fixed environment but in an environment that is changed in its interaction with those creative individuals. As Veblen put it, "The economic life history of the individual is a cumulative process of adaptation of means to ends that cumulatively change as the process goes on, both the agent and his environment being at any point the outcome of the last process" (1898, 391). Veblen concluded that "an evolutionary economics must be a theory of a process of cultural growth as determined by the economic interest, a theory of a cumulative sequence of economic institutions stated in terms of the process itself" (393). This was essentially the core theoretical project of Veblen's *Theory of the Leisure Class*. In a key passage, Veblen declared,

The life of man in society, just like the life of other species, is a struggle for existence, and therefore it is a process of selective adaptation. The evolution of social structure has been a process of natural selection of institutions. The progress which has been and is being made in human institutions and in human character may be set down, broadly, to a natural selection of the fittest habits of thought and to a process of enforced adaptation of individuals to an environment which has progressively changed with the growth of community and with the changing institutions under which men have lived. Institutions are not only themselves the result of a selective and adaptive process which shapes the pre-

vailing or dominant types of spiritual attitude and aptitudes; they are at the same time special methods of life and human relations, and are therefore in their turn efficient factors of selection. So that the changing institutions in their turn make for a further selection of individuals endowed with the fittest temperament, and a further adaptation of individual temperament and habits to the changing environment through the formation of new institutions. (1899, 188)

It was no accident that Darwin's phrases "natural selection" and "struggle for existence" appeared here. Veblen wrote also in the same work of "the law of natural selection, as applied to human institutions" (1899, 207). Apparently without of the influence of Ritchie, but with the probable inspiration of Morgan, Veblen became the second writer after the publication of *The Origin of Species* to apply forcefully Darwin's principle of selection to the evolution of customs and institutions. The decisive implication was that Darwinism could be applied to human society without necessarily reducing explanations of social phenomena entirely to individual psychology or biology. As Veblen wrote,

If . . . men universally acted not on the conventional grounds and values afforded by the fabric of institutions, but solely and directly on the grounds and values afforded by the unconventionalised propensities and aptitudes of hereditary human nature, then there would be no institutions and no culture. (1909, 300)

Veblen thus suggested that if socioeconomic phenomena were determined exclusively by biological factors, then the concepts of institution and culture would be redundant. Culture and institutions are irreducible to biological factors alone. Veblen thus broke decisively from biological reductionism. Consistent with this interpretation, the concepts of cultural and institutional evolution were developed his *Theory of the Leisure Class*. Like Ritchie, Veblen had no explicit notion of emergent properties. But his antireductionist position is clear from quotations such as the above.

Ritchie and Veblen died in 1903 and 1929, respectively. Not only did they fail to forge the necessary link between social evolution and emergent properties but also few of their followers and contemporaries pursued further the research agenda of applying Darwinian principles to the evolution of social entities and units.

The pioneering psychologist James Mark Baldwin was yet another writer to accept the importance of Darwinian principles in the social sphere. Baldwin saw groups as possible units of selection (1909, 44). In terms similar to those of Morgan, George Henry Lewes, and others, he saw the "absorption of the social tradition" as a key mechanism of social evolution (52). Baldwin wrote that "Darwin struck upon a law of universal application in nature" (55). Like others, he acknowledged the possibility of a natural selection of ideas as the grounding of an evolutionary epistemology. One of Baldwin's key innovations was to extend the theory of natural selection to the theory of human development and learning (Richards 1987).

Baldwin considered the basis of social integration and solidarity and emphasized the importance of self-reflective behavior at the social level. But although he saw social groups as possible units of selection, he had no developed notion of institutions or social structures. Essentially he applied Darwinism more to the natural than to the social world. Unlike Veblen, Baldwin (1909, 83) was an enthusiast of “a thorough-going positivism of method” and intimated a dislike for “metaphysical” speculation while unwittingly indulging in it himself. From this stance he was not receptive to the emergentist philosophy of Morgan and others and did not see the road it opened to a multiple-level selection theory. Overall, Baldwin’s contribution to the Darwinian theory of social evolution was less important than that of Ritchie or Veblen.

Another rare extension of Darwinian principles to social evolution is in a work by Albert Galloway Keller (1915), who was a student of William Graham Sumner. Unlike Sumner, Keller enthusiastically applauded the application of Darwinian principles to social evolution (1915, 15).⁸ It was not merely a matter of analogy but of acknowledging that social evolution was Darwinian in a fundamental sense: “I find a something in the social field which is variation, whether or not it may be like what is called variation in the organic field; similarly social selection is selection and not merely like it.” Sumner’s influence was present, however, in Keller’s choice of “folkways” as the basic units of social evolution: “The folkways are the simplest and most fundamental phenomena of societal life. They are the germ and matrix of all human institutions” (41). Keller wrote also of the processes of selection of social mores and of tradition as the factor of social evolution corresponding to heredity in organic evolution as tradition, kept alive by imitation.

Although Keller’s account lacks an adequate philosophical apparatus to sustain multiple levels of selection including units of selection at the social level, it is one of the most advanced tracts on this theme in the period. Contemporary works include those of Herbert William Conn (1914) and F. Stuart Chapin (1913), both of which discussed social evolution but failed to avoid its reduction to matters of biological inheritance.

What may seem remarkable to modern eyes is that the project to apply Darwinian principles rigorously to social evolution was pushed off the agenda of the social sciences after the First World War. This was the “dark age” for evolutionism in the social sciences: “During this time evolutionism was severely criticized and came to be regarded as an outmoded approach that self-respecting scholars should no longer take seriously. . . . [E]ven the word ‘evolution’ came to be uttered at serious risk to one’s intellectual reputation” (Sanderson 1990, 2).

Among the criticisms raised at the time was the view that Darwinian evolution is “blind” and hence ignores or underestimates human intentionality.⁹ But this interpretation is mistaken. Darwin himself accepted that humans are intentional but insisted that the capacity for intentional behavior had evolved and was foreshadowed in our prehuman ancestors (Darwin 1859, 208; 1871, vol. 1, 46). Darwin neither denied nor neglected human intentionality but insisted that it had evolved and was subject to a causal explanation. Another erroneous basis for dismissing Darwinism was that it

involved “natural selection,” whereas social evolution involves “artificial selection” (Commons 1924, 376). However, Darwin did not suggest that “artificial” and “natural” selection were mutually exclusive. Instead, examples of the former were used by Darwin to support the idea of the latter.

Furthermore, while Darwinian biology made major breakthroughs in the period from the 1930s to the 1950s, an adequate refinement of general Darwinian concepts such as selection, replication, and inheritance—in terms that could be applied to socio-economic evolution without forcing it entirely into a biological mold—was lacking. Indeed, adequate and precise generalizations of these Darwinian terms did not appear until the final years of the twentieth century.¹⁰

In the hostile intellectual environment of the 1930s and 1940s, the theory of Darwinian social evolution lay mostly dormant and undeveloped until it began to be revived after the Second World War, notably by the archaeologist V. Gordon Childe and the psychologist Donald T. Campbell. Childe loosely considered both social institutions and technological innovations as units of selection (1951, 175–9). Campbell made the point that the appropriate analogy for social evolution is not biotic evolution but a more general processes of evolution “for which organic evolution is but one instance” (1965, 24). This was an idea that Campbell had helped to revive but was then already almost a hundred years old. This old idea was later described as “universal Darwinism.”

Conclusion: Looking Forward from the Past

It is beyond the scope of this paper to review the recent literature that attempts to apply Darwinian principles to social or cultural evolution. But consideration of the earlier literature cited above suggests some questions and issues that remain to be addressed.

First, absent in this early literature were rigorous definitions of the core concepts of a generalized Darwinism, including variation, selection, and replication. Mechanisms of selection were typically not discussed in much detail. Furthermore, these earlier writers failed to distinguish between the cohesive entity that is actually being selected (the phenotypes or interactors) and the entities that replicate differentially as a result of selection (the genotypes or replicators). Candidate social interactors might include firms and other cohesive organizations (Hodgson and Knudsen 2004). Candidate social replicators might include customs, routines, and “folkways” (Keller 1915; Nelson and Winter 1982). To a large degree, these issues of conceptual precision definition and exploration remain with us today, although some significant progress has been made in recent years.

Second, a central but unfinished task is to establish the nature of sociality and of social units of replication or selection. Notably, many of even the most sophisticated attempts to apply Darwinism to cultural evolution—including the work in “dual inheritance” or gene-culture “coevolution” by Robert Boyd and Peter Richerson (1985) and

William Durham (1991)—generally make ideas (or “memes”) the units of selection at the cultural level. Their accounts of evolutionary selection include the selection of individuals and the resulting loss of some ideas and the survival of others, or the deliberate choice by individuals of one set of ideas rather than another. While all these developments are of considerable importance, there is little connection with the vast literature in social theory that focuses on social structures and institutions and on their irreducibility to individuals. The key question is this: what makes an entity social, rather than merely being a common attribute of a number of individuals? The answer must involve some notion of social structure, with properties that are irreducible to individuals alone.¹¹ However, despite earlier important statements of the “natural selection of institutions,” the concept of social structure has yet to be adequately incorporated in a Darwinian evolutionary framework.

Overall, remarkably little progress to date has been made in following Ritchie or Veblen and establishing social institutions or structures as units of replication or selection. A pressing task is either to follow up these earlier hints in a rigorous way or to show that such social units of replication or selection are unviable. Recent careful analytical work on group selection is relevant here. The modern literature on group selection establishes the special conditions under which groups may emerge as units of selection in biological as well as social evolution.¹² But pointing to groups as possible units of selection is not enough. Again it has to be shown that groups have emergent properties that are irreducible to the properties of their members. This task has hardly started, even today.

Clearly, human sociality involves more than the anthill or the beehive. In particular, it relies on language and culture, with intersubjective interpretations of intention and meaning (Bogdan 2000). These complex causal interactions are the basis of emergent social properties. These properties have to be described and analyzed before they play their part in a theory of socioeconomic evolution. By contrast, the attributes of sociality cannot be established simply by regarding the human as social by definition or by loosely defining the social simply in terms of human interaction. These looser and broader statements are insufficient to identify social interactors, social replicators, and mechanisms of social replication. To establish the essence of human sociality and place it in an evolutionary framework, an intensive and detailed dialogue has to be created between evolutionary and social theory.

These steps, if completed, would consolidate the suggestions of Ritchie (1896), Veblen (1899), and Keller (1915) concerning social units of selection, but with the significant additional benefit of modern developments in social theory, psychology, anthropology, and the philosophy of science. This work would connect with a substantial body of literature in organization science and evolutionary economics, which has proposed social replicators such as routines and suggested viable mechanisms of selection.¹³ In all, the possibility of a Darwinian and evolutionary social science is now in prospect, after some pioneering authors envisaged it around a century ago.

Notes

1. Note that the adoption of the idea of universal Darwinism implies neither genetic reductionism nor necessarily any other of Richard Dawkins' particular views.
2. Hence Lamarckism and Darwinism are not mutually exclusive. In the biological sphere, Charles Darwin (1859) himself believed in the "Lamarckian" inheritance of acquired characters, but since the 1890s this idea has been widely rejected from biology. The modern consensus is against Lamarckian inheritance in biology, but it still may be possible in social evolution. Darwinism, in contrast, applies to both spheres (Hodgson 2001a; Knudsen 2001).
3. See Aunger 2002, Godfrey-Smith 2000, Knudsen 2004, Price 1995, and Sperber 2000. Geoffrey Hodgson and Thorbjørn Knudsen (2004) argued that the concept of the "interactor"—preferred by David Hull (1988) to Dawkins' "vehicle"—applies to business firms in economic evolution. Following Thorstein Veblen (1899), Hodgson (2003) and Hodgson and Knudsen (2004) also argued that habits and routines are replicators in socioeconomic evolution.
4. Evolutionary epistemology was later rediscovered and developed by Karl Popper (1972) and Donald Campbell (1974).
5. Remarkably, in 1898 the American philosopher Charles Sanders Peirce proposed in 1898 that the laws of nature themselves evolve (1992). This idea is being further developed by physicists today, involving the argument that key physical constants take the values they do because alternative universes in which the constants took different values failed to survive (Smolin 1997).
6. Here Alfred Marshall was no exception. Marshall wrote, "Economic institutions are the products of human nature and cannot change much faster than human nature changes" (1923, 260).
7. Conwy Lloyd Morgan went on to contribute to the development of the philosophical idea of emergent properties (1923). Emergentist philosophy itself reached a high point of evolution in the 1920s, before positivist currents in philosophy swept it aside. It was not until the 1960s that emergentist ideas began to revive. Arguably, an emergentist philosophy is necessary to sustain a theory of evolution on multiple levels, including the social level (Blitz 1992; Hodgson 2004a).
8. Despite William Graham Sumner's subsequent and frequent description as a "social Darwinist," Albert Galloway Keller rightly observed that his teacher "did not give much attention to the possibility of extending evolution into the societal field" (1923, 137). In fact, William Graham Sumner seldom mentioned Darwin or Darwinism, and his association with "social Darwinism" is inaccurate and highly misleading (Bannister 1973; Hodgson 2004b).
9. See, for example, Commons 1924, 376, and Penrose 1952.
10. See in particular Hull 1988, Godfrey-Smith 2000, Price 1995, and Sperber 2000.
11. See, for example, Archer 1995, Kontopoulos 1993, and Weissman 2000.
12. For forensic accounts of group selection see Sober 1981, Sober and Wilson 1998, Bergstrom 2002, and Henrich 2004. Notably, Boyd and Richerson 1985, 204–40, describes a conformist transmission mechanism that can produce group selection.
13. See, for example, Aldrich 1999, Nelson 1995, and Nelson and Winter 1982.

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