

A New Strategy Theory?

Strategic Management As an Evolutionary Social Science¹

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Much of the theorizing in the strategy field is grounded in economic theory. However, the use of economic theory in strategic management takes a specific and somewhat paradoxical form: strategy research is mostly inspired by anomalies in the paradigm of neoclassical economics. I argue that, in Kuhnian terms, we need a paradigm shift. The neoclassical paradigm is ill-suited for many of the questions that strategy scholars are asking today, which tend to span multiple-levels of analysis and increasingly involve performance criteria other than traditional economic measures. These new questions are better addressed by adopting the emerging evolutionary social science (ESS) paradigm. I detail the central building block of that paradigm, multi-level selection theory (MLS), which offers a general framework to study the interplay of competition and cooperation among interdependent agents. I then specify how an ESS paradigm organized around MLS offers a more realistic and coherent set of assumptions than the neoclassical paradigm for studying the management and governance of value creation and value appropriation. I conclude with a discussion of some of the theoretical and practical implications of grounding strategy research in the ESS paradigm.

¹ This is a first (rough) draft of a paper based on a presentation given at the 3rd ‘Stakeholder Strategy Conference’, held in May 2024 at HEC Paris. Among others, it still lacks adequate referencing. In its current form, the paper does a reasonable job in articulating the ESS paradigm, but is (as yet) short on drawing concrete implications for strategy research.

INTRODUCTION

As the strategic management discipline matured as an academic discipline, it increasingly turned to economic theory to ground its research (Rumelt, Teece & Schendel, 1991). In fact, for as far as the strategy field is a paradigmatic science, strategic management research is grounded in the paradigm of neoclassical economics, of which the central pillar is the model of perfect competition. The role of this model in strategy research is paradoxical, in the sense that much of the progress in strategy theory is based on exploring *anomalies* in the model, such as market imperfections, bounded rationality, and transactions costs (Rumelt et al. 1991; Mahoney & Qian, 2013). Nevertheless, this approach has served the field well, at least as long as theory development was primarily aimed at explaining performance differences among firms that were conceptualized as unitary agents, or as hierarchies that were exclusively focused on maximizing efficiency and shareholder wealth.

However, more recent theory development has taken a different turn. Among others, strategy scholars are increasingly taking a stakeholder view of firms (Amis, Barney, Mahoney & Wang, 2020; Barney, 2018; Klein, Mahoney, McGahan & Pitelis, 2019; Stoelhorst, 2023), and have expanded their horizon beyond traditional economic measures of firm performance (McGahan, 2023), for example to study the role of firms as both possible causes of, and solutions to, societal grand challenges (George, Fewer, Lazzarini, McGahan & Puranam 2024). These developments are putting the continued value of the neoclassical paradigm for strategy research into question, resulting in calls to at least reconsider the value of grounding strategy research in economics (Alvarez, Zander, Barney & Afuah, 2020), if not to abandon the economic paradigm altogether (Bansal, Duran, Kreutzer, Kunish, McGahan, 2024). Such calls raise a fundamental and as yet unanswered question: what could replace the traditional neoclassical economic paradigm as the paradigmatic foundation for strategy research?

The purpose of this paper is to answer this question by proposing the emerging evolutionary social science (ESS) paradigm as a new foundation for strategy research. This paradigm offers a way to understand human behavior and organization as resulting from the interplay of competition and cooperation among interdependent agents at multiple-levels of analysis. I detail the central pillar of this paradigm, the multi-level selection (MLS) framework, and contrast the value of this framework for our understanding of the role of firms in both creating and destroying social welfare with the neoclassical paradigm. I also discuss some of the implications of grounding strategy research in the ESS paradigm, which include a focus on understanding human organizations as solutions to collective problems, and the need for recognizing the central role of morality in solving these problems.

THE ROLE OF NEOCLASSICAL ECONOMICS IN STRATEGY RESEARCH

The development of strategic management into the academic discipline as we know it today was influenced by two strategy summits. The first of these institutionalized the field, while the second consolidated the ‘economic turn’ in strategy. This economic turn established strategy research as an applied branch of economics in the sense that many of the questions that strategy scholars were asking, as well as the answers they were giving, were now contextualized and grounded in terms of economic theory. The most obvious of these was the question that many see as the defining question of the field: how to explain differences in firm performance. The starting point for answering this question was the main pillar of the neoclassical economics paradigm: the model of perfect competition. In this model there is no room for differences in performance: in a perfectly competitive market, all firms make zero economic profit. It follows that explanations of performance differences among firms need to identify the deviations from the model of perfect competition, i.e., the market imperfections, that make these differences possible. This logic informed what were arguably the two major

strands of strategy research that had emerged in the period between the first and second strategy summit: Porter's early work and the early work on the resource-based view.

The special issue in the *Strategic Management Journal* that resulted from the second strategy summit articulated the increasingly theoretical nature of strategy research and elevated economic theorizing as the way to increase the rigor of the field (Rumelt et al., 1991). It did so by pointing out that the type of economic theorizing that could help strategy scholars answer the questions that they cared about (why some firms outperform other firms, and what managers can learn from this to improve the performance of their own firms) proceeded by exploring anomalies in the neoclassical paradigm, like market imperfections, bounded rationality, and transaction costs. The resulting 'love and hate' relationship of strategy scholarship with neoclassical economics is vividly illustrated in the following quote:

“The economist's neoclassical model of the firm, enshrined in textbooks, was a smoothly running machine in a world without secrets, without frictions or uncertainty, and without a temporal dimension. That such a theory, so obviously divorced from the most elementary conditions of real firms, should continue to be taught in most business schools as the ‘theory of the firm’ is a truly amazing victory of doctrine over reality.

This era may, however, finally be coming to an end as the cumulative impact of new insights take their toll. During the past 30 years, and especially during the last 20 years, at least five substantial monkey wrenches have been thrown into what was a smoothly running machine. They are called ‘uncertainty’, ‘information asymmetry’, ‘bounded rationality’, ‘opportunism’, and ‘asset specificity’.

Each of these phenomena, taken alone, violate crucial axioms in the neoclassical model. In various combinations they are the essential ingredients of new subfields

within economics ... transaction cost theory ... agency theory ... evolutionary theory ...” (Rumelt, Schendel & Teece, 1991: 13-14)

The paradoxical result of the economic turn in strategy, then, was that the field became wedded to a paradigm built around a model that no one accepts as an accurate description of markets in the real world. The role of the model of perfect competition is that it serves as a theoretical benchmark against which the real world can be compared in terms of how it *deviates* from the assumptions of the model. Each of the theories showcased in the special issue resulting from the second summit was based on working out the consequences of one or more of these deviations. But none of them went as far as suggesting a full-fledged alternative to the neoclassical paradigm. In that sense, and in keeping with the title of the special issue (“Strategic Management and Economics”) all these theories were indeed *economic* theories that derived their rigor from continuing to take the model of perfect competition and the notion of the efficiency of markets in creating social welfare as their starting point. Yes, the interesting theorizing was based on relaxing one or more of the assumptions in the model of perfect competition (rationality, homogeneous single-business firms, the absence of transaction costs, and static equilibria), but in doing so this approach maintained perfect competition as its theoretical benchmark.

THE NEED FOR A PARADIGM SHIFT

The economic turn in strategy was in many ways a success. It resulted in more rigorous theorizing, and the various theories that strategy scholars imported from economics (Bain-type industrial organization, (cooperative) game theory, transaction cost theory, agency theory, the behavioral theory of the firm, evolutionary economics) gave strategy scholars powerful tools to address the questions that were at the theoretical frontier of the field at the

time, which were mostly related to explaining differences in performance among firms that were treated as either unitary agents, or as hierarchies focused on increasing efficiency, (economic) profits, and shareholder wealth.

However, the approach of building a field upon a collection of theories that each explored the consequences of relaxing one or more of the assumptions in the neoclassical paradigm begat a rather fragmented theoretical landscape. Different questions (Why do firms exist? What are the efficient vertical and horizontal boundaries of the firm? How should a firm's internal organization be structured? How do firms decide? How can firms adapt to environmental change?) required different theories, each with their own particular assumptions. As a result, strategic management theory took the form of a toolkit consisting of theories that were not only making different but often incompatible assumptions about such fundamental things as human behavior, the efficiency of markets, and the nature of firms. The only fundamental thing that connected these theories was that they could all specify how they deviated from the neoclassical paradigm.

There is, in Kuhnian philosophy of science terms, something troubling about a field that derives its progress from a collection of variegated theories that each work out a different subset of anomalies in the neoclassical paradigm. In a Kuhnian world, the gradual build-up of anomalies in a dominant paradigm will ultimately result in a paradigm shift. That this did not happen in strategic management is probably best explained because of a confluence of two things. First, the success of the field in the 1980s and 1990s, fueled in large part by the economic turn, hardly warranted a fundamental overhaul of strategy scholarship. And second, there was no obvious candidate for an alternative paradigm.² Neither of these two conditions holds today.

² Despite claims in this direction from the behavioral theory of the firm and evolutionary economics.

That the first condition no longer holds is illustrated by the steady build-up of scholarship that either questions, or more often outright rejects, economic theorizing as an adequate foundation for strategy research. One theme in this scholarship is that many strategy scholars have long felt uncomfortable with the exclusive focus of traditional economic theorizing on competition and self-interest (Ghoshal, 2005; Ghoshal & Moran, 1995; Ferraro et al. 2005). In fact, economically informed scholarship that conceptualized strategy as being about the interplay of competition and cooperation emerged as early as the late 1990s (Brandenburger & Stuart, 1996; Dyer & Singh, 1998). A second theme is that strategy research increasingly rejected the traditional economic view of the firm as a unitary agent, or alternatively, the view of the firm as a hierarchy consisting of principal-agent relationships in service of shareholders. One manifestation of this was a call for grounding firm-level theories in adequate microfoundations (Felin & Foss, 2005). This call was reinforced by the emergence of a number of new ‘strategic interest groups’ within the Strategic Management Society, which all took a view of the firm as a collection of individuals (the ‘Strategic Human Capital’, ‘Behavioral Strategy’, and ‘Stakeholder Strategy’ interest groups). Each of these interest groups takes a multi-level perspective, in which outcomes at the firm-level are explicitly seen as resulting from the aggregation of the choices and behaviors of individual agents.

A more recent manifestation of rejecting the traditional view of the firm in economic theory is what McGahan has referred to as ‘New Stakeholder Theory’ (2021, 2023). In fact, this strand of research can be seen as incorporating both of the two themes highlighted above (a move away from an exclusive focus on competition and self-interest (Bridoux & Stoelhorst, 2016, 2022), and a rejection of the traditional economic view of the firm (Alvarez et al. 2020; Barney, 2018; Klein et al, 2012; Stoelhorst & Vishwanathan, 2024)), while adding a third: a concern for system level outcomes and societal ‘grand challenges’ (Bansal et al. 2024;

George et al. 2024; McGahan, 2023). As such, NST illustrates why the first condition that maintained the dominance of the neoclassical paradigm in strategy research no longer holds: while the neoclassical paradigm was helpful in answering the questions at the forefront of the discipline in the 1980s and 1990s, the questions that strategy scholars are asking today increasingly are questions for which the neoclassical paradigm offers little traction. NST, in particular, asks questions about problems among *interdependent* agents interacting at multiple levels of analysis. In contrast, the crux of perfect competition is that it models a system of *independent* agents – i.e., agents that can make their own choices free from any constraints other than competition from other free agents.

This brings us to the second condition explaining the prolonged dominance of the neoclassical paradigm: the lack of an alternative paradigm. The remainder of this paper will argue that this second condition also no longer holds. I will show that an emerging evolutionary social science (ESS) paradigm offers a better alternative for addressing the concerns of contemporary strategy theory than the neoclassical paradigm. This is because the central concern of the ESS paradigm is precisely the multi-level interplay between competition and cooperation among interdependent agents that is taking center stage in more recent strategy theorizing. I will develop the ESS paradigm and the potential of its application in strategy research in three steps: I will first establish its basic building blocks, I will then apply these to explaining human behavior and human organization, and I will finally derive implications from an evolutionary understanding of human organization for strategy research.

THE EVOLUTIONARY SOCIAL SCIENCE (ESS) PARADIGM

Evolutionary social science (ESS) is an interdisciplinary strand of research that explains human behavior and human organization as the outcome of an evolutionary process. This

evolutionary process includes, but is not limited to, genetic evolution. While the starting point of ESS is the recognition that humans are a biological species among many other biological species, and that human behavior must therefore be understood as a ‘product’ of biological evolution, ESS explains human behavior and organization as the joint outcome of genetic and cultural evolution – what has been referred to as dual inheritance or gene-culture co-evolution (Henrich, 2004; Richerson & Boyd, 2005; Stoelhorst & Richerson, 2013). Both genes and culture are understood as carriers of adaptive information that has evolved over time through an algorithmic process of variation, selection, and retention. Adaptive information (information about what works in a local context) accumulates over time as it becomes encoded in genes and cultural norms as a result of an evolutionary trial-and-error ‘learning’ process.

In addition to the ‘variation-selection-retention’ algorithm, the ESS paradigm rests on two more pillars: the concepts of ‘ontological continuity’ and ‘ontological similarity’ (Stoelhorst, 2008). Ontological continuity is the concept that there is only one world in which things are causally connected. This means that we should, in principle, be able to establish a causal chain that explains how life evolved from the primeval ‘soup’ to the technologically driven and institutionalized world of the ‘Anthropocene’ that we live in today. One implication of this is that genetic and cultural evolution are continuous, with genetic evolution providing the substrate for cultural evolution (and cultural evolution feeding back on genetic evolution).

Ontological similarity is the concept that complex adaptive systems at different levels of analysis operate on the basis of the same general principles. In particular, the complex adaptive systems defined as CAS-1 systems below evolve as the result of a variation-selection-retention process that takes the form of feeding back the success, or lack thereof, of the system’s interaction with its environment into the ‘codex’ of the system where adaptive information is encoded (Stoelhorst, 2008). In purely genetic systems, this means that

information about what works becomes encoded in the organism's genotype. In cultural systems, this means that information about what works becomes encoded in a cultural system's collective norms, or what we could, by analogy, refer to as its 'symbotype' (Wilson et al, 2014).

The ESS paradigm makes a distinction between two types of complex adaptive systems: CAS-1 and CAS-2 (Wilson et al. 2023; Wilson & Snower, 2024). CAS-1 systems are complex system that are adaptive *as a system* (e.g., a fruit fly; the human body; an insect colony; a firm). CAS-2 systems are complex system composed of agents following their own adaptive strategies (e.g. a population of fruit flies; traffic flows; an ecology; an economy).

One important reason for making this distinction, is that CAS-2 systems may be maladaptive (Wilson et al. 2023). That is, while CAS-2 systems can display the emergent properties typical of complex systems, it is not necessarily the case that CAS-2 systems are stable. In fact, their stability is often undermined by the fact that the agents composing the system follow their own adaptive strategies. One of the crucial questions, then, is how CAS-2 systems, which are not necessarily stable and may self-destruct, can evolve into stable CAS-1 systems.

The workhorse for answering this question is the multi-level selection (MLS) framework. The crux of the MLS framework is that it recognizes that a stable CAS-1 system can only evolve if it can suppress the 'selfish' behaviors of its constituent lower-level agents. This basic insight applies very broadly. For instance, in biology, it applies to understanding the so called 'major transitions' in the evolution of life (Maynard-Smith & Szathmary, 1995). One example is the transition from single cell to multi-cellular life. For multi-cellular organisms to become viable, they need to evolve a way to make cells cooperate. The potential advantages of multi-cellular life are a division of labor and an increase in scale, but these advantages can only be realized as long as the stability of the multi-cellular system is not undermined by the

selfish behaviors of its constituent lower-level agents: the single cells. Cancer is a reminder that such stability can never be taken for granted.

Figure 1 visualizes the basic ontology of the MLS framework. At the lowest level of analysis, there are CAS-1 systems (the non-overlapping circles), which compete with each other for survival. In doing so, they form a CAS-2 system. Let us take single cellular life as our example (also because it forms a close analogy to studying the interaction between individuals and firms, to which we will turn below). At the lowest level of analysis, we have a population of competing single cells. If some of these cells would be able to evolve a cooperative strategy, they can be expected to have an advantage (related to scale and/or specialization) in the competition with other cells. This can eventually result in a stable CAS-1 system, visualized in the middle level of analysis (the overlapping circles). But note that such an outcome (the emergence of a stable type of CAS-1 system), can only result if this new system (in this case, a multi-cellular life form) can effectively suppress the self-interested behaviors of the cooperating single cells. If and when this is achieved, we have a new level of organization. This new level of organization, in turn, will beget its own CAS-2 system of competing multi-cellular life forms.

[Insert Figure 1]

HUMAN ORGANIZATION AS A MULTI-LEVEL SELECTION PHENOMENON

Let us now put the MLS framework and the ontology it implies to work in explaining human behavior and organization. In terms of Figure 1, at the lowest level of analysis, rather than single cells we now have individual human agents. In strictly biological terms, these individuals compete with each other, both for survival and for mating opportunities. Note the parallel to the model of perfect competition, which models interactions among independent

individual agents. Also note that in terms of the ESS paradigm, this is a model of a CAS-2 system. As long as we merely model a system of competing individuals, as the model of perfect competition does, we do not yet have a model that features the middle-level of analysis in Figure 1, where individual agents have formed stable cooperative systems, let alone an explanation for why and how that additional layer of organization would have evolved.³

In close analogy to the evolution of multi-cellular life, the additional layer of analysis in the middle of Figure 1 can be explained as resulting from the advantages that cooperation can afford individuals in the competition with other individuals (be it individuals of the same species, or individuals of competing species like predators). If individual agents can evolve stable higher-level cooperative CAS-1 systems (families, clans, or tribes) this will afford them advantages in terms of scale and specialization in the competition for survival. If and when such higher levels of organization emerge, we have a multi-level selection system.

There is now both competition among individuals, but also competition among cooperative groups of these individuals. In terms of Figure 1, the dynamics of the overall system (a CAS-2 system – as pictured at the top of the figure) are now the result of competition at two interrelated levels of analysis: the level of individual agents pursuing their own interests (at the bottom of the figure), and the level of groups of these individuals pursuing their collective interests (the middle level of the figure).

The crucial question, of course, is how humans were able to evolve stable cooperative CAS-1 systems such as families, clans, and tribes, and progressively more complex CAS-1 systems, such as cities, nation states, firms and other modern organizations. This puzzle, how to explain human cooperation, has been central to ESS since the 1960s. The answer to this

³ Of course, the model of perfect competition *does* feature firms. But these are modeled as unitary agents. That the model at the heart of the neoclassical paradigm features firms without offering an explanation for why they exist was, of course, the entry point for Coase to lay the foundation for transaction costs theory.

puzzle that contemporary ESS gives is nuanced, and starts with a recognition of the various ways in which cooperation can evolve at all. These include kin selection, reciprocity, indirect reciprocity, network assortment, and ‘group selection’ (Nowak, 2006). These mechanisms likely all played a role in the evolution of human cooperation, but the unique nature of human cooperation is best explained by cultural ‘group selection’, or more accurately, multi-level selection in a gene-cultural co-evolution context (Henrich, 2004).

The multi-level selection explanation of human cooperation should be distinguished from an earlier and naïve form of group selection that explained the evolution of cooperation simply in terms of the functional advantages that cooperative behaviors afford a group. What this explanation overlooks is that cooperation at the group level is always vulnerable to being undermined by selfish behaviors of individual group members. Putting aside for a moment the question how cooperative behaviors could have evolved in the first place, consider a group consisting of cooperative individuals. Such a group is wide open to exploitation by selfish group members, who would benefit from the cooperative behaviors of other group members without incurring the costs of cooperating themselves. These selfish members would therefore have an evolutionary advantage in the competition for survival over their cooperative group members, which means that the former’s frequency would increase with every generation. The result would be a dynamic in which the previously cooperative CAS-1 system would be destabilized by selfish members, and would ultimately cease to exist.

The MLS explanation of human cooperation acknowledges and incorporates this dynamic. The MLS explanation is that the emergence, viability, and maintenance of CAS-1 systems always need to be explained in the context of a tension between within-group and between-group competition. Within-group competition (i.e., competition within groups among individuals at the lowest level of analysis in Figure 1) favors self-interested behavior. But between-group competition (i.e., competition between groups in the middle of Figure 1)

favors cooperative behaviors. As summarized by Wilson and Wilson (2007: 345):

“Selfishness beats altruism within groups. Altruistic groups beat selfish groups. Everything else is commentary.” Hence, the MLS explanation of human cooperation is that it emerged because the vector of within-group and between-group competitive pressures favored cooperative behaviors.

This dynamic was reinforced by the emergence of culture. Gene-culture co-evolution theory defines culture as ‘learned behavior’ and sees cultural evolution as a process in which information is transmitted by imitation and instruction (Richerson & Boyd, 2005). This perspective can be rounded out by understanding culture in terms of behavioral rules.⁴ Seen in this way, culture is another carrier of adaptive information alongside genes: cultural transmission passes on behavioral rules that work in the local environment. Groups with behavioral rules that have a better fit with the local environment will be more successful and their norms will spread, either because they replace groups with less adaptive rules, because they assimilate them, or because their norms are imitated by other groups. In the context of between-group competition, these adaptive rules are likely to enhance both within-group cooperation as well as between-group competition.

While this details the ultimate multi-level functional logic of the ESS explanation of human cooperation, it does not yet specify one essential ingredient: the proximate mechanism that operates in suppressing the selfish behaviors of individual group members. That mechanism is something that the neoclassical paradigm simply ignores: humanity’s moral psychology. Our definition of culture in terms of behavioral rules already hinted at how cultural group selection can stabilize cooperation. Behavioral rules may simply be instrumental (how to sharpen flint stone – i.e., behavioral rules related to technology) but they may also be moral

⁴ In line with the definition of culture as ‘the way we do things around here’

(how to interact with others – i.e., behavioral rules related to social living). It is these latter rules that stabilize cooperation.

This is possible because our species evolved a psychology that is sensitive to social norms. In fact, the emerging consensus in moral psychology is that human morality is ‘for’ social living (Rai & Fiske, 2011; Tomasello, 2016). In other words, we can sustain cooperation because we are a moral species whose psychology allows us to suppress our self-interest. This is nicely captured in how economist Samuel Bowles defines ‘moral sentiments’, a term already coined by Adam Smith: “Motives such as altruism, reciprocity, intrinsic pleasure in helping others, aversion to inequity, ethical commitments, and other *motives that induce people to help others more than is consistent with maximizing their own wealth or material payoff.*” (2016: 45 - emphasis added). This definition sets up an explicit contrast between self-interest and morality that aligns with the ESS explanation of the evolution and nature of human cooperation. Human cooperation became possible because we evolved a moral psychology. The various forms of human cooperation are possible because we have moral sentiments that suppress our self-interest.

An immediate implication of this is that in order to understand why human cooperation takes the specific forms that it does, we need to understand the nature of human moral psychology. One crucial characteristic of our moral sentiments is that they evolved to maintain within-group cooperation. That is, we can expect human morality to be particularly good at helping us form cooperative in-groups. But given the fact that the ESS explanation of human cooperation also involves between-group competition pressures as a mechanism to stabilize within-group cooperation, we should also expect human morality to increase between-group competition (Greene, 2014). It is indeed the case that much of our morality tends to be parochial (Bernhard, Fischbacher & Fehr, 2006), and that humans are prone to dehumanizing

individuals that are perceived as members of out-groups (Kteily & Landry, 2022). As a result, our psychology makes it much more difficult to establish between-group cooperation.

So where does this leave us with respect to understanding human organization? One thing to realize is that human organization is always and everywhere a multi-level phenomenon.

When studying it, we should heed the warning that “cooperation at any given scale is vulnerable to disruption from within ... and itself can be disruptive at larger scales.” (Wilson & Snower, 2024: 9). This warning is reinforced by explicitly incorporating the current understanding of human moral psychology into our theorizing. Our psychology makes us relatively adept (if far from perfect) at maintaining within-group cooperation by suppressing our self-interest in interactions with those that we recognize as in-group members, but makes it much more difficult (although not impossible) to establish cooperation with individuals and collectives that are seen as out-group. What this means in terms of Figure 1, is that evolving a cooperative CAS-1 system at the level of the overall system of competing groups (i.e., an entire economy that is adaptive as a system) is going to be vastly more difficult than evolving cooperative CAS-1 systems at the intermediate level (i.e., competing firms that each are adaptive as a system, but whose aggregate behaviors may be maladaptive at the level of the overall economy).

TOWARDS STRATEGY AS AN EVOLUTIONARY SOCIAL SCIENCE

How can an evolutionary understanding of human behavior and organization inform strategy research? Table 1 contrasts the ESS paradigm with the neoclassical paradigm by considering their respective ontologies, units of analysis, behavioral assumptions, and epistemologies.

Together, these four elements pinpoint the essential differences between theorizing about the world in neoclassical or evolutionary terms.

[Insert Table 1]

In the neoclassical paradigm, an economy is modelled as a single CAS-2 system consisting of independent agents modeled as unitary agents.⁵ The interactions among these agents are purely competitive (unitary agent firms compete with other unitary agent firms, and consumers compete with other consumers) as well as mutualistic, in the sense that cooperative exchanges between firms and consumers take the form of market transactions in which the short-term interests of the participating agents are aligned (i.e., both parties to a market exchange derive an immediate benefit). Agents are assumed to be rational and to maximize their self-interest (profit in the case of the firm, and utility in the case of consumers). There is no explicit consideration of the role of knowledge in creating welfare, let alone an explanation of its nature and origins: productive knowledge is encapsulated in a production function that is given and, in perfect competition, the same for all firms.

In the ESS paradigm, an economy is conceptualized in rather different terms. First, the model is inherently multi-level: collective entities like households, firms, and other forms of human organization are explained as the outcome of competitive and cooperative interactions among individual people. In other words, the stability of levels of organization above the individual are not merely assumed. Instead, they are explained as coalitions that are formed because of the advantages in scale and specialization that they offer. At the same time it is also recognized, first, that while these coalitions offer advantages in between-group competition they are vulnerable to being undermined by within-group competition, and second, that while these coalitions are cooperative in the within-group sense they may impose externalities on other coalitions and the overall economy. Figure 1 visualizes these two essential tensions in multi-level systems of human organization: self-interested behaviors may undermine the

⁵ In terms of Adam Smith, firms are not modeled as pin factories, in which specialized workers reap the benefits of specialization in a team production set-up, but as individual butchers, brewers, and bakers. Consumers, while often referred to as 'households', are similarly modeled as individual decision makers.

stability of collectives, and competing collective may impose externalities on the overall system.

The second difference between the neoclassical and the ESS paradigm is that the latter focusses on interactions among interdependent agents. The two essential tensions in the system (self-interest and externalities) put the problem of collective action center stage. At the lower level of analysis, the collective action problem takes the form of a tension between an agent's short-term individual interest and the coalition's long-term collective interest. Stable coalitions have solved this lower-level collective action problem, but as soon as the members of a coalition are no longer able to suppress the natural tendency to pursue their short-term self-interest, the coalition will break down. At the higher level of analysis, the collective action problem takes the form of a tension between a coalition's short-term parochial interest and the longer term system-wide collective interest.

The third difference between two paradigms is that ESS is based on a richer and more realistic set of behavioral assumptions. Human behavior is not just understood as driven by self-interest alone, or what March (1994) refers to as a 'logic of consequences', but also by morality, or what March refers to as a 'logic of appropriateness'. It is this latter logic that allows us to solve collective action problems. Collective action problems cannot be solved by appealing to self-interest, simply because the source of a collective action problem is precisely the tendency for people to pursue their self-interest. ESS recognizes that we are able to solve the collective action problems that emerge when we become interdependent because our species evolved a moral psychology that allows us to also operate in a mode other than the logic of consequences. March summarizes decision making that employs the logic of appropriateness as answering the question "How would a person like me behave in a situation like this?" (March, 1994). This summary nicely captures the normative nature of the decision making that makes us able to solve collective action problems.

The fourth difference between the two paradigms is that ESS makes the nature and development of knowledge an integral part of studying firms and other forms of human organization. Stable CAS-1 systems, such as firms, are carriers of adaptive knowledge that is the result of the variation, selection and retention algorithm operating at the level of a collective (i.e., a coalition of cooperating individuals). As these ‘group agents’ interact with their external environment, collective behaviors that work (‘routines’ and ‘capabilities’) become encoded in socially transmitted behavioral rules. In other words, firms and other forms of human organization, are essentially normative rule complexes. The collective knowledge of what works (both in terms of technology and social interactions) is encoded in these behavioral rule complexes.

In summary, then, the ESS paradigm informs a view of strategy that is multi-level, takes a coalitional view of human behavior and organization, and puts collective action problems and their solutions central. This view of strategy recognizes moral sentiments as the mechanism for solving collective action problems, pinpoints why, where, and how social systems can be maladaptive, and points to the evolution of normative rule systems as the solution to maladaptive outcomes.

SOME IMPLICATIONS FOR STRATEGY RESEARCH

Beyond an idealized two systems view of governance

One implication of the ESS paradigm is that it calls for a fundamentally different view of the world than the stylized view that economic theory has traditionally derived from the neoclassical paradigm. The traditional economic view of human organization is a ‘two system view’ in which economic activities fall into two categories: the provision of private goods by firms and the provision of public goods by governments (Ostrom, 2010). The provision of

private goods is modelled in terms of perfect competition (or deviations from it), while the provision of public goods is modelled in terms of a benevolent, omniscient and omnipotent government (or deviations from it).

In the ESS view of the world, this dichotomy between a purely private system consisting of many self-interested unitary agents (firms and households) and a purely public system consisting of one altruistic unitary agent (the government) is at best a useful theoretical benchmark, but at worst a gross and dangerous simplification of the world we live in. That world rather consists of what Vince and Elinor Ostrom have referred to as a ‘polycentric’ system of coalitions of individuals (Ostrom, 2010). These coalitions take the form of firms and other forms of economic organization, a variety of more or less independent government agencies with interlocking and overlapping jurisdictions, as well as other ‘group agents’ like non-profit organizations, NGOs, and social movements.

The important point is that in the real world, none of these actors is a unitary agent, and that there is no recourse to a benevolent, omniscient, and omnipotent dictator to solve the collective action problems that these lower level agents face. It is rather that all relevant actors in the system, with the exception of natural individuals, are coalitions that each need to solve collective action problems to be able to operate as a collective. For example, firms aren’t unitary agents but coalitions that need to solve the problem of team production and team innovation. And governments aren’t unitary agents but complex amalgamations of different agencies with their own coalitional interests.

To understand how a polycentric system like this functions and how it can deliver its various adaptive and maladaptive outcomes, the ESS paradigm insists on a bottom-up view that starts with individuals, sees these individuals as being reasonably effective (although not perfect) at forming stable within-group coalitions, but much less effective at (although not completely incapable of) forming between-group coalitions.

Why strategy needs morality

A second implication is that we cannot hope to understand firms, how they are managed, when and why they become a source of society's grand challenges, and when and how they can become part of the solutions to these same grand challenges, without explicitly incorporating human morality into our theorizing. Not doing so would mean that we fall prey to the fallacy that Paul Romer vividly captured in a comment when Elinor Ostrom was awarded her Nobel Prize:

“Most economists think that they are building cranes that suspend important theoretical structures from a base that is firmly grounded in first principles. In fact, they almost always invoke a skyhook, some unexplained result without which the entire structure collapses ... A typical conclusion [is] that rules that assign property rights and rules that let people trade lead to good outcomes. What's the skyhook? That people will follow the rules. Why would they respect the property rights of someone else? [Economists] may have in mind something like this: police officers will arrest people who don't follow the rules. But this is just another skyhook. Who are these police officers? Why do they follow rules? ... [Ostrom] pointed us in exactly the right direction ... To make the rules that people follow emerge as an equilibrium outcome instead of a skyhook, [we] must extend our models of preferences ... Economists who have become addicted to skyhooks find it hard to even understand what it would mean to make the rules that humans follow the object of scientific inquiry. If we fail to explore rules in greater depth, [we] will have little to say about the most pressing issues facing humans today.”⁶

⁶ <https://paulromer.net/skyhooks-versus-cranes-the-nobel-prize-for-elinor-ostrom/>. The terminology of ‘cranes’, which offer causal explanations from the bottom-up, versus ‘skyhooks’ which explain things by assuming something that is not itself explained, is, fittingly, from the book ‘Darwin's Dangerous Idea’ by Daniel Dennett, which is about the power of evolutionary explanations.

The challenge of grand challenges

A third and related implication of the ESS paradigm is that our best hope of saying something helpful about the most pressing issues facing humanity today is to be realistic about the nature of human moral psychology. Our social preferences and moral sentiments evolved in a context of within-group cooperation and between-group competition. As a result of this, we are much more effective at solving the collective action problems among individuals within a cooperative in-group (for instance, team production and team innovation) than we are at solving the collective action problems among collectives (for instance, the imposition of externalities by one group on another), because the members of one collective are likely to perceive the members of the other collectives as out-group. While solving team production problems ‘merely’ involves overcoming our individual self-interest, solving the problem of externalities involves overcoming a parochial collective interest. The former problem can be solved by our moral sentiments suppressing our self-interest, but the latter problem involves a moral dilemma that pits parts of our morality (e.g., in-group loyalty) against other parts (e.g., universal justice).

CONCLUSION

As the strategy field is increasingly turning to questions that are difficult to answer on the basis of the neoclassical paradigm, the need for a paradigm shift is beginning to be recognized. I have argued that the emerging evolutionary social science (ESS) paradigm offers a compelling alternative paradigm for strategy research. In contrast to the neoclassical paradigm, the ESS paradigm is inherently multi-level, takes a coalitional view of human organization, and puts collective action problems center stage. Moreover, and perhaps most importantly, it highlights morality as the key mechanism to solving these collective action

problems. This not only helps understand firms and other forms of human organization as complex adaptive systems that have solved the collective problems among their members (CAS-1 systems), but also why the outcome of competition among these firms (and other organizations) at the level of the overall economic system (a CAS-2 system) may be maladaptive. Because human morality evolved in the context of the need to increase within-group cooperation in the face of between-group competition, we are much better at solving the lower-level collective action problems among individual agents than we are at solving the higher-level collective action problems among collectives, or ‘group agents’. While this implies a hopeful conclusion for a stakeholder view of managing firms, it implies a more worrying conclusion for facing up to societal grand challenges. By providing conceptual clarity on such fundamental matters, the ESS paradigm holds the promise of a new strategy theory that can not only help managers run more responsible firms, but that also can inform policy makers about the governance rules and systems that may help make the capitalist system as a whole more sustainable.

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TABLE 1: A comparison of the two paradigms

	Neoclassical	Evolutionary
<i>Ontology</i>	Single-level	Multi-level
	CAS-2	CAS-1 and CAS-2
<i>Unit of analysis</i>	Competition	Competition and cooperation
	Independent 'unitary agents'	Coalitions of interdependent agents
<i>Behavioral assumptions</i>	'Logic of consequences' -Self-interest -Rationality	'Logic of appropriateness' -Self-interest and moral sentiments -Bounded rationality
<i>Epistemology</i>	?	Knowledge is in the rules of the system

FIGURE 1: The ontology of the ESS paradigm

A basic ontology of interdependent systems

