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A BASIC THEORY OF INHERITANCE:**HOW BAD PRACTICE PREVAILS**

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Running head: How bad practice prevails

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Research Summary

This paper develops an inheritance theory explaining the diffusion and persistence of detrimental management practice. Received wisdom, in both management theory and practice, would suggest that a practice that lowers the life expectancy of adopting firms, over time, will vanish because it puts those firms at a competitive disadvantage. In this paper, I challenge this view. I develop a conceptual model that details how a practice that lowers the survival chances of adopting organizations may still spread and continue to exist across a population of firms. I propose that a combination of three basic conditions is sufficient to bring about this phenomenon: if the practice is somehow associated with success, if there exists causal ambiguity, and if the rate of its diffusion is high compared with the rate at which it accelerates firms' demise, the practice may continue to thrive and become a widespread and persistent feature in an industry. A pivotal conceptual insight is that the endurance of particular management practices and strategies is not merely a corollary of the competitiveness of the organizations that use them but that they have fitness levels of their own.

Managerial Summary

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All organizations have “best practices”: habits that they have picked up in the past or mimicked from others. Managers often believe that these must be the best ways of doing things, because otherwise market forces would have eliminated them. The theory in the paper explains why this belief may be wrong. Some enduring practices may be harmful, without managers realizing it, because it is not necessarily the most optimal practices that survive (just like harmful viruses persist in nature). As a corollary, the paper discusses how the identification and cessation of detrimental practices can form a new source of and way to understand innovation.

INTRODUCTION

The traditional view in economics and the social sciences in general has been that “efficient firms grow and survive; inefficient firms decline and fail” (Jovanovic, 1982: 649). Through competition, market forces are thought to select out those firms with traits that make them less efficient (Alchian, 1950; Friedman, 1953). However, various observers of business have argued that inefficient practices seem to persist (e.g., Meyer and Zucker, 1989) and that they even appear to be widespread (Carroll, 1993). For example, detailing—face-to-face sales and promotion—is a key and very costly strategic practice in the pharmaceutical industry—it is estimated, for instance, that drug companies spend twice as much on detailing and free samples as they do on R&D (Gagnon and Lexchin, 2008). Research by Mizik and Jacobson (2004: 1714), however, suggested that the practice is ineffective, which led the authors to wonder “why . . . firms persist at engaging in a practice that has negative returns.”

Different explanations have been offered in our literature as to why inefficiencies do not always get weeded out. Some explanations have focused on conditions in the firms’ selection environment, arguing that if firms with lower fitness levels are able to survive, it is because of “light competitive pressure” (Leibenstein, 1966), “a loose selection environment” (Carroll, 1993), or an otherwise “munificent demand environment” (Van Witteloostuijn, 1998), possibly exacerbated by a weak regulatory regime and ineffective institutions (Button and Weyman-Jones, 1992; Gomes and Jehiel, 2005). Others have sought to explain the persistence of inefficiencies through the notion that it is not just efficiency that drives the selection of firms; institutional theory, in particular, has argued that organizations may adopt strategies, structures, and also cultural elements for reasons of isomorphism (Meyer and Rowan, 1977; DiMaggio and Powell, 1983; Zucker, 1987). A practice may persist not because it increases efficiency but because it gives firms legitimacy and political influence and, along with these, access to valuable resources, such as customers, employees, or financial capital (see also Nelson and Winter, 1982; Carroll and Harrison, 1994; Barnett, 1997; Chang and Wu, 2014), which enhances its survival.¹ In all of these studies, however, practices that lower an organization’s chances of survival are expected to gradually die out and disappear.

This paper takes a different—and arguably more radical—perspective. I argue that inefficient practices that lower a firm’s chances of survival can still persist. The prime reason for this, I argue, is that many aspects of a firm’s strategy and organization are inherited, either from the firm’s own past or from others. Core strategic decisions, in terms of what formats to offer (Greve, 1996; 1998), what activities to perform (Haunschild, 1993; Stan and Vermeulen, 2013), and how to conduct operations (Guler, Guillén, and Macpherson, 2002), have been shown to spread via a process of contagion. As a consequence, I contend, the survival of particular strategies and practices depends only partially on the survival of the firms themselves. Characteristics of the practices and the process of their inheritance also matter. A key corollary of this conceptualization is that management practices and strategies have fitness levels that are related to but also distinct from the fitness levels of the practicing organizations.

Following this line of argument, this paper outlines a basic theory describing the processes of inheritance and survival. The implication of the theory is that, in extremis, even universally harmful practices can spread and persist. To build a theory of inheritance, I begin my analysis with a hypothetical practice that is unambiguously detrimental, in the sense that it lowers the life expectancy of all adopting organization at all points in time. Of course, certain management practices may benefit some firms while being detrimental for others, under different circumstances, or at different points in time. Hence, an indiscriminately detrimental practice represents an extreme scenario. Yet, to build the theory, the central research question of this paper is whether even under such extreme circumstances a practice can still diffuse and persist.

I identify three basic conditions under which this is feasible: first, the practice needs to have a spurious association with success, and I discuss several potential sources of this. Second, decision-makers have to experience causal ambiguity about the practice’s true long-term effects, which can be exogenous but also endogenous to the practice itself. Third, the rate of the practice’s diffusion across firms in the industry must be relatively high compared with the rate at which it terminates adopting organizations. Put differently, the practice spreads quicker than it kills. I elaborate on these three conditions to clarify the characteristics of persistent harmful management practices and the

circumstances under which they are most likely to occur, and illustrate it with an example from prior research (of the practice of patient selection in in-vitro fertilization [IVF] clinics in the UK) and a simulation model. Finally, I discuss extensions and implications for Organization Theory and Strategic Management in particular.

BACKGROUND

Definitions. In the theorizing, I adopt an “organizational practice” as the unit of analysis. I define a practice as a set of formal or informal rules of behavior, shared across people in an organization, that can be learned and passed on. Thus, under this definition, organizational practices include various types of strategic choices, including what activities to perform and what not to (e.g., Reitzig and Wagner, 2010; Stan and Vermeulen, 2013), issues of organizational design (e.g., Burns and Wholey, 1993), and strategic positioning (e.g., Greve, 1998). They also include formalized management techniques, such as quality circles (Abrahamson and Fairchild, 1999), and traits of organizational culture, such as the practice of working long hours in many corporate-finance divisions in the banking industry (Chatman and Jehn, 1994). For the purpose of my argument, I define a bad practice as one that has a negative influence on the survival potential of an organization compared with a similar organization that does not adopt it. Thus, the life expectancy of the adopting organization would be higher if they had not implemented it.² Hence, under this definition, a practice that makes a firm less efficient but that enhances its survival, for instance through increased legitimacy (DiMaggio and Powell, 1983) or market power (Carroll and Harrison, 1994), is not considered a “bad practice.”

In the theory, I adopt a practice as the unit of analysis, rather than related concepts used in previous studies in Management applying an evolutionary perspective, such as routines (Nelson and Winter, 1982; Pentland and Feldman, 2005), competence elements (McKelvey, 1982), strategic initiatives (Burgelman, 1991; Lovas and Ghoshal, 2000), or memes (Dawkins, 1976; Weeks and Galunic, 2003). Although these various concepts partially overlap, I use the conceptualization of practices to emphasize that, at least in this paper’s theorizing, organizations have volition and are able to choose whether to adopt or discard them.³ Hence, I theorize about conscious practices, rather than

unconsciously practiced organizational processes, although it would perhaps be possible to extend the theorizing to these various other concepts or levels of analysis.

Persistence has been described to occur when firms or practices continue “to operate for nontrivial periods of time” (Carroll, 1993: 247). I define the persistence of a practice to occur when, *ceteris paribus*, it continues to exist, even while firms that have adopted it are failing. A practice could potentially still disappear for exogenous reasons, because it grows out of fashion, is declared illegal, or perhaps falls victim to technological progress. However, the *ceteris paribus* condition entails that the cause of its disappearance is not the heightened failure rate that results from the practice’s adoption. Hence, all else equal—fashion, legislation, and technological progress—persistence implies that the practice continues to exist.

Inheritance. I build on the view that organizations inherit practices from their own past but also from others. From various disciplines, it has been argued and shown that organizations often imitate one another (for an overview, see Lieberman and Asaba, 2006). The prime condition under which this occurs is uncertainty. When faced with uncertainty, organizations look around themselves to examine what others are doing (Cyert and March, 1963; Haunschild and Miner, 1997; Levinthal, 1997). They don’t observe all firms, but a limited number of companies with whom they are in close contact (Greve, 1996, 1998). Consequently, when a certain new practice or innovation is introduced in an industry, not all firms are simultaneously exposed to it; instead, it diffuses progressively from one firm to the next (Abrahamson and Rosenkopf, 1993; Rogers, 1995). Therefore, diffusion has often been modeled as a process of social contagion, in which organizations adopt practices from other firms that are similar, that occupy a comparable social or geographical position, that are direct competitors, or with whom they have shared corporate ties or third-party contacts, such as board interlocks (Galaskiewicz and Burt, 1991; Haunschild, 1993; Hedstrom, 1994; Davis and Greve, 1997; Greve, 2000; Hsieh and Vermeulen, 2014). I ask whether it is logically possible for a practice that decreases the life expectancy of the firms that adopt it to spread and continue to persist in an industry.

NECESSARY CONDITIONS

Below, I argue that under a specific set of conditions—displayed in Figure 1—a detrimental practice may not only spread but also become a persistent feature of an industry (e.g., Mizik and Jacobson, 2004; Stan and Vermeulen, 2013): 1) the practice has some spurious association with success; 2) there exists causal ambiguity about its true, long-term consequences; and 3) the rate of its diffusion is high relative to the rate at which it causes firms to fail.

—Please insert Figure 1 about here—

The practice is associated with success

The first condition for a detrimental practice to be adopted by firms is that organizations erroneously believe the practice to enhance their chances of survival,⁴ because it is somehow associated with success. This association can potentially be caused by a variety of mechanisms. I discuss four: the process of replication and simplification, the idea that the practice may have been transferred from a different context in which it did lead to success, the notion that the originating firm was already successful beforehand, and the existence of short-term benefits. These mechanisms can be complementary, in that the presence of only one of them may be sufficient to cause a practice to be associated with success, yet they may also occur concurrently.⁵

A harmful practice may be associated with success as a result of the process through which it originated, namely *replication and simplification*. That is, a bad practice may emerge through the transformation of an initially useful practice. If that original, useful practice is quite complex, it is possible that many of its subtleties will be lost in the process of imitation. More complex practices are usually more difficult to copy because they consist of more layered, diverse elements and relations, which may often contain tacit knowledge that is difficult to codify (Polanyi, 1967). As a result, imitating firms may imperfectly or partially copy a practice, for instance by mimicking only those elements that are observable. For example, there is evidence that this happened when Western firms adopted practices of Total Quality Management (TQM) from their Japanese counterparts (Zbaracki, 1998; Clegg, Ibarra-Colado, and Bueno-Rodriguez, 1999). It also echoes the view of Winter and Szulanski (2001), who argued that imperfect replication of a complex practice with tacit components

can inadvertently yield negative performance consequences.

One way that imperfect replication can occur is when organizations mimic the consequences of the practice, rather than the practice itself. Research on the biases in cultural transmission (Richerson and Boyd, 1989) suggests that people often focus on obtaining the symbols of success rather than copying the behavior that led to the success in the first place. The expended focus and efforts, however, might undermine the chances of success.⁶ For example, in many Western societies, owning a large car is a symbol of success: success has enabled this person to buy a large car. However, focusing all of one's resources and efforts on obtaining a large car may actually decrease one's chances of becoming successful. The symbol may originally have been the result of success; pursuing the symbol rather than the success itself may be harmful. Similarly, TQM often enabled Japanese firms in the 1970s to cease end-product controls. However, the abolishing of end-controls by imitators, without copying the preceding quality processes, may very well have had a detrimental influence on adopting firms (cf. Hackman and Wageman, 1995).

Thus, the process of transfer and imitation may inherently transform a complex practice into a much simpler one (cf. Ansari, Fiss, and Zajac, 2010). In turn, the transferability of this “simple version” of the practice will be much higher than that of its original, complex form, which will cause the new format to be copied abundantly, although it now has detrimental consequences in the long run. Moreover, managers who championed the adoption may subsequently be inclined to exaggerate any amenities in their interpretation and communication to others, as for instance demonstrated by Zbaracki (1998), thus keeping afloat the “myth” of a good practice.

A second reason why a detrimental practice may be associated with success is *transfer from a different context*—namely a different population (i.e., industry, national, or institutional setting) or period—where it may have had a beneficial effect. Research by Benner and Tushman (2002) on ISO 9000 standards, for example, suggested that the standards can be beneficial when adopted in a stable industry but may be harmful in a more dynamic one, where adoption may reduce exploration to inappropriate levels, harming a firm's chances of long-term survival. Firms in industries for which the practice does more harm than good may nevertheless associate it with success because it migrated

from a context in which it earlier had led to beneficial results. Similarly, a practice may have been useful at one time but become harmful at a later stage. Once industry conditions have changed, it is possible that the practice has become suboptimal yet continues to persist and be adopted by newcomers in the industry due to its former association with success. The practice has become part of the heritage of the industry (e.g., Ody-Brasier and Vermeulen, 2014) but may have become inefficient.

Furthermore, a harmful practice may be associated with success because *it originated in a firm that was already successful* before implementing it, or even because the organization was among the practice's early adopters. Prior research has shown that organizations are inclined to imitate the actions of other companies that stand out as successful (Haveman, 1993; Haunschild and Miner, 1997), even when it is clear that the newly developed practice is not the cause of the company's success. For instance, some years ago, many firms were inclined to imitate the practices of GE, for example when it was one of the early adopters of Six Sigma programs. Yet, this does not mean that every new practice developed by such an organization is actually positive. The long-term consequences of Six Sigma (Benner and Tushman, 2003) and other GE programs and processes (O'Boyle, 1998) are ambiguous, yet firms were inclined to imitate them because they regard this initiator / early adopter as a "role model" (Haveman, 1993).

Finally, firms may erroneously believe that a particular practice increases their chances of success and survival because it has *short-term benefits*; that is, the practice does create real benefits in the short run. Its cumulative effect may be negative in the long run—in that the long-term disadvantages outweigh the short-term benefits with respect to their total effect on a firm's life expectancy—but its adoption leads to an immediate (temporary) upsurge in fitness and performance (for empirical examples, see Guthrie and Datta, 2008; Datta *et al.*, 2010; Reitzig and Wagner, 2010; Stan and Vermeulen, 2013). Usually, short-term benefits of a practice, compared with long-term detrimental effects, are easy to observe, which makes people believe the practice is a good one.

An association with success is a necessary condition for a bad practice to persist because firms would not adopt it without it. As should be noted, firms sometimes also adopt practices they do not believe will directly enhance their effectiveness. That may be because external actors prompt them to do

so (cf. Meyer and Rowan, 1977; DiMaggio and Powell, 1983). For example, large buyers may require their suppliers to have an ISO 9000 certification. An aspiring supplier may then choose to adopt the practice, although it may not believe that it actually enhances its operational efficiency, but because it tries to secure the account. Unknowingly, the long-term harmful consequences of implementing ISO 9000 (Benner and Tushman, 2002), however, might outweigh these indirect benefits. Similarly, firms may adopt a practice just because many similar or nearby others have adopted it, in order to gain legitimacy (Zucker, 1987; Bikhchandani, Hirschleifer, and Welch, 1992). In this paper's terminology, it is these indirect, institutional benefits—of enhanced access to resources or customers, status, or legitimacy—that provide the practice with its necessary association with success, as the firm erroneously perceives that it would be worse off without it.

Causal ambiguity

As argued above, a detrimental practice must somehow be associated with success if organizations in an industry are to develop the perception that it is beneficial. This, however, also implies the necessary presence of another condition, namely causal ambiguity: the practice can only be perceived as beneficial if organizations are unaware of its true long-term harmful consequences. Moreover, it is causal ambiguity that prevents organizations from learning that the practice is detrimental, either from their own experience or that of others around them.

Lippman and Rumelt (1982: 420) discussed causal ambiguity as “ambiguity as to what factors are responsible for superior (or inferior) performance.” It concerns a lack of understanding of and insight into the causal connections between actions and results. Reed and DeFillippi (1990) emphasized the role of tacitness and complexity in the creation of causal ambiguity. Tacitness refers to the implicit, intangible components of a firm's competency that are based on skill and experience, and which are difficult to codify and transfer (Polanyi, 1967). Complexity concerns the interconnectedness between the different components of a particular process. Owing to these factors, actors may be able to observe firm performance, as well as the actions that firms undertake, but not understand which actions lead to superior and which lead to inferior performance. Hence, it is not

the practice itself that is tacit and complex—probably to the contrary, as explained below—but the drivers of the output variable that are.

Consider again, for example, the process management system ISO 9000 and its negative effect on innovation (Benner and Tushman, 2002, 2003). ISO 9000 itself is relatively easy to observe and imitate—also because it is formalized in various handbooks, aided by a certifying organization. However, the process of innovation and the determinants of its success are complex and tacit (King and Zeithaml, 2001). Even though firms may be able to observe their innovation output, they may not fully understand the various processes driving it.

Two sources of causal ambiguity can be relevant in the spread and persistence of harmful management practices. The first is what I call *exogenous causal ambiguity*, the sheer number and the uncertainty of factors that determine a firm's performance in a particular environment (Mosakowski, 1997). Firms will observe their poor performance but, due to exogenous causal ambiguity, find it hard to discern that it is the harmful practice that is causing it.⁷ In addition, characteristics of the harmful practice itself may contribute to ambiguity. I refer to this as *endogenous causal ambiguity*. The fact that some harmful practices lead to an initial increase in firm performance, for instance, makes it more difficult for decision-makers to construct what Mosakowski (1997) refers to as accurate causal maps. For example, repeated cost-cutting (Van Witteloostuijn, 1999) might lead to a short-term increase in financial performance due to lower costs, but the more-difficult-to-observe, longer-term decreases in employee retention, morale, and commitment might outweigh these short-term benefits (Guthrie and Datta, 2008). Hence, the short-term positive consequences of the practice lead managers to make incorrect inferences about its overall usefulness.⁸

This also points to a second factor that contributes to endogenous causal ambiguity, namely a long time lag between the adoption of the practice and the occurrence of its detrimental influence, which makes it more difficult to create accurate causal maps. I call such delays a practice's *incubation time*—the maturation period of its detrimental effects. It can cause suboptimal behavior to persist (Serman, 1989) because the substantive period during which a firm with the practice does not experience detrimental effects may lead it to make incorrect inferences about the practice's overall

use. Accordingly, Repenning and Sterman (2002) showed how managers' attributions of the cause of poor organizational performance could be substantially distorted by time delays between their actions and their results.

Incubation time can also lead to superstitious learning from others (cf. Levitt and March, 1988). Organizations update their causal maps based on their observations of other firms in their industry. If a practice has a long incubation time, however, they will often perceive information they gather from observing others to be ambiguous. Managers will observe that quite a few of their competitors that have adopted the practice are doing fine, or may even have a higher success rate than those without the practice (owing to short-term benefits). Especially when there is also exogenous causal ambiguity present in the industry, and hence there are also ample firms without the practice that fail, this may lead them to continue to believe, erroneously, that the practice is beneficial.⁹

The rate of transfer is high relative to the rate of termination

A practice's association with success and causal ambiguity are two conditions for firms to unknowingly adopt a detrimental practice, and not discard it. This is not sufficient, however, for the practice to continue to spread and also persist in an industry. Competitive forces could still weed out underperforming firms, and the practice with them. For the practice to survive, the rate of its diffusion must be higher than the rate at which adopting firms fail. Simply put, if the original firm with the practice "dies" before the next organization has adopted it, the practice will die with it. Yet, if the practice is copied by another organization before the initial firm succumbs, the practice survives. When the rate of adoption outweighs the firms' probability of dying, the practice will become more frequent within the population. Thus, a bad practice may continue to thrive and spread if it is passed on to other organizations at a higher rate than that at which it terminates them.

Researchers in cultural anthropology examining the diffusion and persistence of detrimental cultural practices (such as footbinding in China, or female circumcision in the Sudan) based their models on insights from epidemiology (Cavelli-Sforza and Feldman, 1981; Boyd and Richerson,

1985). Hence, harmful rituals are thought to spread like a virus. Just as extremely lethal viruses cannot survive, because they quickly kill their host, cultural practices that quickly cause an adopting tribe to die out cannot spread. Practices that are slow to be copied can also not diffuse. In sum, a necessary condition for diffusion is that “the practice spreads quicker than it kills.” Similar conditions apply to harmful management practices.

See the right-hand side of Figure 1: practice adoption implies that an adopting organization becomes relatively more likely to fail, which in turn lowers the survival chances of the practice. However, the direct effect of adoption on the survival chance of the practice is positive. When, aggregated to the industry level, the latter direct effect on practice survival outweighs the former indirect effect, the management practice persists. The spread of a practice that does diffuse may eventually reach some “steady state,” since the number of firms that do not have the practice and that thus can still potentially be “infected” decreases, while the number of firms that are dying as a consequence of the practice increases. When the rate of termination approaches the rate of diffusion, the practice cannot become more widespread (Cavelli-Sforza and Feldman, 1981). At this point, the practice has become a stable, persistent feature of the industry.

Whether a practice spreads quicker than the rate at which adopters are terminated depends on characteristics of both the practice and the business environment. Some environments are more conducive to the transfer of practices in general. The presence of dense social networks (e.g., through board interlocks, alliances), ample competitive ties between firms, high levels of personnel movement between firms, and the existence of professional associations have all been shown to foster diffusion (Galaskiewicz and Burt, 1991; Abrahamson and Rosenkopf, 1997; Davis and Greve, 1997; Rosenkopf and Almeida, 2003; Song, Almeida, and Wu, 2003; Hsieh and Vermeulen, 2014), because behavioral practices spread through interorganizational contacts. Furthermore, various studies have shown that geographic proximity is a prime determinant of transfer between organizations (Kogut and Zander, 1992; Zander and Kogut, 1995; Almeida, 1996; Almeida and Kogut, 1999; Guler *et al.*, 2002). Such environments are also conducive to the spread of good practices, but because a harmful practice benefits particularly from rapid diffusion—since the rate of diffusion needs to be higher than the rate

of termination—dense environments with abundant interfirm contacts are the most likely breeding grounds for bad practice. Third-party carriers, such as management consultants, may aid further diffusion.¹⁰

The rate of diffusion is also influenced by characteristics of the practice itself. For the rate of diffusion to be high—high enough to outweigh the rate at which adopters fail—a practice must be simple enough to be copied easily (cf. Abrahamson, 1997). Therefore, it must be relatively straightforward to imitate. As previously discussed, with respect to the condition that a harmful practice be associated with success, it may be an imperfect copy of a much more complex and useful predecessor, unwittingly created by initial imitators through a process of replication and simplification. As a result, a detrimental practice will likely consist of relatively few, easily observed elements. ISO 9000, as discussed before, is standardized and explicitly codified in handbooks, aided by the existence of a professional association to foster rapid adoption and diffusion (Guler, Guillén, and Macpherson, 2002). Of course, useful practices share some of these characteristics as well, but harmful ones cannot exist without them. Simplicity, to aid the speed of adoption, is needed to outweigh the depressing effect of increased mortality among adopters; a harmful practice which spreads and persists cannot be very complex and difficult to copy, because if it were, it would die out.

ILLUSTRATIONS

Qualitative illustration

Research by Stan and Vermeulen (2013) on the in-vitro fertilization (IVF) industry in the United Kingdom provides an example of a strategic practice persisting in spite of leading to a competitive disadvantage for adopting firms. All IVF clinics in the UK are legally obliged to publish their success rate—the percentage of births that result from the treatment—in what is informally referred to as the industry’s “league table.” Stan and Vermeulen documented how many clinics adopted the practice of admitting only patients with a good prognosis and selecting out difficult patients with ex-ante more challenging underlying medical conditions. The clinics did this to increase their relative ranking in the table, or, as one interviewee—a nursing manager—explained: “They don’t want these patients to

dilute their success rates.” Adopting this practice of selection led to a clear and immediate increase in a clinic’s success rate.

However, in the long run, not treating difficult patients deprived these organizations of valuable opportunities for organizational learning, which negatively affected their performance. These long-term disadvantages outweighed the short-term gains. The estimated learning curves of clinics with relatively low versus high proportions of hard-to-treat patients are depicted in Figure 2. It shows that the clinics that treat a relatively high number of difficult patients start out with lower success rates, but eventually, after several years, end up having significantly higher ones. That is because clinics that only treat simple cases hardly learn; their learning curve is almost flat.

—Please insert Figure 2 about here—

This example illustrates the three aforementioned conditions for a harmful strategic practice to spread and survive—and how they are complementary and each necessary conditions. The practice became *associated with success*, due to its immediate performance-enhancing effect. As one doctor and director of IVF commented: “The best way to move yourself up the table is to treat prognostically the better group of patients.” This became well known throughout the industry or, as Stan and Vermeulen (2013: 796) put it: “an open secret.” It is this association with success that made many other clinics adopt it, too.

In addition, there was *causal ambiguity*, which led clinics to remain unaware of the practice’s harmful consequences. The source of this ambiguity was partly *exogenous*. This is because IVF as a procedure, with an average success rate between 20 and 30 percent, is quite complex, and many factors influence its outcome. As a doctor and professor of reproductive medicine explained: “IVF is not a flat process. It’s not one product coming with a single process that goes through. There are many, many layers of complexity.” Furthermore, causal ambiguity was also partly *endogenous*, brought about by characteristics of the practice itself. This is because its harmful long-term effects—of limited opportunities for learning—materialize only after some time. Typically, the two learning curves depicted in Figure 2 cross at about 100 cases (which, for an average young clinic, corresponds to about one year of operation). This implies that it takes several years until the clinics that do treat

difficult patients begin to significantly outperform those clinics that selected out ex-ante difficult patients. Such a time lag (cf. Repenning and Sterman, 2002), as discussed, makes it difficult for managers to grasp the relationship between the cause (the practice of selecting) and its effect (lower long-term performance).

These two conditions—an association with success and causal ambiguity—would be sufficient for an IVF clinic to adopt and not discard this particular detrimental practice. However, because, as one interviewee put it, “there is fierce competition between clinics,” competitive forces could still make the practice of selection disappear by weeding out those firms that use it, if not for the third condition: *a high rate of transfer of the practice*, relative to the rate of firm failure. The practice of patient selection can indeed be transferred easily, owing to its observability and relative simplicity. It is based on a set of quite straightforward demographic patient characteristics and standard medical tests, which makes it easy to imitate. A doctor explained: You “look at their history . . . maternal age . . . how many times has the patient attempted IVF in the past . . . [and] run a panel of hormones to get an idea of [whether] the ovary still has plenty of eggs.” A consultant gynecologist complemented: “You simply take out the women who have a low ovarian reserve.” Diffusion was further aided by exposure of the practice through medical conferences, journal publications, training, and the mobility of personnel between clinics (cf. Almeida and Kogut, 1999; Song *et al.*, 2003).

Thus, the practice spreads easily, but its impact on the rate of failure is relatively slow: as shown in Figure 2, ultimately, the success rate of clinics that selected quite heavily was just a few percentage points lower than clinics with relatively little selection. Moreover, as discussed, this effect takes several years to materialize. Thus, the practice spread quicker than it made firms fail, and it continues to persist.

Quantitative illustration

Setup of the model. To further illustrate the conditions and relationships discussed above, I also developed a simulation model (details of which can be found in the appendix) following the various relationships as specified in the preceding sections. It models an industry with 1,000 firms in which a

practice, randomly assigned to one firm, spreads over time through contagion (Haunschild, 1993; Hedstrom, 1994). The model is updated over multiple rounds, representing time periods. A firm is set to be more likely to adopt the practice the more that firms in its vicinity have previously adopted it. Hence, contagion is dependent on the Euclidean distance between firms, because organizations monitor and are most likely to imitate their nearest competitors (Baum and Singh, 1994; Garcia-Pont and Nohria, 2002). Entry into the industry is set at 1.5 percent of the original population size (i.e., 15 firms), plus a variable rate of .25 for every firm that exits, such that without the harmful practice industry size remains constant, and all increases or decreases in population size are due to the introduction of the practice.¹¹

In the simulation, all firms have a probability of going out of business set at 2 percent each period. However, after adopting the practice, for the first 2.5 years (10 periods) this probability is reduced to 1 percent; that is, during this incubation period the practice offers short-term benefits. However, after the 2.5 years, the probability of dying increases significantly, to 32 percent. Note that under these settings, the life expectancy of a firm without the practice is 12.3 years whereas the life expectancy of a firm with it is merely 5 years.¹² Hence, per this paper's definition of a bad practice, the practice is clearly detrimental, in that the life expectancy of organizations with it is lower than for those without. Once they have adopted the practice, firms in the simulation can also discard it: the more firms with the practice that go bankrupt in the focal firm's vicinity, compared with firms without the practice that continue to survive, the more likely the firm is to abandon it, because it comes to understand the practice as detrimental.

—Please insert Figure 3 about here—

Output. Figure 3 displays the results of the simulation, with the number of firms on the vertical axis and time periods (in quarters) on the horizontal axis. The top graph of the figure shows that, after being introduced to one firm in the industry, the practice begins to diffuse. Within 7 years virtually all firms in the industry have adopted it. The size of the industry, in terms of the number of organizations in it, starts to diminish, owing to bankruptcies. After about 10 years (40 periods) the industry enters a steady state in which there are fewer firms in business than before, but in which the

practice is exercised by the majority of firms, as a persistent feature of the industry.

The other graphs give insight into some of the processes underlying this result and how they relate to the theory outlined earlier in this paper. The second and third graphs display entry into and exit from the industry. During the first few years after the introduction of the practice, the number of entrants that prefer to establish themselves with the practice in place increases in correspondence with its popularity, but when adopters gradually start failing and the industry thins, there are roughly as many entrants with as without the practice. The fourth output graph indicates that, simultaneously, some firms choose to discard the practice, yet the number of firms abandoning it does not escalate, indicating that most of the remaining firms in the industry continue to employ the practice. In combination, these graphs highlight the sources of ambiguity surrounding the practice's long-term, detrimental consequences. Exogenous ambiguity exists because some firms without the practice also fail. Endogenous ambiguity exists because not all adopters fail, the practice does not increase failure immediately, and it briefly enhances survival. When the simulation reaches an equilibrium state, the rates of adoption, abandonment, and firm failure remain roughly at par.

Thus, to conclude, the model shows that, under these conditions, a detrimental practice can indeed spread and survive despite having an overall negative effect on the life expectancy of the organizations that adopt it. Even while all firms—as in the simulation model—have the ability to shun or discard the practice, firms do adopt and enter with the practice. Firms that entered without it may, after some time, be swayed and adopt after all, while relatively few firms choose to discard it. Please see the appendix for several parameter variations.

EXTENDING INHERITANCE THEORY

Traditionally, studies in evolutionary theory (Nelson and Winter, 1982; Hannan and Freeman, 1989) have sought to explain the fitness and survival of organizations based on different organizational traits such as technologies and business models. From the organizational survival rates, inferences are made about the likelihood of the traits persisting (e.g., Carroll and Harrison, 1994). More recently, studies have acknowledged that population-level selection effects may lead to inefficient outcomes at

the firm level (Levinthal and Posen, 2007). The inheritance theory proposed in this paper adds to this literature, among other things by arguing that management practices have fitness levels of their own. Thus, the theory offers three separate levels of analysis: the population (e.g., an industry), organizations, and practices.

The perspective of the practice. A critical implication of this theory is that it would be potentially enlightening to study a particular practice—a strategy, system, or process—from the perspective of the practice itself, rather than characteristics of the organizations or their environments, particularly raising the question: what are the traits of the practice that aid its survival? That is because the theory explicates that organizational practices function (and evolve) with the autonomy of a separate entity, “subject only to the restriction that it cannot destroy its hosts more quickly than they can propagate” (cf. Durham, 1991: 370). The theory outlined above identified various characteristics of harmful practices that enhance their fitness, among others:

Proposition 1: A practice with a negative effect on an organization’s life expectancy is more likely to persist in a population if its early adopters were more successful beforehand; if it has a short-term positive effect on firm performance; if its negative effect on performance materializes after a relatively long time period; and if the negative consequences affect a relatively tacit antecedent of firm performance (such as innovation, or employee morale).

Proposition 2: A practice with a negative effect on an organization’s life expectancy is more likely to persist in a population if it consists of relatively few elements, which are easy to observe and imitate.

These considerations concurrently also hint at some possible extensions, for example about a practice’s ability to propagate, and not be discarded. As noted, if it is to survive, a detrimental practice needs to be easy to imitate. In addition, however, some practices may have the characteristic that, once adopted, they become difficult to abandon. Various governance forms, certification programs, or elements of organizational design could potentially be studied from this perspective. Practices can even become self-reinforcing. In IVF, for example, clinics that noticed they were lagging behind in the development of their success rate not seldom responded by becoming even stricter in their admission criteria, favoring relatively easy patients, aggravating their situation even further. Once they

had adopted the selection practice, it became difficult to stop.

How the practice affects the adopter. In that sense, so far, this study has not taken into account how harmful practices might induce reactions in their hosts—organizations—other than their dying or their discarding it. Yet, examining cultural traits, Alexander (1979: 74) noted, “Some traits of culture in some fashion, by their effects, reinforce their own persistence and spread; others do not and eventually disappear for that reason.” Similarly, the most successful harmful practices (in terms of their own survival) would induce reactions in their hosts that may not only reinforce their presence in the organization itself but also their diffusion. Put differently, harmful practices would benefit from a built-in mechanism that causes them to spread.¹³ For example, when an organization adopts a certain (harmful) practice because it associates it with prestige or quality (e.g., SixSigma or ISO 9000), it may begin to stimulate its suppliers and alliance partners to conform to the same practice. Thus, a detrimental practice may promote its own spread by provoking a sender to transfer it to other organizations.

Harmful practices may also become self-perpetuating by leading organizations to develop alternative explanations for their problems that are unrelated to the actual reasons. Such alternative theories could potentially reinforce a practice because it blocks efforts to discover the real cause; or because it diverts time, energy, and attention away from effective solutions; or because it directly aggravates the original circumstances (cf. Staw, Sandelands, and Dutton, 1981; d’Aveni, 1989; d’Aveni and MacMillan, 1990). Selection pressures on harmful practices would cause those practices characterized by such self-perpetuating mechanisms to prevail.

Importantly, since practices and strategies are entities of their own, as emphasized in this study, they can also take on their own evolutionary development paths. Practices may not have started out with the aforementioned characteristics but may have gradually evolved them over time. Successful bad practices may be adaptable, so that they can evolve into forms with properties that enhance their own survival, thus enhancing their resilience.

How the practice affects the selection environment. As discussed, detrimental practices are particularly favored by environments that enable speed of transfer (Cavelli-Sforza and Feldman,

1981), combined with factors that create causal ambiguity, among others:

Proposition 3: A practice with a negative effect on an organization's life expectancy is more likely to persist in a population characterized by high density, with ample inter-organizational ties and exchange, and where there is a relatively high number of intermediaries active (such as consultants, bankers, auditors, or board interlocks).

Proposition 4: A practice with a negative effect on organization's life expectancy is more likely to persist in a population where the number and the uncertainty of factors that determine firm performance are relatively high.

So far, I have made no assumptions about the relationships between firms. In the simulation, for instance, I adopted a random distribution of organizations across the industry space. However, organizations may be tied to one another in many ways—for instance through alliances, boards, or third parties such as banks and consultants—which may influence the diffusion and adoption of practices (e.g., Haunschild, 1993, 1994; Gulati, 1995; Young, Charns, and Shortell, 2001). Research that disentangles and models various forms of organizational interactions under different constellations of social (Milgram, 1967; Uzzi and Spiro, 2005) and competitive structures (e.g., Hsieh and Vermeulen, 2014) would be another potentially fruitful way to extend inheritance theory. Possibly, this research could take place in multiplant networks within one and the same corporation; research by Chew, Bresnahan, and Clark (1990), for instance, showed that efficiency differences can also persist within geographically diversified firms. Moreover, harmful practices might not just spread better in certain types of environments than others; potentially they could also alter these environments in their favor. In particular, a harmful practice could possibly alter the ties between actors and with it the social structure in which it is embedded.

Endogenous selection pressure. One way in which a detrimental practice can affect its context is by altering the selection pressure that the competitive environment exerts on firms. The extent to which this happens will depend on the nature of the industry. In some industries, selection pressure will largely be determined by absolute competitive strength, in that a firm's products or services need to reach a certain acceptable level for the company to be able to secure customers and make a profit.¹⁴ If firms in such an industry adopt a practice that reduces their effectiveness, their

chances of survival diminish, too, because they become less able to sell and secure revenues. In some other industries, however, selection will depend more on relative competitive strength—in other words, on how good the firm is compared with others. Put simply: in such a setting, customers choose the best company in the business, regardless of its absolute performance level.¹⁵ This happens, for instance, when there are no substitutes available. As a consequence, in the extreme, if many other firms in this industry have also adopted a particular harmful organizational practice, the organization's relative strength may not have diminished, leaving its chances of survival intact.¹⁶ To put it differently, a harmful practice, in essence, “lowers the bar” for firms to survive in the industry.

In such a situation, selection pressure itself has become endogenous. Figure 4 schematically displays these aforementioned relationships (for details, please see the appendix). It indicates that when selection is fully exogenous ($S = 0$), selection pressure is independent of the number of adopters; when selection pressure is at least partially endogenous ($S > 0$), pressure decreases with the proportion of adopters in the industry. The situation of exogenous selection ($S = 0$) produces the results as displayed earlier (i.e., Figure 3).

By contrast, when the properties as displayed in Figure 4 are included in the simulation described earlier, the situation of largely endogenous selection (set to $S = .9$) produces the results as shown in Figure 5. Foremost, the output demonstrates that, as before, the practice diffuses and persists as a prevalent feature of the industry. In addition, however, it shows that the remaining population of firms is substantially larger than in the case of exogenous selection pressure (Figure 3). This is because, as argued, the practice has essentially lowered the bar in the industry. In such an industry, because competitive pressure has been reduced, the widespread diffusion of a harmful practice does not necessarily reduce the total number of firms active in it, which in turn is conducive to further diffusion. Overall, this means that harmful management practices are more likely to be found in industries with few substitutes, where selection pressure is determined by relative competitive strength.

Proposition 5: A practice with a negative effect on an organization's life expectancy is more likely to persist in a population where selection pressure on firms is determined by their relative (rather than absolute) competitive strength.

—Please insert Figures 4 and 5 about here—

DISCUSSION

The basic theory of inheritance outlined in this paper builds on the notion that organizational practices can be understood as having fitness levels of their own. Under conditions of an association with success, causal ambiguity, and relatively high imitability, a firm may adopt a particular practice or strategy although it is not the optimal solution available. Hence, it is the fitness of the practice itself that determines its survival, rather than the ensuing fitness of the organizations it inhabits. In extremis, this implies that even a universally harmful practice—which lowers the life expectancy of every organization that adopts it—can spread and persist. In the following section, I discuss some potential implications of this theoretical perspective for extant literature in Management and Strategic Management in particular. This provides—I hope—by no means an exhaustive list, as others may identify yet other applications.

Value creation by cessation. Inheritance theory has implications for several core constructs in the literature on Strategic Management. A key concept, if not purpose, of business strategy is to achieve competitive advantage (e.g., Powell, 1992; Peteraf, 1993). An important implication of the theory outlined in this paper is that particular strategies and practices could potentially become widespread (Greve, 1998) even when they may not lead to an advantage over rivals that do not adopt it—and even the contrary. Paradoxically, this may also offer a new avenue to study the creation of competitive advantage, namely through the identification and elimination of practices that do not or that no longer enhance firm fitness and performance, but which may nevertheless be practiced abundantly in the firm's industry.

As such, this theory offers a new perspective for research on business model innovation. Casadesus-Masanell and Zhu (2013: 464) proposed that “at root, business model innovation refers to the search for . . . new ways to create and capture value.” Inheritance theory suggests that innovative ways to create value may come from the identification and cessation of bad practices, rather than just from the development of new ones. The discussion in this paper implies that, for practicing managers, this may be easier said than done, but it provides a new lens through which to

understand—and perhaps a new starting point for firms to think about—how new business models might be created: eliminating practices that do not work. Thus, it potentially speaks to another crucial and ongoing concept in the Strategic Management literature, namely the topic of value creation (e.g., Foss and Foss, 2005; Chatain, 2011; Obloj and Zemsky, 2014).

Following from the above, the theory introduced in this paper has potential implications for the explanation of industry dynamics—or the lack thereof. It suggests how obsolete, counterproductive forms of organizing may persist among incumbents, and how even entrants may be unfavorably swayed to adopt antiquated ways of doing things. Radical innovations in terms of how an industry is organized, its division of labor, and even the boundaries of the firms within it (e.g., Jacobides and Winter, 2005) could be regarded as practices, some of which might be detrimental (Reitzig and Wagner, 2010). Studying these topics from the perspective of the theory described in this paper could shed new light on industry change and its impediments, including alternative explanations for why entrants often seem to conform to established industry practices (DiMaggio and Powell, 1983).

Strategy process. Inheritance theory might also be applied to shed new light on several new streams of research in Strategic Management, particularly ones that search for micro-foundations to understand how particular strategies take shape and get selected (for an overview, see Foss and Pedersen, 2014).¹⁷ Recently, several strands of literature have been emerging that try to understand how strategies originate. The micro-foundations of resources and strategy literatures (e.g., Abell, Felin, and Foss, 2008; Foss, 2011; Felin *et al.*, 2012) largely place individuals at the heart of the process of strategy formation—thereby somewhat echoing the classic yet contested concept of X-inefficiency (Leibenstein, 1966; Stigler, 1976; Button and Weyman-Jones, 1992)—arguing, for example, that there is a “lack of attention to individuals in strategic organization” (Felin and Foss, 2005: 441). Inheritance theory might provide a bridge between the individuals and their firms, explaining how organization-level strategies get selected. For example, analyzing strategies from the perspective provided in this paper might help explain how certain strategies “seduce” individual decision-makers into adoption, whether or not such strategies are the optimal solution for firm

survival. Thus, inheritance theory emphasizes the characteristics of strategies that make them more likely to get adopted and disseminated.

Relatedly, the Strategy as Practice literature (e.g., Carter, Clegg, and Kornberger, 2008; Jarzabkowski and Spee, 2009) states that it is “time to shift the strategy research agenda towards the micro” (Johnson, Melin, and Whittington, 2003: 14). It argues that “organizations are made up of practices . . . generalized practices that exist across organizations” (Vaara and Whittington, 2012: 311), including processes that lead to the creation of organizational strategies (Whittington, 2007).

Inheritance theory implies that the various techniques and frameworks used to develop strategy (Jarzabkowski, 2003) could perhaps be understood and studied as having fitness levels of their own. In turn, the Strategy as Practice literature might be able to inform inheritance theory, and applied to explain how harmful practices emerge. Jarzabkowski (2004), for example, explained how organizations, wanting to balance recursiveness and adaptation, sometimes alter existing practices into new forms. It seems possible that detrimental practices are created in the process. In general, the conditions outlined in this paper might help explain which practices emerge and become generalized, and perhaps which ones do not get generalized in spite of leading to superior firm performance.

Limitations and future research. In this paper I aimed to lay out the basic properties of a theory of inheritance. Doing so, I shunned various possible extensions and complicating factors, including potential relations with other, related concepts, such as routines, sub-routines, meta-routines, and bundles of routines (Nelson and Winter, 1982). Similarly, a practice could potentially enter a firm as part of a bundle of other techniques (Birkinshaw, Hamel, and Mol, 2008), may affect different organizations in different ways (Terlaak and Gong, 2008), or get altered over time (Ansari *et al.*, 2010); or it may be that, as in the case of routines (Feldman and Pentland, 2003), the usefulness of the ostensive aspect of a practice (i.e., its structure) depends on its performative aspect (i.e., the users’ specific actions). Hence, more could be done to explore interactions between different levels of analysis. Accordingly, specific questions that future research could look into are these: To what extent does persistence result from the inherent characteristics of the practice or from firm processes? Exactly what content makes a practice harmful? How do practice characteristics interact with the

conditions for persistence? And what types of firms are more prone to copy or even create harmful practices? Overall, I hope that future extensions of the basic logic laid out in this paper will address such questions and others.

One key assumption I made is that organizational decision-makers need to perceive some benefit of a practice for them to adopt it, either in terms of direct benefits (e.g., enhancing efficiency) or indirectly (e.g., enhancing legitimacy). Some might argue, however, that mere exposure may suffice for organizations to adopt a practice.¹⁸ Similarly, I assumed that organizations can potentially discard a practice. Literature on organizational inertia (e.g., Van Witteloostuijn, 1998; Barnett and Pontikes, 2008) might argue that this is not always plausible. I made these assumptions to show that, even under these restrictive conditions, harmful practices may persist, yet relaxing these assumptions might potentially augment the scope of inheritance theory.

Another extension might be to explore relations with the resource-based view. Barney (1991) in particular argues that only practices that are difficult to imitate can give sustainable competitive advantage. In contrast, inheritance theory specifies that practices that are easy to imitate can lead to competitive *dis*advantage (cf. Bromiley and Rau, 2014). Exploring the relationships between the two lines of theorizing could potentially create new insights. Similarly, one could also examine relations with other established literatures, such as contingency theory (Lawrence and Lorsch, 1969; Jennings and Seaman, 1994) and herding theory (Banerjee, 1992; Bikhchandani *et al.*, 1992). The theorizing could also be extended to look not just at firm death and survival, as a dependent variable, but also at firm performance and growth, as a mechanism for a practice to spread and be employed by more people and more organizational units.

Correspondingly, possible future empirical work could take various forms. One application would be to look at particular practices. Causal ambiguity about long-term effects coupled with high imitability, as discussed in this paper, could potentially lead to rapid diffusion reminiscent of, for instance, the surge in use of credit default swaps in the banking sector that led up to the 2008 financial crisis (e.g., McNamara, Haleblan, and Dykes, 2008; Pernell-Gallagher, 2015). Accordingly, the theory outlined above could help shed light on the failure of market forces to suppress such

harmful strategic practices. By virtue of the theory outlined here, it would require longitudinal data on both short-term and long-term performance effects, and data on both the frequency of diffusion and firm performance (e.g., survival); likewise for other strategic practices.

As noted earlier, in a sense, the situation examined in this paper concerns an extreme application of inheritance theory, since I theorized about a practice which lowers a firm's life expectancy, is harmful for all adopters, and comes into existence as a detrimental practice. Although even in such an extreme scenario—as shown in this paper and its simulation model—a practice can persist, inheritance theory may also help explain less extreme scenarios. Future studies, for example, could use inheritance theory to explain how a strategy or technology that diffused when it was useful may not automatically be replaced by a more efficient one. Or how it may not always be the most effective practice that gets adopted when a technically superior alternative is available (cf. Cusumano, Mylonadis, and Rosenbloom, 1992). Similarly, following inheritance theory, it is possible that a more efficient practice (e.g., type of strategy or structure) gets replaced by a less effective alternative. Thus, inheritance theory opens various new lines of inquiry, of which the above is by no means an exhaustive list.

Conclusion. Over the past decades, various politicians, practitioners, and business academics have steadfastly expressed ideological beliefs that the market is efficient, in the sense that Darwinian forces will, over time, automatically weed out inefficient firms and, with them, inefficient business practices. This should ensure economic progress. As North (1990: 92) described it, “The implications of this theory are that over time inefficient institutions are weeded out, efficient ones survive, and thus there is a gradual evolution of more efficient forms of economic, political, and social organization.” In this paper, I argued not that evolutionary processes do not shape economic life—quite the contrary—but that the prevalent view of how these processes operate and affect firm strategies has been incomplete and oversimplified. Efficient markets may weed out inefficient firms, but this does not mean that ineffective strategies disappear. This is because strategies and practices have fitness levels of their own, which are partially—but only partially—influenced by the fitness level of the adopting organizations. This implies that, just as viruses and parasites exist in nature,

harmful management practices may persist in business.

Whereas biological characteristics (genes) spread through sexual reproduction, organizational characteristics spread through a process of inheritance, derived from the firm's prior actions or the mimicking of others. Consequently, practices may persist in industries just like viruses persist in human populations (Boyd and Richerson, 1985; Durham, 1991; Dunbar, 1993); they spread and persist despite their harmful consequences. Since management practices are subject to Darwinian selection mechanisms, too, existing bad practices can be expected to conform to the characteristics and conditions outlined in this paper. This is not because harmful traits without these characteristics may never come into existence, but because such practices are unlikely to survive. By contrast, harmful practices that do inhibit the features described in this paper will not automatically die out. Without purposeful intervention to identify and eradicate them—for instance through rigorous academic research—they will continue to persist.

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Figure 1 Practice adoption and survival.

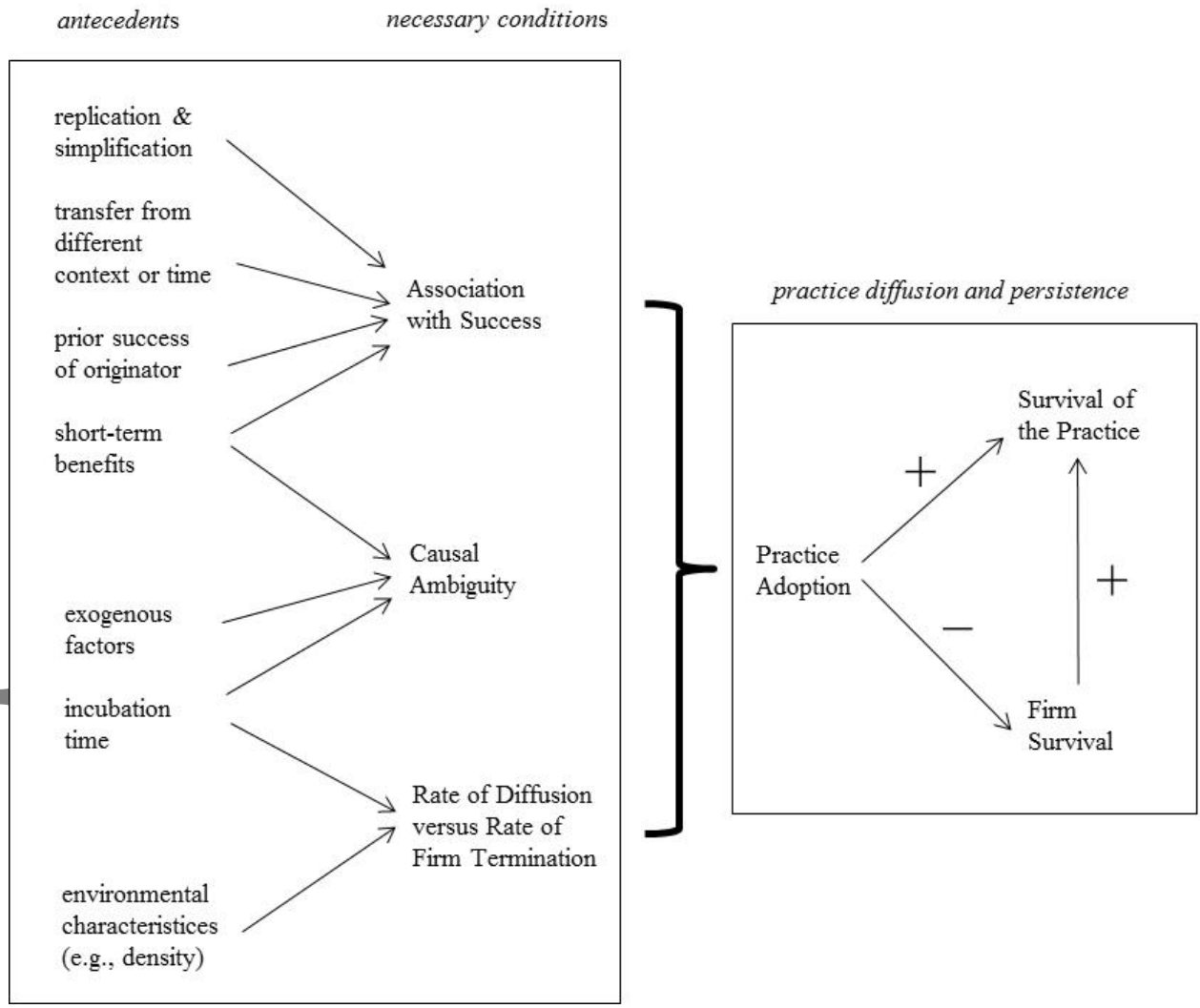
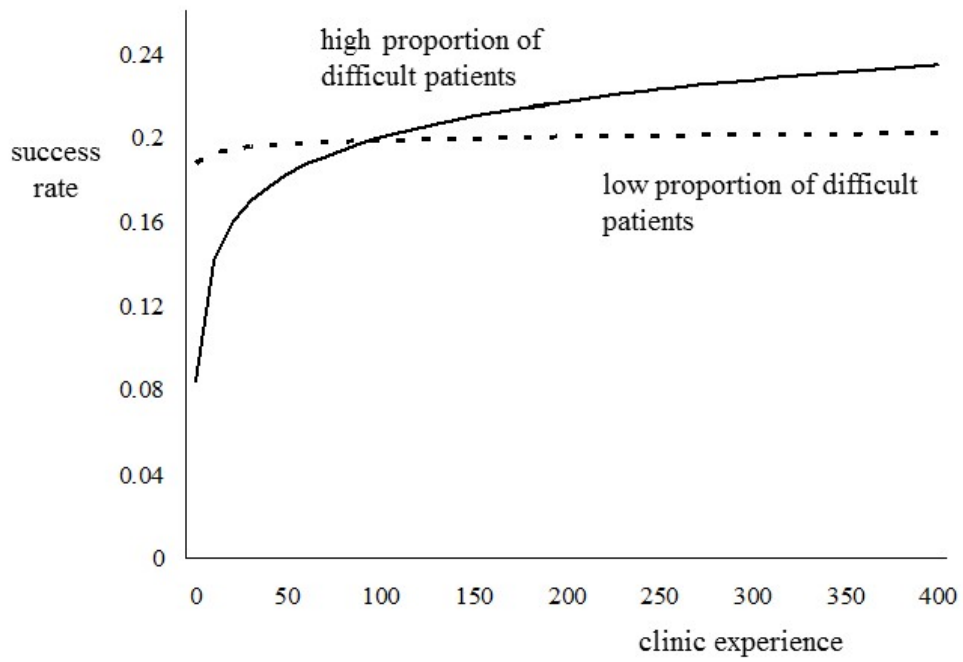


Figure 2 The influence of treating difficult cases on an IVF clinic's success rate.



* Reproduced from Stan and Vermeulen (2013).

** High proportion concerns one standard deviation above the mean; low concerns one below.

Figure 3

A harmful practice that survives: exogenous selection pressure.

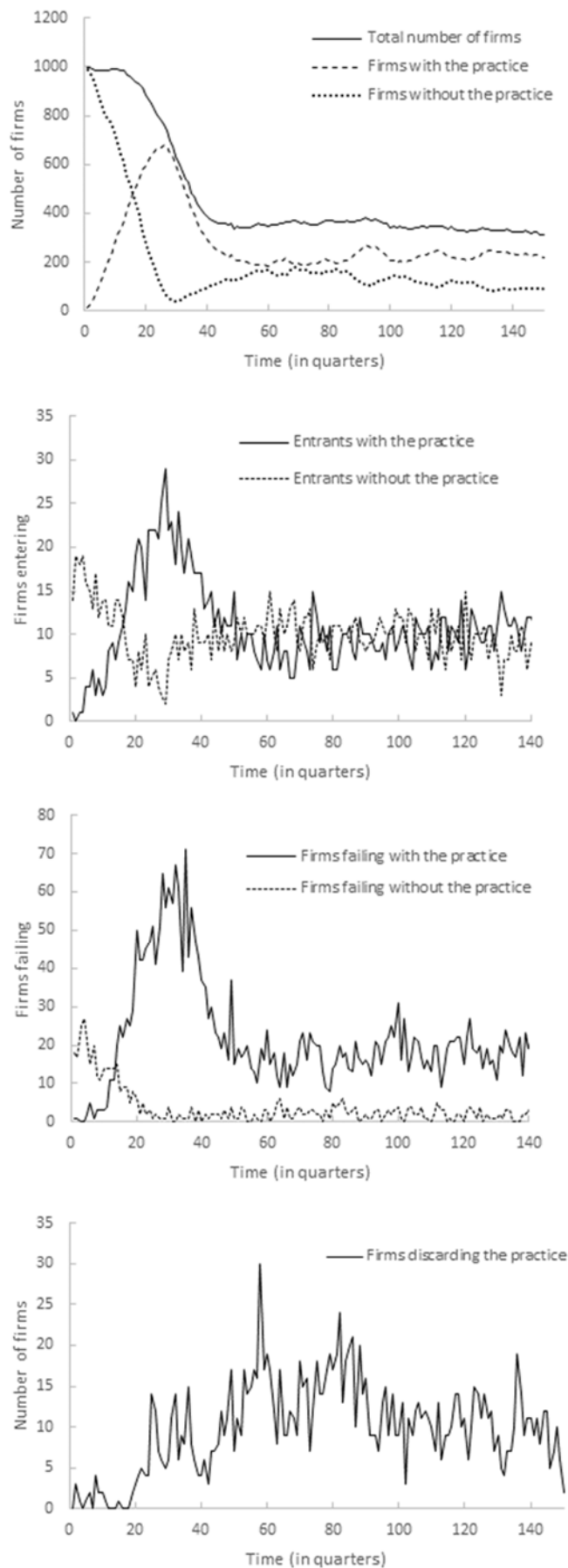
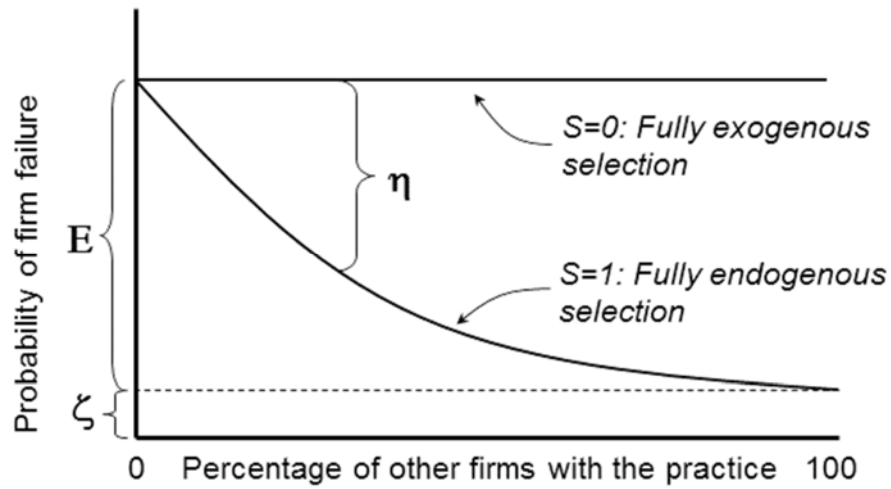


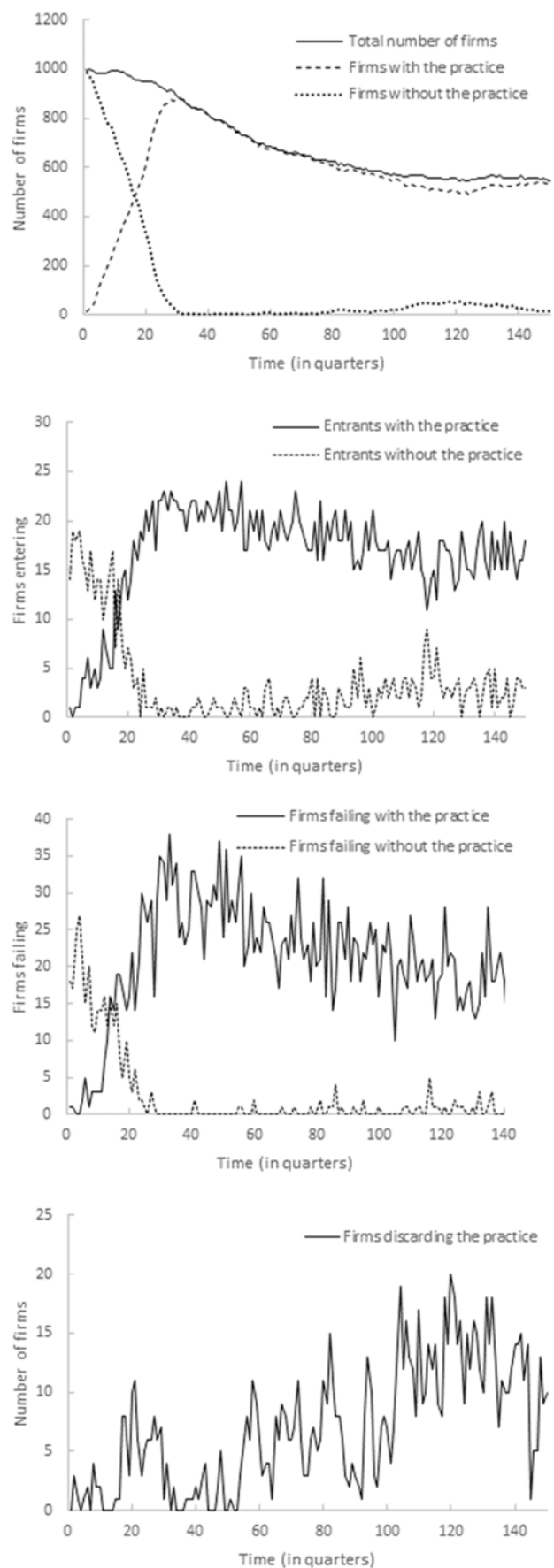
Figure 4 Exogenous versus endogenous selection pressure.



Where ζ = probability of firm failure without the practice; E = additional probability of firm failure with the practice when 0% of competitors have adopted; η = reduction in E when selection pressure is fully endogenous, proportional to the percentage of competitors that have adopted; S = degree to which selection pressure is endogenous, i.e., the proportion of η dependent on the percentage of other firms with the practice.

Figure 5

A harmful practice that survives: endogenous selection pressure.



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NOTES

¹ Relatedly, the literature on slack has argued that, although perhaps in itself an inefficiency (Williamson, 1991; Love and Nohria, 2005), slack can indirectly aid a firm's longevity because it enhances innovation (Singh, 1986; Nohria and Gulati, 1996).

² The theory developed in this paper, regarding harmful management practices, relates to the literature on management fads (e.g., Abrahamson, 1996, 1997; Strang and Macy, 2001), but it represents a more extreme case. The literature on management fads and fashions has examined practices—with little (Strang and Macy, 2001) or no use (Staw and Epstein, 2000)—that spread but do not persist. The strategic practices defined and examined in this paper represent a more extreme phenomenon, in the sense that the practice persists, and also that its effect on a firm's life expectancy is distinctly negative.

³ Routines, for example, can largely be unconscious, and may sometimes also be difficult for organizations to relinquish (Gilbert, 2005; Leonard-Barton, 1992). Similarly, memes are conceptualized as beliefs and behaviors that organizations and their members may not deliberately adopt or shun but which may be replicated nonetheless (Weeks and Galunic, 2003). Although such characteristics are not at odds with the theorizing in this paper, I wish to explore whether harmful organizational traits can persist even when organizations are fully aware of them (although not necessarily of their detrimental effect) and could potentially opt to discard or not adopt them.

⁴ Another explanation for the possible adoption of inefficient organizational practices can be found in agency theory (Jensen and Meckling, 1976) and similarly in the literature on X-inefficiency (Leibenstein, 1966; Button and Weyman-Jones, 1992), according to which managers adopt practices that benefit their own interests even though they may have negative consequences for the performance of their firms, such as poison pills (Davis, 1991) or particular compensation schemes (Tosi and Gomez-Mejia, 1989). In this paper, I abstract from such principal-agent problems and explain adoption decisions that represent attempts to benefit the interests of the organization. Furthermore, while agency theory might explain why certain managers/firms adopt a harmful practice, it does not explain why selection through competition would not weed out such firms, and the practice with it.

⁵ The causes of an association with success, not coincidentally, also represent explanations for the possible genesis of a harmful practice: harmful practices are inadvertently developed by organizations that erroneously believe such practices will improve their efficiency and chances of success.

⁶ For instance, on the Micronesian island of Ponapae, what contributed to a man's prestige was owning a very large yam (Bascom, 1948). This cultural trait emerged because it indicated a person's skill as a farmer. However, gradually people's efforts to obtain or grow one big yam began to be detrimental to their welfare, in the sense that it diverted effort and attention from activities that enhanced their survival, causing malnourishment and hunger.

⁷ Winter and Szulanski (2001) explained that when multiple factors influence performance and are all subject to change, it becomes hard for organizations to understand the exact causal nature of each of them.

⁸ Similarly, causal ambiguity will also make it difficult to forecast the precise consequences of abandoning a particular practice, which may induce actors to stick with it, even when there are doubts about its effectiveness (cf. Mizik and Jacobson, 2004).

⁹ Another piece of information that might lead managers to update their causal maps is firms abandoning the practice. Once a practice is widely adopted and has become well established as "the way to do things" in a particular industry, initially it will be difficult for individual organizations to

abandon it, because they cannot fully assess the possible consequences (Staw *et al.*, 1981; Kahneman, 2003), owing to causal ambiguity. Yet, *abandonments among other firms* in the industry may quickly reduce the ambiguity as perceived by the firm. According to herding theory (e.g., Banerjee, 1992), firms will interpret other firms' actions as revealing information and will conclude from this that the practice is harmful, so that they will opt to abandon, too (Greve, 1995).

¹⁰ Just as the spread of viruses is aided by third-party carriers, such as rats and pigeons, the spread of practices can also be spurred by third parties who transfer the practice between organizations in an industry, such as management consultants.

¹¹ Entrants come into the industry at a random location with the same probability of adopting the practice as incumbents would have in that position.

¹² Namely, $.98 + .98^2 + .98^3 + \dots = .98/(1 - .98) = 49$ periods, while $.99 + .99^2 + .99^3 + \dots + .99^{10} + .99^{10} \times .68/(1 - .68) = 20.12$ periods.

¹³ Speaking to this topic, Dawkins (1976) provided the analogy of the rabies virus. The well-known hydrophobic symptom, causing an infected dog's mouth to "foam," encourages it to shake the wet from its mouth and with it the virus. This promotes the virus's spread. Moreover, it turns the dog into a restless wanderer, propagating the virus even farther afield.

¹⁴ Consider, as a stylized example, the restaurant business (cf. Hannan and Freeman, 1989). If restaurants are relatively good (because they have not adopted a particular harmful organizational practice), people will visit them often and they will flourish. If one restaurant in the population is of lower quality (as a consequence of the harmful practice), it will suffer because it will be unable to attract customers. However, when all restaurants are bad (because all have adopted the harmful practice), they will suffer too, because consumers will cease frequenting restaurants altogether. Thus, every firm in this industry that adopts the practice is harmed by it, regardless of how many others have the characteristic. This is because in this business, a firm's success is determined not only by its relative competitive strength but also by its absolute level of strength.

¹⁵ Consider, as another stylized example, retail banking: consumers will generally select the best bank they can find. If there are banks with and banks without a particular harmful practice, the consumer's choice, *ceteris paribus*, will fall on a bank without it. However, when all banks have adopted the practice—and consequently all are "equally bad"—the consumer will still select a bank to deal with, simply because she needs one. Therefore, in this industry the survival chances of a firm with the practice in a situation where all other firms have adopted it too are quite similar to those of a firm without the practice when no one else has adopted it either.

¹⁶ Note that under this paper's definition the practice is still considered "a bad practice," because the firm's life expectancy would still be higher without the trait, even though that life expectancy might not have diminished.

¹⁷ I am grateful to an anonymous reviewer for pointing out this line of thought.

¹⁸ This resembles the debate in anthropology about whether people adopt cultural practices purely owing to exposure—something that Ingold (2000) somewhat sarcastically referred to as "sneeze theory"—or whether they display more intentionality (Burnham, 1973; Ingold, 1990), in terms of making more conscious and deliberate adoption decisions.