**A CONJOINED INTELLECTUAL JOURNEY: RICHARD H. DAY AND THE JOURNAL HE FOUNDED**

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Abstract: In 1980 Richard H. Day co-founded and long edited the *Journal of Economic Behavior and Organization* (JEBO). It development reflected the intellectual journey that Day himself followed in his career from an early interest in decisionmaking by farmers using programming methods through studying adaptation in organizations facing bounded rationality and nonlinear dynamics to a broad evolutionary approach to long-run patterns of economic growth and development. A not widely recognized outcome of this was that JEBO would become a leading outlet for evolutionary economics, including all of its various strands, including biological, organizational, neo-Schumpeterian, Alchian efficiency, Simonian bounded rationality, evolutionary game theory, and complexity evolution.

Keywords: adaptive economics, chaos theory, complexity economics, evolutionary economics,

1. **Introduction**

Richard (Dick) Hollis Day (1933-2021) was a unique economist who forged a special path in his highly innovative intellectual journey. Coming from an Iowa background his earliest interest was in agriculture and economic development. But from the beginning he was concerned with how people make decisions, having a healthy skepticism for standard rational equilibrium models of how they do it. He dug into the process of this, recognizing that they are adapting to changing situations using bounded rationality that leads to dynamic behavioral adjustments. Early on he was attracted to using programming methods and simulation models to study these adaptive behavioral dynamics in many different industries, although he would expand this approach to broader issues, including macroeconomic cycles and longer run growth questions. His concerns expanded to include the nature of institutional evolution and how systems develop over multiple time phases. In the 1980s he began to focus on various forms of nonlinear dynamics such as chaos theory, studying these for many of the micro and macro problems and systems he had studied earlier, expanding his insights into a broader theory of complex economic dynamics of many sorts. He also at times considered broader philosophical issues (Day, 1975, 2005a) as well as being a poet (Day, undated).

In 1980 he co-founded with Sidney Winter the *Journal of Economic Behavior and Organization* (JEBO) as an outlet for research that paralleled his interests, and within a few years he became the sole editor, remaining so until 2001. The journal published papers that leading journals would not accept because they were considered to be too “heterodox,” and while many of these are now not remembered, some became extremely influential to the point of even being cited in the awarding of Nobel Prizes, foundational papers in modern behavioral economics. One of these was Richard Thaler’s (1980) paper introducing the concept of mental accounting. Another was that by Güth et al. (1982) that introduced the ultimatum game. Yet another was that of List and Shogren (1998) that revived for modern experimental economics the use of field experiments. Day’s ability to find and encourage the publication of papers outside the mainstream that would nevertheless become highly influential within the mainstream led many to say that he succeeded in making JEBO be the only journal that was “both heterodox and respected,” a characterization his successors as editors have been very aware of, a reputation they have endeavored to uphold.

Day’s own position in this as someone both somewhat outside of the orthodox mainstream while yet being respected by those operating within it is indicated particularly by the blurb that Paul Samuelson provided for the cover of his 1999 book, *Complex Economic Dynamics, Volume II: An Introduction to Macroeconomic Dynamics*, which followed a similar volume on microeconomics from 1994:

“Richard Day’s two books serve as excellent resources for scholars and students who want to learn more about complex dynamic systems, involving non-linearities, bifurcations, limit cycles, and ergodic theory.”

A central theme of this paper besides reviewing Day’s intellectual journey will be to emphasize that a theme that united much of his work was developing a general theory of evolutionary economics, which has had various strands to it. Day regularly mentioned evolutionary outcomes from the adaptive behaviors he studied, but he did not himself emphasize this as an ultimate unifier, even as he increasingly emphasized its importance as his career progressed. Nevertheless, his interests covered the various branched of evolutionary economics, and this led him to encourage publication of articles in JEBO representing these various branches of evolutionary economics. This paper will lay those different strands out and show how Day did this, with the result that while it was not widely recognized, by the time he stepped aside as editor, the journal had become one of the leading journals in the broad field of evolutionary economics.

1. **Day’s Intellectual Journey**

Dick Day was born in Ames, Iowa, with his father a band leader and him playing many musical instruments. He received a General Science degree in 1955 from Iowa State in Ames. He would receive his PhD from Harvard in 1961), but showed his connection with his roots in the agriculture of Iowa by publishing his first paper on recursive programming for agricultural production in a book published at Iowa State (Day, 1961). His focus on recursive programming led to his first book two years later (Day, 1963). During the period he was completing his PhD and shortly after, 1959-62, he served in the US Air Force as a mathematician and systems analyst. Following this he was a consultant for Richard Reuter who directed the Food for Peace Program under President Kennedy, with this opening his interest in broader economic development issues around the world.

In 1963 Day began his academic career by moving to the University of Wisconsin-Madison. There he continued his interest in the use programming for economic decisionmaking that continued through all his time there (Day and Kennedy, 1970; Day and Robinson, 1972), but began to move into related areas. An important thread was his becoming aware of the work of the behavioral economics group at Carnegie-Mellon, perhaps his initial step on the path to beginning the journal with that in its name (Day, 1964). He would follow through on this by becoming more closely acquainted with foundational elements of behavioral economics, especially the idea of bounded rationality and satisficing as propounded by its founder, Herbert Simon (Day, 1967a, 1971; Aigner et al., 1971; Day et al., 1974). During the late 1960s he would also branch out into considering longer run issues of technological change (Day, 1967b), as well as an initial foray into modeling somewhat complex dynamics (Day and Tinney, 1969).

In 1977 he moved to the University of Southern California, which would serve as his academic home base for the rest of his career, although he would visit at many institutions around the world. But not too long before he left Wisconsin he organized with Theodore Groves an important conference in 1974 that represented an advance in his thinking as well as influencing others. It highlighted thinking about the role of adaptation in economic decisionmaking and dynamics, which more clearly introduced evolutionary ideas into Day’s thinking (Day, 1975b). But it was combined with thinking about economic organizations and behavioral economics ideas of bounded rationality and disequilibrium dynamics. He was both branching out further as well as developing a new synthesis. Interestingly at this conference Alan Kirman participated, with his paper in the volume (Kirman, 1975) representing his own first move away from conventional general equilibrium and game theory into eventually becoming a major figure in complexity economics (Kirman, 2022). In any case it can be argued that with this conference and his own paper for it, Day began to adopt adaptive evolutionary thinking as a central organizing framework for his general view of economics and laid the foundation for him to co-found JEBO in 1980 after he moved to USC.

His long journey into nonlinear and complex economic dynamics began after he co-founded JEBO in 1980 initially in joint work with Jess Benhabib (Benhabib and Day, 1981, 1982), but then in several important papers on chaotic macroeconomic dynamics by himself (Day, 1982, 1983) and later others (Day and Shafer, 1986; Day and Pianigiani, 1991). A paper using chaos theory that was especially influential was Day and Huang (1990) that was the first to show such dynamics in financial markets with heterogeneous agents. He culminated his work on complex economic dynamics with his famous pair of books on the topic (Day, 1994, 1999). He also published numerous works on behavioral and experimental economics (Day, 1993a, 1996, 1998).

Arguably his final phase, which developed out of combining his interest in complex nonlinear dynamics with his interest in longer run economic growth patterns, involved him working more openly on explicitly evolutionary models. Here we can see how the evolutionary framework, which had made scattered earlier appearances, emerged more fully as an organizing focus. While he made an initial stab on this new path with Day (1987), the most important paper in this vein, and one of his most challenging and provocative ones, was Day and Walter (1989). They set out with the ambition to model all of human economic history, considering the deep entanglements between infrastructure and technological change, with complex dynamics possible given various nonlinearities in the system, and also provocatively allowing for reswitching of technologies where societies can move backwards to previously used technologies, this happening possibly because of a decline of a supporting infrastructure, this modeling possibly what happened in Europe after the fall of the Roman Empire. This was the fountainhead paper out of which his later efforts would derive, although it would seem that in his final works he seemed to focus more on this topic than on most others (Day, 1993b, 1999, 2004, 2005b; Day and Pavlov, 2001). A particular work in this vein that combined his emphasis on economic evolution with his older concerns regarding behavioral economics and organizations appeared in a volume of essays dedicated appropriately enough to the father of behavioral economics who also was an important figure in evolutionary economics, Herbert Simon (Day, 2002).

1. **Schools of Evolutionary Economics and the Journal of Economic Behavior and Organization**
2. **The Foundations of Evolutionary Economics**

The foundations of evolutionary economics arose from development of the law of natural selection in evolutionary theory (Rosser, 1992). Charles Darwin and Alfred Russel Wallace, independently developed the idea by drawing on Malthus (1798), who discussed humans competing for food as population presses against the means of subsistence in the face of limited land (Darwin and Wallace, 1858). Economists then began introducing discussion especially of Darwin’s formulation of the theory, including Karl Marx in a letter to Engels (Marx and Engels, 1942). He lauded Darwin’s explanation of evolution in the plant and animal kingdoms, while arguing that humans can use planning to manage nature thereby abrogating Malthusian limits to population. Also, Alfred Marshall, wrote in the Prefaces of the eight volumes of his *Principles of Economics* from 1890 to 1920 that “the Mecca of the economist lies in economic biology” (Marshall, 1920, p. xiv), although he mostly drew on physics models of mechanics in his formal modeling. But, Marshall argued that over time evolutionary forces drive economic change in a gradual fashion, quoting Darwin’s (1859) title page of his most famous book, “Natura non facit saltum,” (“Nature does not take a leap”), which Darwin borrowed from Leibniz.

It was Thorstein Veblen in his “Why is economics not an evolutionary science?” (Veblen, 1898) who explicitly introduced the idea of evolutionary economics, which he contrasted with neoclassical economics, a term he coined (Colander, 2000), identifying it with Marshall especially. He emphasized the evolution of institutions and organizations, with this leading to the founding of the US-based Association for Evolutionary Economics, which came to advocate Old Institutional Economics in the US, which also was influenced by the German Historical School (Commons, 1934)

Geoffrey Hodgson (1988) says Veblen came to his invention of “evolutionary economics” from examining the interactions of the individual and the state in the economy, bringing in the general role of institutions and their evolution over time through Darwinian natural selection. In doing so, Veblen drew on a form of Darwinism that was emerging in Britain, the *emergentist* view developed by C. Lloyd Morgan (1923), which followed George Henry Lewes (1875), who initially drew on the idea of “heteropathic laws” due to john Stuart Mill (1843).

The emergentist evolution view was a holistic approach, seeing natural selection functioning at the level of entire organisms and also at higher levels, which became the theory of multi-level selection (Crow, 1955; Henrich, 2004; Lewis, 2012). As Mill laid out heteropathic laws, which were renamed by Lewes (1875), with these involving the “whole being greater than the sum of the parts,” with Day seeing this as a central feature of complexity (Day, 2007b). Mill discussed how salt is very different from its constituent components, sodium and chlorine, as an example of his heteropathic laws. Veblen used this in his analysis of the evolutionary emergence of economic institutions. This was not a Marxist approach, but it differed sharply with the individualist reductionism Veblen saw in Marshall’s neoclassical economics. This debate between holistic and reductionist approaches happened in biological evolutionary theory as well. The emergentist approach lost out in the 1930s to the neo-Darwinian synthesis that emphasized stochastic processes at the reductionist genetic level that was due to Ronald A. Fisher (1930), J.B.S. Haldane (1932), and Sewall Wright (1931). But emergentism came back in the developing theory of multi-level evolution, where cooperation at higher levels is operational, an important issue in evolutionary game theory. An early hint of this appeared in a paper in the second issue of the JEBO by Boyd and Richerson (1980).

As it was, Veblen’s evolutionary economics drew on an emergentist view of evolution, with its focus on cooperation, with this operating in the intermediate forms, institutions, which operate at a higher level than individuals do, but at lower levels than entire states or socio-economic classes as Hegel and Marx focused. Following Hegel and the German Historical School, Veblen developed his own dialectical synthesis between individualism and holism in the concept of the evolving institution. Following Veblen, Day brought this into the new journal as a central focus showing up in its name, even as much of this would follow the New Institutionalist approach of Oliver Williamson that emphasized transactions costs, who authored the first article in the new journal (Williamson, 1980). But the idea of institutions evolving adaptively as Day (1975b) was seeing would appear in the journal in a paper by Gregory Dow (1990).

1. **Schumpeter and the Neo-Schumpeterians**

Veblen deeply studied technological change, seeing it as centrally driving economic evolution. But another school of evolutionary economics that emphasized the importance of technological change, drew on the work of Joseph Schumpeter (1911, 1950) to analyze how firms operate, that of Richard Nelson and Sidney Winter (1974, 1982) and those who followed them, the neo-Schumpeterians. For Nelson and Winter (1982) the nature of *routines* is the central *meme* of evolutionary economics, following biological evolutionist, Richard Dawkins, who argued that the gene as the main meme in his generalized Darwinism approach (Dawkins, 1976). Hodgson and Knudsen (2006) have further advocated Dawkins’s generalized Darwinism approach, while also noting its limits. As it was a major influence on Nelson and Winter’s focus on routines came from the work of March and Simon (1958).

Schumpeter and his followers were deeply concerned with the evolutionary theory debate over continuity versus discontinuity or *saltationalism* (Rosser, 1992). Schumpeter emphasized the central role in technological change of sudden breakthroughs that discontinuously change economic systems in revolutionary ways. No number of improved horse carriages can bring about the railroad train and what it meant for economic history. Evolutionary economists following Schumpeter have followed this saltationalist perspective more than most biological evolutionists, the latter more likely to follow Darwin and his view that natura non facit saltum, “nature does not take a leap.” Emergentists like Morgan were saltationalist, but the neo-Darwinian biological evolutionists only opened to this with the emergence of the idea of *punctuated equilibrium* due to Eldredge and Gould (1972). The early evolutionary economists before Veblen and Schumpeter split on this issue, Marx seeing revolutionary changes in the forces of production while Marshall directly quoted Darwin’s *natura non facit saltum* as the central principle in the gradual evolution of economic systems.

The neo-Schumpeterian approach played an important role early in the journal as Sidney Winter co-founded the journal with Day and published papers in it elaborating the approach (Winter, 1981, 1984). While Day’s approach emphasized more that of adaptation operating within bounded rationality, others would pursue neo-Schumpeterian themes in the journal, sometimes especially as it related to the new institutionalist view of Williamson (Hodgson, 1998; Foster and Metcalfe, 2012). Nevertheless, Day (1984) himself contributed to the discussion of Schumpeterian dynamics in the early years of JEBO, as well as later elsewhere in a clearly evolutionary context (Day, 2007a).

1. **Alchian and Evolutionary Efficiency**

Armen Alchian (1950) identified evolution as crucial to market competition’s efficiency. Competition between firms is analogous to the competitive process of natural selection in biological evolution. He saw this as updating the tradition of Malthus and Marshall in evolutionary economics. For Alchian, evolutionary market selection is central to market efficiency. Alchian’s arguments influenced Nelson and Winter and also had defenders in various papers in the journal in its earlier days (Levinthal and March, 1981; Roumasset, 1995).

This debate appeared in biological evolutionary theory as well. It regards fitness and how rapidly and accurately natural selection changes a species to adapt to environmental changes. Many see adaptive efficiency in the original work of Darwin and Wallace, with Dawkins (1976) supporting it. A much studied example of rapid evolutionary adaptation was the spread of darkness in Lepidoptera moths in Britain following the industrial revolution (Kettlewell, 1958). Despite this famous case, most evolutionary biologists continue to somewhat discount the arguments of Eldredge and Gould for dramatically rapid change to the point of discontinuity.

Nevertheless, many evolutionary theorists have argued that important factors can slow the rate of adaptation to evolutionary fitness (Crow and Kimura, 1970; Orr, 2009) such as random drift,. How rapidly a species reproduces is obviously important, so moths can do so more rapidly than large mammals, and many of the latter have become endangered due to their slow adaptability tied to their low birth rates. Using the fitness landscape analysis of Wright (1931) there can be multiple local optima. So even if with rapid adaptation, a location that is not a global optimum may be reached. More subtly, changes in populations themselves can lead to changes in the fitness landscapes themselves. While natural selection generally “works,” it may not necessarily do so rapidly and may not always do so fully optimally. And indeed, the journal generally has published papers that have challenged the harder line version of Alchian’s vision, even as its importance has been recognized.

1. **Simon and Bounded Rationality**

Alchian’s argument was questioned by Herbert Simon (1955, 1957) with his concept of *bounded rationality*. Simon saw limits on rationality due both to imperfect information as well as limits on computational ability. He did not emphasize emotional biases, but these would become a major theme of behavioral economics that he founded and grew out of his foundation of bounded rationality (Rosser and Rosser, 2015; Velupillai, 2019). He argued that procedural rationality, based on heuristics and rule of thumb behaviors underlies *satisficing* conduct, while substantive rationality is impossible (Simon, 1969). Simon saw these bounds as arising both from inevitably incomplete information available to agents as well as more fundamental limits on the computational capabilities of agents, including the problem of incompleteness of logical systems (da Costa and Doria, 2016). Pingle and Day (1996) empirically studied the relative effectiveness of various heuristics, finding that using several is usually superior to using any single one in particular. Curiously, Simon’s bounded rationality ideas influenced management professionals, who saw their practicality, more initially than did economists, who tended to hold on to strong ideas of substantive rationality. As it was, bounded rationality limited the adaptive process Alchian saw operating efficiently while not completely denying it..

A curious predecessor to Simon’s bounded rationality was developed in biosemiotics by von Üxkull (1920), which can be applied directly to adaptive evolutionary situations. Ironically, Simon himself emphasized the role of bounded rationality less in some of his discussion of evolutionary processes (Simon, 1962). In this influential work he saw evolution tied to emergentist views, particularly regarding the question of hierarchy and how new and higher levels of hierarchy emerge. As it is, Simon is generally considered to have initiated the hierarchical complexity approach in general systems analysis. For this bounded rationality performed a more minor function for understanding the nature of relations between the different levels of hierarchies.

Day understood from an early point on in his own considerations of evolutionary adaptive mechanisms (Day, 1975; Velupillai, 2022) the importance of Simon’s view of bounded rationality. He also saw its link with understanding organizational evolution and cited Simon’s (1947) earliest work on this topic. Along with Simon being considered the “father of behavioral economics,” it is not surprising that when Day and Winter founded JEBO, Simon was one of the original 11 associate editors, and he contributed to the journal reasonably early (Simon, 1984), arguing for the need for empirical studies drawing on cognitive psychology literature to understand the details of individual decisionmaking.

1. **Evolutionary Game Theory**

Yet another branch of evolutionary economics came out of biology itself, namely evolutionary game theory (Selten, 1980; Maynard-Smith, 1982; Hofbauer and Sigmund, 1988; Weibull, 1995; Samuelson, 1997). The central concept is that of the *evolutionarily stable strategy* (ESS), developed initially by the evolutionary biologists John Maynard-Smith and George R. Price (1973). It suggests that a large population engages in repeated games with random matching. The games have degrees of evolutionary fitness that result from choices made in the game. Thus, over time one often sees outcomes converging on an ESS, even as players may not be consciously thinking about their choices. Maynard-Smith (1982) presented the hawk-dove game as a classic example, which has a particular mixed strategy that is the optimal approach.

Maynard-Smith posed population dynamics with reproducing animals playing a game with a mixed strategy as an optimal solution that evolves to manifest proportions of the population playing the strategies in the proportions predicted as optimal based on the probabilities of each strategy in the optimal mixed strategy outcome. If conditions do not change, including the evolutionary fitness landscape (Wright, 1931), the outcome will be stable and will persist. In economics to apply this, one must have a *replicator dynamics* to generate the process and outcomes for explaining dynamic processes involving firms or other economic agents over long periods of time.

For economists using game theory this approach offers a possible solution to the problem in game theory of multiple Nash equilibria in many game theory problems. All ESSs happen to be Nash equilibria, even though not all Nash equilibria can show an ESS. Thus ESS provides a way to eliminate some of the possible Nash equilibria for repeated games in many situations (Binmore and Samuelson, 1992; Robson and Vega-Redondo, 1996).

While ESS may not eliminate all such equilibria, it can reduce the number of such possible equilibria and also show how frequently each equilibrium happens over time as a game is played repeatedly. William Sandholm (2010) studied this considering basins of attraction in evolutionary games and how these determine the probabilities for each outcome to occur over time in such repeated games. How frequently the initial conditions in each round of the game puts the players into each basin of attraction associated with a particular outcome is crucial. This approach has become widely adopted as an important and useful approach in game theory, even as it does not solve all of the problems that arise in it. Naturally, JEBO would also become an outlet for papers that developed and pursued this approach as it developed (Selten and Stoeckler, 1986; Hansen and Samuelson, 1988).

1. **Complexity and Evolution**

Finally, we come to the question of evolution as a complex system and thus evolutionary economics as a complex system. Hodgson (1993) has argued in strong terms that evolution is the “ultimate complex system.” How might this be the case? There are several strands of this, some of which involve behavioral economics, with the role of Herbert Simon (1962) especially important in that connection. A deep issue that arises from the complexity approach is that of the spontaneous emergence of order as *self-organization* within evolutionary processes and how such processes may pose an alternative to the more traditional mechanism of natural selection within evolution, with this possibly even more likely to happen in evolutionary economic contexts (Rosser, 2011, 2014, 2021). That economies self-organize is an old idea in economics (Hayek, 1945). Some of this work came out of the Santa Fe Institute (Holland, 1962: Kauffman, 1993 Crutchfield, 1994, 2003) and had strong foundations on models using computer simulations that have links with some of Day’s earliest work (Day, 1963), and he was open to endogenous dynamics in long-run evolutionary economic processes (Day, 1987, 1993b, 1999, 2002, 2004, 2005b: Day and Pavlov, 2001; Day and Walter, 1989).

Kauffman (1993, p. 644) poses the problem sharply in a passage that has drawn criticism by more traditional biological evolutionists who more strongly favor a strongly Darwinian emphasis on natural selection (Gould, 2002), even as he nods at the ongoing role of selection:: “Evolution is not just ‘chance caught on a wing.’ It is not just a tinkering of the ad hoc, of bricolage, of contraption. It is emergent order honored and honed by selection.” But most of this involves the development of hierarchical structures as developed in complex dynamics argued for by Simon (1962). And while Day usually emphasized specific forms of endogenous nonlinear dynamics in his analysis of complex economic dynamics (Day, 1983, 1994, Day et al., 1986), when it came to complex evolutionary dynamics he also ultimately drew on ideas of complexity that can be traced to Aristotle, namely the fundamental idea of the whole being greater than the sum of the parts (Day, 2007b).

Some of these threads have shown up in the journal as well over time. One of the key papers in the mathematical development of how these dynamics can work in Day’s work appeared in the journal (Day and Pianagiani, 1991). More than in other parts of evolutionary economics as well as complexity economics, these models draw from elements across many disciplines, including physics as well as computer science, on top of biology and economics. And the journal increasingly would become an outlet for such more general transdisciplinary approaches (Rosser, 2010). But this was arguably an emphasis of the journal from its very beginning, as Day and Winter (1980) put it in their opening editorial for the journal, the journal was to search “beyond the disciplines’ recognized boundaries.”

1. **Conclusions**

We have seen how Dick Day developed from a rural Iowa background thinking about how farmers decide how much to produce to develop a complex evolutionary vision of the grand sweep of human economic history that recognizes the bounds on the rationality of decisionmakers in this grand progress. Partway through his career, Day co-founded the *Journal of Economic Behavior and Organization* and then led it to publish papers that extended and elaborated the vision that he was developing in his intellectual journey, making the evolution of the journal a conjoined journey with his own. It would become not only a premier journal of behavioral economics but also of evolutionary economics.

On the founding of the journal, Alan Kirman (2022) noted that Day was motivated by his increasing awareness of the empirical unreality of the standard microeconomic theory of decisionmaking, with Day having influenced Kirman himelf to move away from such standard theory (Kirman, 1975). As a predecessor and underpinning to the decision to found the journal, Kirman quotes the Santa Fe Institute physicist Philip Anderson (Anderson, 1972, p. 393):

“The ability to reduce everything to simple fundamental laws does not imply the ability to start from those laws and reconstruct the universe. In fact, the more elementary particle physicists tell us about the nature of the fundamental laws, the less relevance they seem to have to the very real problems of the rest of science much less to those of society…Instead, at each level of complexity entirely new properties appear and the understanding of the new behaviors requires research which I think is as fundamental in its nature as any other.”

The intellectual journey of Dick Day, which involved also poetry as well as philosophical and spiritual elements, accumulated a massive degree of complexity in its evolutionary progress, even as he would push the journal he edited to broader and deeper perspectives that included it presenting various views of evolutionary economics, along with groundbreaking and foundational papers in behavioral economic and game theory. It is appropriate to close this reconsideration of these matters by quoting Vela Velupillai on the ultimate outcome of Day’s own intellectual evolution (Velupillai, 2022, p. 146):

“With elegance and complete confidence he envisaged realistic micro-meso-and macroeconomics as evolutionary and out-of-equilibrium., viable, multiple-phase, dynamical systems, adapting towards, but never reaching, equilibrium, in the short-, medium- or the long-run. This made it natural for him to be a *constructive* economist – but in the sense of Prigogine (1980): he was *becoming* one, from the potentialities of *being* one.”

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