TIME IN STRATEGIC CHANGE RESEARCH

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In ever-changing environments, strategic change manifests as a crucial concern for firms and is thus central to the fields of management and strategy. Common and foundational to all strategic change research is time—whether recognized in the extant studies or not. In this article, we critically review the existing body of knowledge through a time lens. We organize this review along (1) conceptions of time in strategic change, (2) time and strategic change activities, and (3) time and strategic change agents. This approach facilitates our assessment of what scholars do and do not know about strategic change, especially its temporal components. Our review has particularly revealed a need to advance scholarly understanding about the processual dynamics of strategic change. We thus extend our assessment by proposing six pathways for advancing future research on strategic change that aim at fostering an understanding of its processual dynamics: (1) temporality, (2) actors, (3) emotionality, (4) tools and practices, (5) complexity, and (6) tensions.

INTRODUCTION

Strategic change represents a central concern in management research, and specifically in strategy research. It is considered indispensable for sustaining competitive advantage and long-term organizational survival (e.g., Eisenhardt & Martin, 2000; Hofer & Schendel, 1978; Pettigrew, Woodman, & Cameron, 2001; Rajagopalan & Spreitzer, 1997). Not surprisingly, research on strategic change has mushroomed in recent decades. For example, a recent Google Scholar search for "strategic change" yielded 123,000 hits, and a topic search in the Web of Science database revealed 1,189 articles (Figure 1).
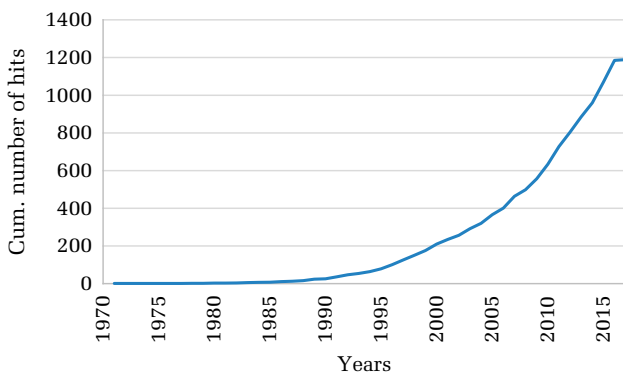
In these works, scholars have studied various facets of strategic change, and used a variety of theories

and methods (cf. Ginsberg, 1988; Helfat & Martin, 2015; Hutzschenreuter, Kleindienst, & Greger, 2012; Rajagopalan & Spreitzer, 1997, among others). Yet, common and foundational to all strategic change research is time—whether recognized in the extant studies or not—if for no other reason than that time is a defining feature of all change (Bartunek & Woodman, 2015; Burrell, 1992; Clark, 1985; Ford & Ford, 1995; Pettigrew et al., 2001).

The relevance of time in strategic change research manifests in all three elements of any empirical research. First, time relates to various *phenomena* concerning strategic change because time is central to strategy, organizational performance, and survival, especially in dynamic environments (e.g., D'Aveni, Dagnino, & Smith, 2010; Eisenhardt & Martin, 2000). For example, Eisenhardt and Martin (2000: 1118) argue that "in high-velocity markets where the duration of competitive advantage is inherently unpredictable, time is central to strategy." Therefore, time is crucial to when strategic change happens, how frequently and fast it occurs, and in which order(s) events during strategic change unfold (e.g., Ancona & Chong, 1996; Huy, 2001; Huy & Mintzberg, 2003). Second, time is

FIGURE 1
Topic Search for "Strategic Change" Publications in the Web of Science database (as of January 2017)

crucial to *theories* about strategic change. This is explicitly the case with respect to process theories and perhaps more implicitly with regard to variance theories (e.g., Langley, Smallman, Tsoukas, & Van de Ven, 2013). Third, time is crucial to the *methods* of strategic change investigations. Time considerations in this regard include time lags, cross-sectional vs. longitudinal vs. ethnographic research designs, clock time vs. event time and others (Ancona, Goodman, Lawrence, & Tushman, 2001a; Bergh, 1993; Bergh & Fairbank, 2002; Van de Ven & Huber, 1990). Therefore, time considerations and assumptions are crucial in any effort to take stock of what scholars know about strategic change.

The purpose of our study is to synthesize and consolidate the existing knowledge about strategic change, emphasizing key time dimensions and time-related assumptions (whether recognized or not) in the existing studies and identifying pathways for future research. A central theme emerging from our assessment is the need to develop an enriched understanding of the *processual dynamics* that occur in strategic change, one which builds on explicit time considerations and challenges prevalent assumptions. In general, a processual and dynamic view explores "how and why things emerge, develop, grow, or terminate over time [. . .], thus, focuses empirically on evolving phenomena, and it draws on theorizing that explicitly incorporates temporal progressions of activities as elements of explanation and understanding" (Langley et al., 2013: 1). Such a view is particularly useful for studying the dynamics of strategic change phenomena that involve complexity, unpredictability, ambiguity, and contradictions (Amis, Slack, & Hinings, 2004; Denis, Langley, & Cazale, 1996; Pettigrew, 1985, 1987).

Yet, although influential works (Gioia & Chittipeddi, 1991; Hinings & Greenwood, 1988; Pettigrew, 1990; Rajagopalan & Spreitzer, 1997) and some more recent studies (Huy, Corley, & Kraatz, 2014; Klarner & Raisch, 2013; MacKay & Chia, 2013; Mantere, Schildt, & Sillince, 2012) have highlighted the importance of complex issues in fostering our understanding of strategic change, relatively few studies have adopted a fine-grained, longitudinal approach required for fully explicating process dynamics. Since time is central in such a view (Langley, 1999; Langley et al., 2013; Reinecke & Ansari, 2017), we believe that embracing a temporal lens will reveal promising new lines of inquiry regarding strategic change.

Our review is comprised of three main parts. In the first part, we define strategic change as we are using it here. Notably, we characterize strategic change as a multifaceted and dynamic process that involves complexity, ambiguity, and contradictions. In the second part, building on an in-depth analysis of existing works, we present a comprehensive review of the extant knowledge related to temporal dimensions of change activities. Our analysis reveals three broad categories with respect to time in strategic change research: (1) conceptions of time in strategic change, (2) time and strategic change activities, and (3) time and strategic change agents.

In the third part, we extend our assessment by proposing pathways for future research on strategic change. A key insight from our review is that while the existing research has provided a wealth of insights regarding the antecedents and consequences of individual strategic change episodes, it has fallen short on providing insights about the temporally based processual dynamics within single and across multiple episodes of strategic change. Therefore, after our review, we propose six pathways for advancing future research on strategic change that will foster scholarly understanding of the processual dynamics of strategic change(s) over time. These six pathways are as follows: (1) temporality, (2) actors, (3) emotionality, (4) tools and practices, (5) complexity, and (6) tensions.

BACKGROUND

Time is interwoven into strategic change. As can be seen in the Appendix, some definitions and conceptualizations of strategic change explicitly refer to time. For example, Rajagopalan and Spreitzer (1997: 49) define strategic change "as a difference in the form, quality, or state over time (Van de Ven & Poole,

1995) in an organization's alignment with its external environment." In a similar vein, Carpenter (2000: 1182) and later Haynes and Hillman (2010: 1149) conceptualize strategic change as "two aspects: strategic variation, or a change in the 'pattern of a firm's resource commitments over time, relative to its past pattern,' and strategic deviation, a shift away from the 'firm's resource commitments from industry norms of competition.'" On the contrary, other definitions are less explicit about time. Nonetheless, terms such as "alterations," "change," "variation" hint at the importance of time.

Thanks to a stream of conceptual works that have advanced time as a research lens (e.g., Albert, 2013; Ancona et al., 2001a; Ancona, Okhuysen, & Perlow, 2001b; Bartunek & Necochea, 2000; Bluedorn, 2002; Epstein & Kalleberg, 2004; George & Jones, 2000; Huy, 2001; Mosakowski & Earley, 2000; Roe, Waller, & Clegg, 2009; Shipp & Fried, 2014a, 2014b) the theoretical understanding of time has expanded since the beginning of this millennium.[1] While scholars have increasingly used the time lens for the purpose of uncovering new insights in a variety of areas of management, such as leadership (Shamir, 2011), M&A and alliances (Shi, Sun, & Prescott, 2012), organization development (Bartunek & Woodman, 2015), and organizational learning (Berends & Antonacopoulou, 2014), this lens seems particularly useful with respect to strategic change.

Indeed, the adoption of a temporal lens promises to enrich our understanding of strategic change in several important ways. First, the time lens allows us to identify implicit, if not explicit, controversies in the literature. For example, strategic change produces some effects in the short run (Amburgey, Kelly, & Barnett, 1993) that are reversed in the long run (Barkema & Schijven, 2008). Such conflicting findings may be addressed by taking the time lens into account. Second, the time lens promises to reveal new constructs and mechanisms of interest. Explicitly framing future strategic change studies with a temporal lens would help to validate existing findings (or not) and resolve conflicting findings and even reveal new relations. For instance, a focus on the intervals between changes has improved our knowledge of how performance is influenced by frequent changes (e.g., Klarner & Raisch, 2013).

Finally, adopting a temporal lens can help develop a much richer and more textured understanding of strategic change, including potential conflicts among actors operating out of differing time perspectives, such as the chief executive officer (CEO) and venture capitalist involved in a startup company (Gersick, 1994).

Domain of Strategic Change

Whether referring to time or not, scholars have defined and operationalized strategic change in multiple ways. One view focuses on strategic change as an outcome or state that manifests in a different organizational strategy (or *what* is changed). For example, Goodstein and Boeker (1991: 307) emphasized "changes in product and service domains," Wiersema and Bantel (1992) studied corporate strategic change as "absolute change in [product] diversification level," and Gioia, Thomas, Clark, and Chittipeddi (1994: 364) stressed "organizational mission and purpose or [. . .] overall priorities and goals to reflect new emphases or direction." These definitions are often based on Ginsberg's (1988) foundational typology of strategic change which combines two broad dimensions of organizational strategy. The first dimension involves: (1) position, which reflects choices of product/market domains, and (2) perspective, which reflects the shared, dominant beliefs through which key organizational actors identify and interpret issues as worthy of attention. The second dimension conceptualizes change as: (1) variation in magnitude, or "first-order change," or (2) shifts in patterns, or "second-order change."

This approach also emphasizes a need to distinguish strategic change from organizational change. Although these two terms have sometimes been used interchangeably and although their definitions may overlap to some extent (e.g., Mintzberg & Westley, 1992), scholars often promote a particular focus for strategic change that is not characteristic of all organizational change (e.g., Nadler & Tushman, 1989). Strategic change typically affects major elements of the organization, such as structure, identity, or strategy; it is often fundamental; and it is typically initiated and led by executives and/or their consultants. Organizational change may encompass a much wider range of changes that may or may not be strategic, and may be much smaller in scope (e.g., Bartunek & Woodman, 2015; Kunisch, Menz, & Ambos, 2015; Mantere et al., 2012). In this study, we focus on research that is explicitly about strategic change.

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[1] For example, the Academy of Management emphasized the importance of time as a research lens in its 2000 Annual Meeting, for which the theme was "A New Time," and in subsequent special issues on time in its leading journals in 2001 and 2002.

A second view emphasizes the change agents, means, and actions in strategic change. For example, Mantere et al. (2012) argue that strategic change "is consciously initiated by top managers, creating a shift in key activities or structures." Relatedly, scholars argue that strategic change is an "attempt to change current modes of cognition and action" (Gioia & Chittipeddi, 1991), which "involves a shifting interplay between deliberate and emergent processes" (Greiner & Bhambri, 1989) and "represents the means through which organizations maintain co-alignment with shifting competitive, technological, and social environments" (Kraatz & Zajac, 2001: 632).

A third view centers on the purposes of strategic change. For example, Rajagopalan and Spreitzer (1997: 49) define strategic change as the organization's alignment with its external environment (Snow & Hambrick, 1980; Zajac, Kraatz, & Bresser, 2000). As the authors explain, "[c]hanges in this alignment encompass (1) changes in the content of a firm's strategy as defined by its scope, resource deployments, competitive advantages, and synergy (Hofer & Schendel, 1978) and (2) changes in external environment and organization brought about to initiate and implement changes in the content of strategy" (Rajagopalan & Spreitzer, 1997: 49).

In light of this conceptual and methodological diversity, we provide our own, broader, definition of strategic change as *the multifaceted, dynamic process involving various actors (change strategists, change agents, and change recipients) which allows firms to seize (new) opportunities and/or cope with threats in order to become or remain competitive in the market environment*. This definition emphasizes two characteristics that we believe are important and will be further explored in our review of the extant research. First, strategic change is comprised of multifaceted subprocesses which necessarily concern changing and enduring conditions in the external and internal environments, as well as recognition, interpretations, and actions by various actors (top executives, strategists, middle managers). Successful management of strategic change requires managing its various phases and stakeholders *over time.* Second, strategic change is a dynamic process which involves complexity, contradictions, and ambiguity. While to some extent it may be predictable, conscious, planned and linear, it also involves unpredictable, unconscious, unplanned, and nonlinear aspects (Amis et al., 2004). Such dynamic processes are temporal by definition.

Analytical Approach

In our attempt to systematically review the roles of *time* in the growing body of knowledge about strategic change, we have followed comparable studies (e.g., Menz, Kunisch, & Collis, 2015) and applied a structured approach (Cropanzano, 2009; Short, 2009; Webster & Watson, 2002). We focused primarily on empirical studies published in leading strategy and management journals and added other articles that provided pertinent information. We identified the relevant works on strategic change in various steps including a key word search, forward and backward searches, and abstract screenings, as accessed through multiple databases. We analyzed the body of literature according to the studies' research focus, key findings, applied theoretical lens, hypothesized mechanisms, and applied methods. We particularly emphasized the studies' time-related considerations.

We organize the following discussion of our findings around three broad categories of time earlier identified by Ancona et al. (2001b) that repeatedly surfaced in our analysis of strategic change research: (1) conceptions of time in strategic change, (2) time and strategic change activities, and (3) and time and strategic change agents [including individuals such as CEOs and teams such as top management teams (TMT)]. These categories are interrelated rather than mutually exclusive. Yet, summarizing the literature from several angles provides a more holistic picture. We will return to this issue in our synthesis.

In addition to describing the insights about strategic change along these categories in our text, we provide three summary tables that also include open issues with regard to the components of each category. As will be clearer below, this material feeds into our recommendations for future pathways for research.

CONCEPTIONS OF TIME IN STRATEGIC CHANGE RESEARCH

The first category refers to conceptions of time in strategic change research. While time has sometimes been defined simply as "a non-spatial continuum in which events occur in apparently irreversible succession from the past through the present to the future" (Ancona et al., 2001b: 513), our analyses of the existing literature revealed that scholars have built on multiple conceptions of time in their efforts to study strategic change. These are "different ways of describing or characterizing the [time] continuum" (Ancona et al., 2001b: 514). These conceptions of time surface in scholars' approaches to studying

strategic change and in their studies' designs, and, thus, are crucial for our understanding about strategic change. In particular, strategic change scholars have utilized (1) clock time, (2) event time, and (3) life cycle time (Table 1).

Clock Time in Strategic Change Research

Clock time (or calendar time) represents arguably the most widely used conception of time in strategic change research. Ancona et al. (2001b: 514), among many others, note that it "depicts the [temporal] continuum as linear-infinitely divisible into objective, quantifiable units such that the units are homogeneous, uniform, regular, precise, deterministic, and measurable (e.g., McGrath, 1988)." While the units are homogenous, however, what is measured to indicate clock time varies, as will be evident below.

Because clock time is so prevalent in strategic change research, we focus this discussion on some prominent areas of application. We organize them around two important units of analysis in strategic change research, namely (1) the firms and (2) the change agents. For each of these, there are two different units of clock time.

Firms' clocks. Our review reveals that the firms' clocks—actually, their calendars—play an important role in much strategic change research. Especially, many large-scale quantitative studies have relied on firms' reporting periods and data (annual, quarterly, and monthly). The firms' reporting data have been widely used for the operationalization of strategic change, for the measurement of firm performance as well as various other organizational factors.

Scholars have widely used firms' financial reporting data across years to gauge strategic change. Several studies have focused on "corporate-level strategic change" as changes in the scope of multi-business firms (e.g., Hoskisson & Johnson, 1992; Kunisch, In press; Markides, 1992, 1995; Nakauchi & Wiersema, 2015; Wiersema & Bantel, 1992, 1993). For example, in a recent study of strategic change in Japan, Nakauchi and Wiersema (2015: 301–302) used "the absolute percentage change in the size of the company's core business to capture changes in the firm's strategic scope . . . [they] used a three-year period to measure post-succession strategic change. The core business is the largest business in terms of the company's sales and thus represents the dominant strategic focus of the firm." Relatedly, scholars have measured strategic change as the difference in the level of diversification in 2 years. For example,

Boeker (1997a: 159) operationalized strategic change "as the absolute percentage of annual change in degree of diversification across the 20 product-markets."

Other scholars have gauged strategic change as changes in firms' financial resource allocation across years based on composite measures (Finkelstein & Hambrick, 1990; Oehmichen, Schrapp, & Wolff, 2017; Quigley & Hambrick, 2012; Weng & Lin, 2014; Zhang & Rajagopalan, 2010). For example, Oehmichen et al. (2017: 5) "use (1) plant and equipment newness (net P&E/gross P&E), (2) nonproductive overhead (selling, general, and administrative expenses/sales), (3) inventory levels (inventories/sales), and (4) financial leverage (total debt/equity). A change in these ratios across years indicates a departure from a firm's prior profile and suggests strategic change. We calculated the absolute value of the differences between two subsequent years in these ratios."

These approaches to operationalize strategic change share a basic assumption that strategic change unfolds linearly over (clock) time as a firm's clock moves from one fiscal term to the next. While the studies have contributed valuable insights about antecedents and outcomes of strategic change, the operational mechanisms and dynamics of strategic change have largely remained a black box.

Scholars have also frequently used firms' financial data to gauge *firm performance*. This has been studied both as an antecedent of strategic change as well as an outcome. Scholars have frequently measured firm performance based on the firms' financial data such as return on assets or return on sales from the firms' monthly, quarterly, and annual statements (Bergh & Fairbank, 2002; Miller, Washburn, & Glick, 2013; Rajagopalan & Spreitzer, 1997).

With respect to firm performance as an antecedent of strategic change, the extant studies largely suggest that poor performance—either relative to a firm's historical levels (i.e., prior years) or relative to other firms (i.e., the same time period)—fosters the likelihood of strategic change (e.g., Boeker, 1997a). For example, drawing on organizational adaptation theory (Kimberly & Quinn, 1984), scholars have argued that low firm performance will foster strategic change because it is needed for performance turnaround (e.g., Boeker, 1997a).

With respect to firm performance as an outcome of strategic change, the existing research suggests that no universal relation exists (for a related debate with respect to firm performance see also, Miller et al., 2013). A common theme emerging from the extant

TABLE 1
Assessment of "Conceptions of Time in Strategic Change Research"

Category	Key Concepts and Findings	Open Issues	Future Pathways
Clock time in strategic change research	*Firms' clocks (e.g., fiscal terms)* Poor performance—either relative to a firm's historical levels (i.e., prior years) or relative to other firms (i.e., the same time period)—fosters the likelihood of strategic change.	How do firms actually identify poor performance? Who is in charge?	Tools and practices, actors
	The strategic change–performance relation is contingent on the context, content, and implementation of strategic change. In general, strategic change is a "double-edged sword" with adaptive and disruptive effects.	What are the roles of time lags? How do different time lags influence the existing findings?	Temporality
	Firm age is negatively associated with the likelihood of strategic change, and other characteristics such as speed, frequency.	Which tools and practices help "older" firms overcome inertial forces?	Tools and practices
	Change agents' clocks (i.e., age and tenure) Younger (or *vice versa*, older) executives (CEOs and TMTs) are positively (negatively) associated with the occurrence and magnitude of strategic change.	Are "younger" and "older" (and "shorter-tenured" and "longer-tenure") inverse traits? What are the potential differences?	Temporality
	Newer (or *vice versa*, longer tenured) executives (CEOs and TMTs) are positively (negatively) associated with the occurrence and magnitude of strategic change.	How can firms mitigate the challenges associated with "age" and "tenure" with respect to strategic change?	Tools and practices
Event-based time in strategic change research	*Events in the firms' external environments* Strategic change is a response to changes in the firms' external environments, which provide new threats and opportunities.	How do events in the environment change over time?	Temporality
	Strategic change is a predictable, common, and performance-enhancing response to changing environmental conditions.	How can disruptive events be used to initiate strategic change successfully? What roles do emotions play in responses to them?	Tools and practices, emotionality
	The effectiveness of strategic change is moderated by external and internal conditions: Firms may respond differently to environmental opportunities and threats depending on the institutional setting.	How do firms identify shifts in their environment? Which tools do they apply? Who is involved?	Tools and practices, actors
	Change agents' perceptions and interpretations of external events Managers' perceptions and interpretations of events influence whether strategic change is initiated or not. For example, there is a difference between familiar vs. unfamiliar events.	Is there a difference between events that pose threats vs. those that pose opportunities? What roles do emotions play?	Emotionality

TABLE 1
(Continued)

Category	Key Concepts and Findings	Open Issues	Future Pathways
	Events in the firms' internal environments		
	Although CEO succession events can trigger strategic change, this is not always the case.	What are important internal events? When, why and how does TMT turnover facilitate or impede strategic change? What roles does emotion play in responses to events?	Actors, emotionality, tools and practices
	In general, inside successors are less likely than outsiders to initiate strategic change, especially if they were groomed by the predecessor.	How do new executives initiate strategic change? What kind of tools do they employ?	Tools and practices
	New CEOs from outside a firm are generally associated with an increased likelihood of strategic change.	What are differences between insider and outsider CEOs in the best tools to employ?	Actors, tools and practices
	New CEOs from outside the firm face various challenges related to strategic change such as a lack company-specific knowledge, and necessary support from other executives.		
Life cycle(s) in strategic change research	*Change Agents' professional life cycles*		
	The likelihood and success of strategic change varies over the life cycle of individuals' tenures, especially the firms' CEOs and executives.	What drives differences or no differences over actors' careers? If people's personality traits are fairly stable over time, how does life cycle influence strategic change over time?	Temporality, actors
	CEOs in the early phase of their tenure are more likely to foster strategic change.	When and how do the careers of TMT members, middle managers and change recipients affect their initiation of and responses to strategic change?	Actors
	Organizational life cycles		
	The likelihood and success of strategic change varies over firms' life cycle; firm age influences strategic change.	What dimensions of organizational age have the strongest impact on the success of strategic change?	Temporality
	Market (i.e., industry and economy) life cycles		
	The outcomes of strategic change efforts are contingent upon the distinct stage in the life cycle of an industry.	What exactly are the differences over life cycles? Why do they occur? How do managers deal with them?	Temporality

literature is that strategic change is a "double-edged sword" with adaptive and disruptive effects (e.g., Herrmann & Nadkarni, 2014). On the one hand, strategic change can break the mold and foster adaption and innovations (Kraatz & Zajac, 2001; Romanelli & Tushman, 1994). On the other hand, strategic change can be disruptive, foster ineffi-ciencies and waste of resources that can harm firm

performance (Zajac et al., 2000). It comes as little surprise that the empirical evidence is wide-ranging from a positive relation (Smith & Grimm, 1987; Zajac & Kraatz, 1993), to an inverted U-shaped relation (Zhang & Rajagopalan, 2010), to a negative relation (Kraatz & Zajac, 2001; Naranjo-Gil, Hartmann, & Maas, 2008), to no relation (Zajac & Shortell, 1989). In attempts to resolve these mixed findings, several

environmental and firm-level moderators have been suggested (Audia, Locke, & Smith, 2000; Kraatz & Zajac, 2001; Zajac & Kraatz, 1993; Zajac et al., 2000). As we will elaborate later, scholars have also emphasized that strategic change implementation plays a crucial role (Dutton & Duncan, 1987b; Greiner & Bhambri, 1989; Huy, 2002, 2011; Huy et al., 2014; Rajagopalan & Spreitzer, 1997).

This suggests that the strategic change–performance relation is contingent on the context, content and implementation of strategic change (e.g., Amburgey et al., 1993; Bergh, 1998; Dawley, Hoffman, & Lamont, 2002; Haveman, 1992; Lin, Zhao, Ismail, & Carley, 2006; Ndofor, Vanevenhoven, & Barker, 2013). We will return to this issue and discuss specific findings throughout our review.

Firms' clocks also play a role in scholars' operationalization of other *organizational characteristics* related to strategic change, especially firm age. Several studies have explored firm age defined as the number of years of a firm's existence since its incorporation. This research generally suggests that older firms respond negatively to the occurrence of strategic change (Durand, Rao, & Monin, 2007; Ginsberg & Buchholtz, 1990; Kelly & Amburgey, 1991). For instance, older organizations are less likely than younger ones to initiate major strategic change (Kotha, Zheng, & George, 2011; Zahra, Sapienza, & Davidsson, 2006). Also, older organizations are more likely than younger ones to experience a long response lag because organizations gradually become more bureaucratic and inflexible (Ginsberg & Buchholtz, 1990; Kelly & Amburgey, 1991).

Change agents' clocks. A second important area of application of clock time in strategic change research refers to change agents (i.e., individuals and groups). Most importantly, clock time conceptions serve as a basis for studies that have examined various executives' demographic characteristics such as age, tenure, and prior experiences and linked them to the propensity and outcomes of strategic change (e.g., Boeker, 1997a; Durand et al., 2007; Wiersema & Bantel, 1992). This research combines studies of firms' dominant coalitions who engage in problemistic search to address a problem (Cyert & March, 1963) and demographic research (Pfeffer, 1983). For example, in a foundational paper, Hambrick and Mason (1984) proposed that organizational outcomes (including strategic change) can be linked to the demographic characteristics of firms' *upper echelons*, which reflect their values, beliefs, biases, and cognitive perspectives.

In this type of research, the term clock time generally refers to the age and/or tenure of strategic change agents. The empirical studies generally suggest that both age and tenure influence strategic change. Specifically, younger and newer (or *vice versa*, older and longer tenured) executives (CEOs and TMTs) are positively (or *vice versa*, negatively) associated with the occurrence and magnitude of strategic change (Boeker, 1997a; Feldman, 2014; Wiersema & Bantel, 1992). For example, Wiersema and Bantel (1992) studied TMT characteristics in a sample of Fortune 500 firms and found that firms with younger and shorter-tenured TMTs were most likely to experience corporate-level strategic change. In a similar vein, Boeker (1997a) found that long-tenured CEOs and TMTs are associated with lower levels of strategic change. Notably, these relations are more pronounced when the firms face poor performance. Drawing on organizational routines, Feldman (2014: 815) found that newer CEOs "are more likely to undertake legacy divestitures than their longer-tenured peers, and the most recently appointed CEOs undertake the most costly legacy divestitures." The study also revealed that such strategic change can harm the firms' operating performance, "especially when the divested unit operates in the same industry as others of the divesting firm's businesses." This finding highlights the potential adverse effects of (more risky) strategic change undertaken by newer executives. As an extension of CEOs' tenure, Weng and Lin (2014) proposed the notion of CEO newness, which incorporates a CEO's prior board experience, prior heir apparent experience, and length in the current position. Based on a longitudinal study of a sample of U.S. computer firms from 1994 to 2007, they found that CEO newness is positively related to strategic change.

Both age and tenure are associated with the willingness to take risks and openness to change (Boeker, 1997a; Miller, 1991; Wiersema & Bantel, 1992). With regard to age, scholars argue that executives' risk taking propensity decreases with age because security and status become more important; executives' capacity for information processing and analysis decreases with age; and younger executives have a higher motivation for receiving favorable reactions from the external stakeholders (cf. Wiersema & Bantel, 1992). With regard to tenure, scholars argue that longer tenures are likely to be associated with higher commitment to the status quo and firms' current strategic course (cf. Wiersema & Bantel, 1992). Specifically, Miller (1991) argued that over

time CEOs become "stale in the saddle" because the fit between their competencies and environmental contingencies tends to decline. In other words, over time executives become less capable and less willing to make strategic change.

As we will discuss further below, these findings concerning the influence of CEO/TMT age, tenure, and experience on strategic change have been corroborated in studies using event-based and life cycle time conceptions. Although scholars have argued that studying demographic characteristics is a useful approach to shed light on executive behavior and that coding of TMT characteristics is mostly "clear-cut and objective" (Michel & Hambrick, 1992: 21), this approach has also long been criticized (Lawrence, 1997; Pettigrew, 1992b). Besides other problems, this approach "black boxes" the underlying mechanisms linking demographic characteristics and outcomes (Hambrick, 2007; Pettigrew, 1992b). Thus, despite the claimed associations, we know little about the actual processes and practices used by executives to carry out their tasks related to strategic change. We will also come back to these issues in our discussion of "Time and Strategic Change Agents."

Summary. Clock and calendar time is pervasive in strategic change research. This is not surprising, because "clock time is the most common way of describing the [time] continuum in Western society" (Ancona et al., 2001b: 514) and the vast majority of the studies' samples stem from the United States/Western societies. In addition, most quantitative studies are focused on public firms and data from their financial reporting (based on calendars).

While we generally encourage scholars to consider the possibility of using other time conceptions, we specifically urge them to pay more attention to the assumptions related to clock time conceptions and the implications of using this time conception. One important concern centers on time windows and time lags (Bergh, 1993). Appropriate time windows and time lags are important if we want to better understand the causal mechanisms and temporal dynamics in strategic change.

Event-based Time in Strategic Change Research

In addition to clock time, event time has been frequently used in strategic change research. One way of understanding an event perspective is to suggest that time resides in important events, rather than the events in (clock) time (cf. Hernes, 2017). This opens us up to the awareness that, sometimes "clock time actually keeps us from seeing the process of change" (Wiebe, 2010: 214). Studies using event time broadly suggest that strategic change is often a response to changes to events in the firms' external and internal environments. We identified three broad sets of studies focused: (1) on external events, (2) on how managers' actually grapple with such external events, and (3) on internal events such as CEO succession and temporal shifts that disrupt current patterns.

Events in firms' external environments. Several studies have explored the role of external events in strategic change. These studies are typically anchored around a specific event on the time continuum—such as the introduction of new public policies, the emergence of new (disruptive) technologies, and the rise of new competitors. Scholars argue that strategic change occurs as a response to changes in the regulative, technological, and competitive environments because such events can yield new opportunities for firms and/or threats they want to neutralize (Rajagopalan & Spreitzer, 1997).

First, several studies suggest that changes in firms' regulatory environments can trigger strategic change (McCutchen, 1993; Smith & Grimm, 1987; Zajac & Shortell, 1989). For example, McCutchen (1993) studied how firms in the pharmaceutical industry—an industry in which research intensity is an important strategic dimension and driving force—responded to a major change in tax policies in 1981. The study revealed strong responses by the firms to the regulatory changes to maintain their relative position in research intensity. Thus, alterations in public policies can pose new opportunities in the firms' external environment which foster strategic change. In a study of the railroad industry before and after deregulation primarily in 1981, Smith and Grimm (1987: 363) found evidence "that most firms changed their strategies in response to environmental variation, and that those that did change their strategies out-performed those that did not." They also identified "five different railroad strategies and five different kinds of strategic changes. [. . .] Among the strategic changes, those involving innovation and contingency strategies were found to be the most profitable."

Zajac and Shortell (1989) revealed similar findings in a study of the U.S. healthcare sector. They anchored their study on the time continuum around the introduction of the Medicare Prospective Payment System by the U.S. government in 1983. They argued that "[t]his event represented a nation-wide environmental jolt (Meyer, 1983) in that it substantially changed the environment in which health-care organizations had operated for many years" (Zajac &

Shortell, 1989: 414). The findings suggest that "changes in generic strategy are not rare, and that organizations do not perceive generic strategies to be equally viable in different environments across time."

Scholars have further argued that firms may respond differently to the opportunities and threats that arise from external events, depending on the external and internal conditions they are facing (Hoskisson, Cannella, Tihanyi, & Faraci, 2004; Zajac & Kraatz, 1993). For example, Hoskisson et al. (2004) studied strategic change in nine French civil law countries in Latin America and Europe. While they found that environmental factors, such as change in country development, increased competition, and deregulation generally influenced strategic change, this relation was moderated by business group membership which allowed member firms access resources, take advantage of environmental opportunities, and neutralize threats. These findings support the notion that depending on the institutional setting firms respond differently to environmental opportunities and threats.

Some studies have also focused on the effects of strategic changes in response to external events, that is, whether or not firms that change their strategies outperform those that do not. Overall, the findings are inconclusive (Smith & Grimm, 1987; Zajac & Kraatz, 1993; Zajac & Shortell, 1989). For example, while Zajac and Shortell (1989) found performance differences across generic strategies, they did not find differences in performance between firms that changed their strategy versus those that did not. On the contrary, McCutchen (1993) found performance benefits of strategic change. Similarly, Zajac and Kraatz (1993) in their study of strategic restructuring in the higher education industry, found "that, contrary to ecological predictions, restructuring is a predictable, common, and performance-enhancing response to changing environmental conditions."

A related stream of research has explored how actors, especially firms' change agents, cope with events in the external environment. This line of inquiry has focused on managers' recognition and interpretations of such events.

Change agents' recognitions, perceptions, and interpretations of external events. Several studies, especially earlier studies, have explored managers' demographic characteristics such as education, tenure, and functional background traits to capture their cognitions and beliefs. These studies have revealed several demographic characteristics that can be associated with strategic change because they reflect the executives' knowledge base, information-processing capacities, and cognitive orientations (e.g., Datta, Rajagopalan, & Zhang, 2003; Gordon, Stewart, Sweo, & Luker, 2000; Kraatz & Zajac, 2001; Lant & Mezias, 1992; Lant, Milliken, & Batra, 1992; Wiersema & Bantel, 1992). A high level of education implies a high ability to process information. Well-educated change agents might be more aware of and receptive to the need for strategic change, and broad information processing allows for interpretation of diverse information which fosters quick recognition of shifts in the environment and increases the range of response opportunities.

For example, Datta et al. (2003) combined three demographic characteristics—age, education, and organizational tenure—to capture a CEO's openness to strategic change. Based on an analysis of a sample of 132 CEO successions in 118 U.S. manufacturing firms, their study reveals that CEO openness promoted greater strategic change, especially in dynamic environments.

A related but parallel stream has more directly focused on change agents' cognitions. A common theme in this research is that the ways change agents notice and interpret environmental stimuli depend on their cognitive abilities and belief structures (Barr, 1998; Barr & Huff, 1997; Barr, Stimpert, & Huff, 1992; Gioia & Chittipeddi, 1991; Strandholm, Kumar, & Subramanian, 2004). These cognitions influence change agents' perceptions of threats and opportunities as well as the firm's alignment with its external environment and, thus, influence the perceived need to change and any subsequent action.

Barr and Huff (1997) explored how managers' interpretations of external events relate to the timing of firms' strategic responses to regulatory changes. Their analysis of historical data for six pharmaceutical firm reveals that (p. 362) "the timing of change involves more than just assigning meaning to a particular event" and (p. 364) "events that are not interpreted as affecting central concepts (performance or well-being) in the firm's strategic frame do not lead to a change in action. Further, change appears to be triggered by interpretations that link a given event to other concurrent or prior events, consistent with stress/inertia theories of change." In a related study, Barr (1998: 644) distinguishes between familiar and unfamiliar events and reveals "two distinct patterns of interpretation development that appear to be linked to whether or not the target of interpretation is familiar. Further, interpretations appear to be linked both temporally and in terms of content to the strategic change undertaken by each

firm. Both sets of results suggest that the interpretations of managers are linked to organizational actions."

The timing of environmental events matters. Events that occur close to evaluation or decision deadlines are perceived differently than at other times (Gersick, 1994), as internal deadlines motivate change agents to heed environmental changes. As a result, the firm's likelihood of initiating strategic change could depend on when environmental changes occur (Gersick, 1988, 1994).

Events in firms' internal environments. In addition to external events, strategic change scholars have also examined events in the internal environment. In particular, scholars have largely focused on CEO successions and executive turnover "events" (Hutzschenreuter et al., 2012; Kesner & Sebora, 1994). Collectively, these studies suggest that executive succession can serve as an important adaption mechanism because they can change strategic change agents' interpretations of the external environment, bring in new skills, shake up political constellations, and mobilize the organization (e.g., Wiersema, 1992; Wiersema & Bantel, 1993).

A substantial body of work has focused on executive, and specifically CEO, successions and strategic change (Chiu, Johnson, Hoskisson, & Pathak, 2016; Goodstein & Boeker, 1991; Gordon et al., 2000; Greiner & Bhambri, 1989; Karaevli & Zajac, 2013; Lant et al., 1992; Romanelli & Tushman, 1994; Sakano & Lewin, 1999; Tushman & Rosenkopf, 1996). While some studies found that executive successions are generally associated with strategic change (Beatty & Zajac, 1987; Weng & Lin, 2014), others did not find empirical evidence for this general relation (Boeker, 1997a; Sakano & Lewin, 1999). Empirical findings on the exact relations between CEO succession and strategic change are still inconclusive (Hutzschenreuter et al., 2012). As we will discuss below, the relations are likely to be highly contextualized.

An important theme in this research centers on the new CEO's origins, such as the distinction between new CEOs from inside vs. outside the firm (Kesner & Sebora, 1994). Several studies suggest that inside successors are less likely to initiate strategic change (Cannella & Shen, 2001; Wiersema, 1992). For example, Cannella and Shen (2001) argue that internal executives who become CEOs after their predecessors retire are unlikely to initiate strategic change because they are often selected and groomed by the outgoing CEOs. The same authors also argue that CEO successions are likely to generate strategic change

if new CEOs are installed with an explicit mandate for change (i.e., contender) (Shen & Cannella Jr, 2002).

In contrast, new CEOs from outside are generally associated with an increased likelihood of strategic change. Scholars have argued that they typically come with an explicit mandate for change (Bigley & Wiersema, 2002; Boeker, 1997b; Shen & Cannella Jr, 2002), bring new skills and perspectives (Greenwood & Hinings, 1996), and typically are not committed to the status quo or to the firm's established strategies and policies (Barker III & Duhaime, 1997; Quigley & Hambrick, 2012; Romanelli & Tushman, 1994; Wiersema, 1992). In addition, they are under pressure to show their efficacy, which is difficult to do while maintaining the status quo (Ocasio, 1994; Ocasio & Kim, 1999; Quigley & Hambrick, 2012).

At the same time, scholars have cautioned that new CEOs from outside the firm face various challenges related to realizing strategic change such as a lack company-specific knowledge [e.g., knowledge of the corporate culture, internal structures, and processes (Robbie & Wright, 1995)] and necessary support from other executives (Karaevli, 2007). In a recent study, Chiu et al. (2016) found empirical evidence that new inside and outside CEOs can affect strategic change, albeit in different ways. Specifically, they explored 234 divestiture programs by U.S. firms between 1986 and 2009 and found that "new inside CEOs are associated with a greater scale of divestiture, whereas new outside CEOs are associated with a greater scope change through divestiture." (p. 617).

In addition to these dimensions of strategic change, scholars suggest that relations between new CEOs and strategic change may be contingent upon contextual factors (Karaevli & Zajac, 2013; Tushman & Rosenkopf, 1996). For example, Karaevli and Zajac (2013) argued that outsider CEOs generate a greater degree of strategic change after taking the helm of firms characterized by corporate stability—operationalized as ordinary succession, a long-tenured predecessor CEO, and good firm performance. Based on a longitudinal study of the U.S. airline and chemical industries between 1972 and 2010, their results challenge the "long-standing assumptions regarding the outsider succession–strategic change relationship, and we advocate embracing the nonintuitive notion that stable (unstable) conditions can be enablers (barriers) of strategic change for outsider CEOs" (p. 1267). In a related study, Karaevli (2007) found that strategic change is a concomitant to outside successions.

Scholars have also suggested that relationships between CEO successions and strategic change depend on the type of succession, on the firms' governance structure (Nakauchi & Wiersema, 2015; Sakano & Lewin, 1999) and whether the former CEO and/or other TMT members leave the firm (e.g., Barron, Chulkov, & Waddell, 2011; Quigley & Hambrick, 2012). For example, Sakano and Lewin (1999) and Nakauchi and Wiersema (2015) studied the impact of executive succession on strategic change in Japan, a context noted for relatively weak market-based corporate governance and lack of board independence. Sakano and Lewin (1999) used a matched control group design involving 81 firms with a CEO succession event and 81 without such an event. They found that strategic change took place during the 5-year period of the study but independent of CEO succession. Thus CEO succession was not associated with strategic change. Nakauchi and Wiersema (2015: 298) found "a greater likelihood of strategic change after non-routine executive succession, with the extent of change unaffected by firm performance. Routine succession in the case of a powerful prior president leads to less post-succession strategic change."

Westphal and Fredrickson (2001: 1113) put forward "a theory of board-directed strategic change in which directors (1) conceive changes in corporate strategy that reflect the strategies of their own home companies and (2) select new CEOs who have prior experience with similar strategies to facilitate implementation." The empirical findings underline that the effects of new CEOs' experiences which appear to predict strategic change disappear when board experience is also considered. They conclude that CEO effects on strategic change outcomes can actually mask board effects.

Several works studied executive succession and TMT turnover (Cho & Hambrick, 2006; Gordon et al., 2000; Lant, Milliken, & Batra, 1992; Tushman & Rosenkopf, 1996; Wiersema, 1992; Wiersema & Bantel, 1993). For example, Wiersema (1992) focused on new president appointments. In line with other insights from CEO succession research, their longitudinal study across a sample of Fortune 1000 diversified firms revealed that firms are more likely to experience major strategic change when they select successors from outside, but experience less strategic change if they appoint key executives from inside. In other words, the nature of executive succession events influences the likelihood of strategic change.

The effects of turnover in the TMT on strategic change are indeterminate (Cho & Hambrick, 2006;

Gordon et al., 2000). Several studies' mixed findings and their varied explanations trigger questions about the temporal order of cause and effect. TMT turnover might, in fact, be needed to implement strategic change (Wiersema & Bantel, 1993), but it may not necessarily be needed to trigger strategic change. New blood in powerful positions is considered necessary for overcoming resistance to internal change (Child & Smith, 1987; Ginsberg & Abrahamson, 1991) and for accomplishing the shift in managerial perspectives that is crucial for strategic change (Cho & Hambrick, 2006; Wiersema & Bantel, 1993). Indeed, Wiersema and Bantel (1993) found that strategic change actually influences TMT turnover. They concluded that "managers cope with an unstable environment through strategic changes that may, in turn, necessitate some turnover within the top team to improve the alignment of managers' cognitions with the new environment. These findings extend our understanding of the link between strategic change and team turnover beyond the more conventional assumption of turnover bringing fresh perspectives to the strategic management task, leading to strategic change (e.g. Tushman & Romanelli, 1985). This study demonstrates that the opposite causal relationship can occur, particularly at the level of the corporate strategy" (p. 500).

While the bulk of the literature on internal events leading to the occurrence of strategic change focuses on CEOs and their succession, there may also be temporal events, perhaps initiated by CEOs, which instigate strategic change. For example, sometimes the existence of organizational problems is recognized, but it is hard to find an impetus to address them. In such cases, temporal shifts can often be helpful in initiating and facilitating strategic change. In three field studies of technology intensive firms, Staudenmayer, Tyre, and Perlow (2002) found that change was stimulated by temporal triggering events that disrupted the regular rhythms of work. Such triggering events included the introduction of "buffer time" into software development, the introduction of quiet time into high-technology manufacturing, and disruptive events such as introducing new tools and processes that interrupted the production cycle of a precision metal manufacturer. They further found that such disruptive events could have multiple types of impact on change; they created a trigger for change, provided resources needed for change, acted as a coordinating mechanism, and served as a credible symbol of the need to change.

Morgeson and DeRue (2006)'s work adds to Staudenmayer et al. (2002)'s research by suggesting

that if managers want to enhance the work of semi-autonomous teams they can do so by intervening in specific events in ways that include temporal characteristics. Three components of events affect how much impact managers can have in such intervention: criticality (how important they are), urgency (the degree to which the team must respond immediately), and duration (how long the event lasts). In other words, particular events may be appropriate occasions for the initiation of strategic change. Events are especially susceptible to disruptions, and disrupting them causes members to need to make new sense of what is going on.

Summary. Event-based time conceptions play an important role in strategic change research. First, events in the external and internal environment such as new legislation and new executives can trigger the need for strategic change. Second, event-based time conceptions are appealing from a methods perspective, because they can be seen as interventions which enable scholars to study potential differences before and after the intervention.

Although event-based time conceptions have helped scholars to develop insights about the antecedents and outcomes of strategic change, we need to learn much more about the *nature* of the events as well as how events are understood and interpreted by participants in them. Since research in other areas suggests that the nature of the events matters (Beck & Plowman, 2009), future research can investigate how cognitive biases, affective processes, and advocacy by various constituencies—potentially including boards, top executives, middle managers, consultants, and shareholders—shape strategic change decisions. Future studies could thus explore several types of events such as predictable vs. unpredictable, familiar vs. unfamiliar, routine vs. nonroutine, scheduled vs. unscheduled. For example, when and why are shifts in the external environment perceived as opportunities or threats and how does this affect strategic change (George, Chattopadhyay, Sitkin, & Barden, 2006)? Finally, future research can also build on Staudenmayer et al.'s (2002) work, exploring in much more detail how change agents can use events to stimulate strategic change.

Life Cycles in Strategic Change Research

Besides clock time and event time, our review reveals that life cycles are another useful conceptualization of time in strategic change studies. The basic idea is that certain phenomena evolve through relatively predictable, similar patterns over time, often described in terms of phases or stages (Miller & Friesen, 1984; Quinn & Cameron, 1983; Van de Ven & Poole, 1995). Strategic change scholars have embraced this idea. This research generally suggests that the occurrence and outcomes of strategic change are contingent upon specific stages in (1) change agents' professional life cycles, (2) organizational life cycles, (3) and market and economy life cycles.

Change agents' professional life cycles. A recurring theme, albeit rarely explored empirically, centers on the life cycles of change agents' professional careers. While strategic change studies have more frequently studied "CEO/executive tenure" (which represents clock time) and "CEO/executive succession" (which represents event time), a small number of studies has revealed differences with respect to strategic changes across discernable phases of an executive's tenure (Miller & Shamsie, 2001). The basic idea of a professional life cycle approach is that the likelihood and success of strategic change varies over the phases, or, perhaps, stages, of individuals' tenures in a specific position, especially firms' CEOs and executives (Hambrick & Fukutomi, 1991; Miller & Shamsie, 2001). Notably, in a foundational work, Hambrick and Fukutomi (1991: 719) argue that "there are discernible phases, or seasons, within an executive's tenure in a position, and . . . these seasons give rise to distinct patterns of executive attention, behavior, and, ultimately, organizational performance [i.e. strategic change]." They delineated five distinct seasons: (1) response to mandate, (2) experimentation, (3) selection of an enduring theme, (4) convergence, and (5) dysfunction.

In an empirical study, Miller and Shamsie (2001) explored the careers of the heads of all the major Hollywood film studios from 1936 to 1965. Building on a learning lens, they revealed three insights: (1) top managers' product line experimentation declines over the course of their tenures, (2) there is an inverted U-shaped relation between executive tenure and the organization's performance, and (3) product line experimentation is more likely to improve performance late in top executives' tenures. That is, "[d]uring the early years of their tenures, managers experiment intensively to learn about their business, later reduce experimentation and increase performance; and finally, in their last stage, executives experiment even less, and performance declines." (Miller & Shamsie, 2001: 725). The authors inferred that there is a three-stage "life cycle" of an executive's position.

Overall, we still know relatively little about how the various stages of executives' professional life

cycles and characteristics of different phases influence strategic change. Literature to this point has referred mostly to individual life cycle episodes, but interesting questions remain on whether and how multiple life cycle episodes affect strategic change. For example, does the life cycle relate to strategic change exactly the same if someone assumes a CEO position for the second or even the third and fourth time? In addition, we need to learn much more about other actors including management consultants, middle managers, and employees.

Organizational life cycles. As noted earlier, strategic change studies have frequently considered "organizational age" (which represents clock time). Yet, some studies have focused on distinct periods of time in an organization's life and embraced the notion that firms undergo several distinct life cycle stages (Greiner, 1972; Quinn & Cameron, 1983). This research generally suggests that firms' histories as well as the current stage in their life cycles need to be considered as important contextual factors (Amburgey et al., 1993; Amis et al., 2004; Boeker, 1989; Barker III & Duhaime, 1997). Especially, the early and the decline phases of organizational life cycles have been explored.

First, a small number of studies has explored the role of the firms' founding phase for strategic change. For example, Boeker (1989) found "that characteristics of an organization's founding imprint its initial strategy by contributing to an internal consensus around a given strategic approach." In a similar vein, Amburgey et al. (1993: 51) argued that "the probability of an organizational change is not just dependent on frequency and recency but also on the position of the sequence of changes in an organization's life cycle."

Second, a small number of studies has focused on declining firms. For example, Barker III and Duhaime (1997: 13) noted: "Early corporate turnaround theorists argued that strategic reorientations are central to the recovery process at many declining firms. However, subsequent large-sample empirical studies have reported that performance turnarounds for declining firms are primarily associated with cutback actions that increase efficiency, thus creating a gap between theory and empirical findings. We close this gap by presenting and empirically supporting a model proposing that the extent of strategic change initiated in a successful turnaround varies systematically with a declining firm's need and capacity to reorient its strategy." Siggelkow (2001) presented an example of such a reorientation in his description of Liz Claiborne's decline due to environmental changes. He also showed how the company's renaissance came about when the company learned to respond better to external factors while retaining its internal fit.

Furthermore, several studies have cautioned that their findings might depend on a firm's life cycle stage. For example, Amis et al. (2004) cautioned that their "12 years of study also embraced a distinct period in the life of these organizations." In a similar vein, Amburgey et al. (1993: 51) argued that "the effects of change also depend on timing within the organization's life cycle."

These studies suggest that there could be an overlap between age and organizational life cycle, although this need not always be the case. Conceptually, age and life cycle are not similar and will require further disentangling. And although studies often use "organizational age" as a rough proxy to control for different stages in the life of an organization, we still know little about how an organization's life cycle influences the nature and outcomes of strategic change. Future research could unpack this evolution in longitudinal investigations.

Market and economy life cycles. Since one of the main concerns of strategic change involves firms' alignment with their external environment (Rajagopalan & Spreitzer, 1997), the likelihood and outcomes of strategic change should, to some extent, depend on market and economic environments. With respect to the industry environment, some studies have examined strategic change in the context of industry life cycles (Nadkarni & Narayanani, 2007; Ndofor et al., 2013; Teplensky, Kimberly, Hillman, & Schwartz, 1993). These works suggest that the success of strategic change efforts is contingent upon stages in the life cycle of an industry.

For example, Ndofor et al. (2013) studied turnarounds in the prepackaged software firms in the 1990s—a growing industry—and differentiated strategic change (new product introductions, strategic alliances, and acquisitions) from retrenchment (layoffs, asset reductions, and product withdrawals). Their findings suggest that strategic change rather than retrenchment facilitates turnarounds of declining firms in munificent industries.

Nadkarni and Narayanani (2007) introduced the notion of "industry clock speed" and found that it moderates the relations between strategic change and firm performance. Drawing on a sample of 225 firms from 14 industries, the study suggests "that complexity of strategic schemas promotes strategic flexibility and success in fast clock-speed industries, whereas focus of strategic schemas fosters strategic persistence, which is effective in slow-clock-speed industries."

In addition to market life cycles, the stage within the life cycle of an entire economy or country (Porter, 1990) is an important contextual factor in strategic change. Although many of the studies we reviewed have been conducted in "advanced economy" settings (principally in the U.S.), several studies of strategic change in other economic contexts exist (e.g., Clark, 2004; Clark & Soulsby, 1995; Domadenik, Prašnikar, & Svejnar, 2008; Filatotchev, Buck, & Zhukov, 2000; Hoskisson et al., 2004; Nilsson, 1996; Suhomlinova, 1999). Collectively, these studies suggest that firms may respond differently to opportunities and threats depending on their institutional context. Thus, scholars' knowledge about strategic change might be highly contextualized.

Some studies have focused on "transition economies" (Clark, 2004; Clark & Soulsby, 1995; Domadenik et al., 2008; Makhija, 2004; Suhomlinova, 1999). This research reinforces the recognition that our knowledge about strategic change is contextualized. For example, Makhija (2004) explored restructuring and the role of internal capital markets using a large-scale sample of firms in the newly emerging economy of the Czech Republic. The findings suggest that restructuring that leads to smaller internal capital markets has adverse effects on the value of the firms. Although these negative effects can be mitigated through means which compensate for the disrupted internal markets, the study suggests that internal markets may be more important in underdeveloped institutional environments. Clark and Soulsby (1995) studied the relationship between transforming state enterprises and the wider processes of social, economic, and institutional change in the Czech Republic. Their findings suggest that executives' values, motives, and actions are essential factors in explaining both the process of transformation in state enterprises and the role of institutional factors in that process.

Despite these emerging insights, our review reveals that we still know little about the role of market and economic life cycles. One reason is that many studies have relied on single industry settings such as manufacturing or financial services or used cross-industry samples and have not focused on the role of industries. In addition, extant studies have been conducted in advanced economy settings—mostly in the United States and Europe. The generalizability of these findings remains an open question.

Summary. Using the notion of life cycles has helped to identify a number of temporally based contextual variables that influence strategic change. Sometimes these life cycles overlap with clock time, but they are distinguished from clock time in that they are based on cyclical patterns that do not map completely on to clock time. For example, Fox-Wolfgramm, Boal, and Hunt (1998) showed four different phases in responses of banks to a new federal requirement. Cardinal, Sitkin, and Long (2004) studied four developmental phases that evolved throughout the early life of a moving company. A small number of studies has emphasized events that trigger developmental phases. For example, Cardinal et al. (2004) have studied internal organizational events that trigger change during founding periods. However, we still know little about the actual processual dynamics across life cycles, especially when life cycles are distinguished from clock time.

Overall Summary and Assessment

Our review reveals that scholars have used different conceptions of time that have increased our understanding of strategic change in specific ways. To further our understanding, we suggest that future research should (1) make explicit and justify the choice of time conceptions such as clock time, event time, and life cycles, and (2) use alternative time conceptions. First, scholars should make explicit and justify the choice of specific time conceptions. A few studies have revealed valuable insights by explicitly incorporating multiple time conceptions. A good example is the study by Amburgey et al. (1993: 51) which relies on clock time, life cycle stages, and events (shocks). Another example is a study by Gersick (1994) which shows that clock time and event time reveal their own (differing) patterns of momentum and change. Various conceptualizations of time have shown clear distinctions between objective (cf. clock time) and subjective perceptions of time (Hernes, 2017; Orlikowski & Yates, 2002). Using these distinctions promises to offer richer insights into the dynamics of change (Balogun & Johnson, 2005; Gersick, 1994).

TIME AND STRATEGIC CHANGE ACTIVITIES

The previous section summarizes different conceptions of time used in strategic change research and how those conceptions relate to scholarly understandings of strategic change. In this section, we summarize how scholars have mapped strategic change activities and events to the time continuum. In doing so, we address important concepts and relationships in strategic change research such as timing/scheduling, pacing/speed, frequency, and

rhythm. While many of these concepts involve the creation of an explicit and deliberate order, our summary also encompasses more implicit and less deliberately ordered strategic change activities.

Broadly, strategic change scholars have mapped either single strategic change episodes or multiple strategic change episodes to time. We use this distinction in discussing temporal components of change activities (i.e., temporal markers) (Table 2).

Single Strategic Change Episodes

Arguably, much of the extant scholarly knowledge about strategic change stems from mapping a single strategic change (episode) to the time continuum. By mapping a single strategic change to time, scholars have revealed insights about the timing of strategic change. These have to do with how strategic change takes place in relation to other activities and events such as changes in the external environment and CEO succession events. When studying a single strategic change, researchers have focused on (1) how strategic change activities/phases unfold over time, (2) when strategic change occurs on a temporal continuum, (3) how it unfolds through its duration (i.e., whether it has a constant pace or a more irregular pace of completion), and (4) how long it lasts (from its initiation to its completion).

Sequence/phases. Extant research suggests that strategic change evolves through distinct, predictable phases. A common theme in the extant body of knowledge is the macro distinction between initiation and implementation as two distinct and successive phases on the time continuum (Dutton & Duncan, 1987b; Rajagopalan & Spreitzer, 1997). For example, Herrmann and Nadkarni (2014: 1319) argue that initiation and effective implementation are "two distinct aspects of managing strategic change." The former involves "discrete changes in the content and scope of a firm's existing strategies in response to environmental changes" whereas the latter involves "changes in structures, processes, and incentive systems undertaken to support and carry out initiated strategic changes." We summarize the existing knowledge about these phases.

Research on initiation of strategic change has evolved in two parallel but related streams (e.g., Herrmann & Nadkarni, 2014). The first stream of research has applied a rather normative approach and assumed that strategic change is a more or less rational process that helps firms to adapt to changing environmental conditions (Zajac & Kraatz, 1993;

Zajac et al., 2000; Zajac & Shortell, 1989). Collectively, these studies suggest that the initiation of strategic change is associated with various environmental factors (e.g., competition, regulation, technology, and innovation) and organizational factors (e.g., resources, competencies, and ownership) (Audia et al., 2000; Bethel & Liebeskind, 1993; Gibbs, 1993; Grimm & Smith, 1991; Kelly & Amburgey, 1991; Kraatz & Zajac, 2001; Pathak, Hoskisson, & Johnson, 2014; Torre, Arpan, Jedel, Ogram Jr, & Toyne, 1977; Zajac & Kraatz, 1993; Zajac et al., 2000). We have referenced several of these studies in the preceding section "Events in the Firm's External Environment."

The second stream has adopted a cognitive lens—including both sensemaking and sensegiving (Denis, Lamothe, & Langley, 2001; Gioia & Chittipeddi, 1991; MacIntosh & MacLean, 1999; Mantere et al., 2012)—and emphasized that it is the firms' executives who recognize, interpret, and subjectively make sense of their environments in order to identify options and initiate strategic change (Gioia & Chittipeddi, 1991; Gioia et al., 1994). Some scholars have studied demographic characteristics of CEOs and TMTs such as age, education, tenure, and work experience to capture their cognitive orientations and to study how they recognize and interpret environmental conditions and engage in strategic change (Boeker, 1997a; Datta et al., 2003; Wiersema & Bantel, 1992). Others have applied a cognitive lens to study when and how executives initiate strategic change (Barr, 1998; Barr & Huff, 1997; Gioia & Chittipeddi, 1991). We have referenced several of these studies in the section about "Change Agents' Recognitions, Perceptions and Interpretations of External Events" as well as the in the section about "Events in Firm's Internal Environments."

For instance, Gioia and Chittipeddi (1991) found that the initiation of strategic change evolves through four phases: envisioning, signaling, revisioning, and energizing. These phases correspond to the progressive iterations of processes of sensemaking by change recipients and sensegiving by change agents. This research is generally more descriptive than prescriptive, which is why we still do not know very much about which sequences are most likely to foster successful strategic change.

In addition to initiation, scholars have explored the implementation of strategic change (e.g., Huy, 2011; Huy et al., 2014; Rouleau, 2005; Rouleau & Balogun, 2011; Sonenshein, 2009). Collectively, this research suggests that implementation is key for the performance consequences of strategic change. In addition to various moderating factors at the

TABLE 2
Assessment of "Time and Strategic Change Activities"

Category	Key Concepts and Findings	Open Issues	Future Pathways
Single strategic changes	*Phases* Initiation and implementation represent overall successive phases in the strategic change process.	How are completion and reversal of strategic change manifested?	Tensions
	New CEOs, especially those from outside, are more likely to initiate strategic change.	How can particular episodes of change be distinguished from an overall change?	Complexity
	Middle managers play an important role in strategic change implementation.		
	Timing Windows of opportunity foster strategic change.	What are the windows of opportunities? How can windows of opportunity be discerned?	Tools and practices
	The (right) timing of strategic change also depends on various organizational factors, including changes at the individual level (CEO succession), the team level (TMT turnover), and the firm level (e.g., strategic planning processes, past performance).	How can awareness/readiness for change/ deadlines be recognized?	Tools and practices
	While past performance generally affects the timing of strategic change, this relationship depends on various external and internal contingencies. For example, it depends on the cause change agents' attribute for poor performance.	How do past events affect any new strategic change? How does the life cycle affect the implementation and success of strategic change?	Temporality
	Pace Both the speed of change and how well actions match with others to which they are entrained are crucial for the success of strategic change.	How does entrainment work in practice? What are the types of events to which strategic change needs to be entrained	Complexity
	Early momentum for strategic change affects the overall success of strategic change.	Is initial strong momentum necessary for long-term success?	Complexity
	Multiple factors including change agents' cognitions, actions, and the content of strategic change affect the pace of strategic change at differing times.	How do differing types of strategic change influence appropriate pace?	Complexity
	The pace of strategic change can vary at different times during strategic change processes.		
	Duration Any one strategic change typically includes multiple change episodes.	The length of strategic change from beginning to end is rarely studied. What is the complete duration of change(s)?	Complexity
Multiple strategic change episodes	*Sequence* Early changes play an important role in the overall success of strategic change: They are more consequential than later ones and they increase the likelihood of additional changes.	Are there effective sequences of strategic change?	Complexity
	Firms learn from their past experiences with strategic change and as they rely on this experience, they tend to engage in the same types of change.	How do managers temporally order those strategic change initiatives?	Actors, tools and practices
	Frequency Prior experience influences the frequency of strategic change. Organizational routines, experience, and absorptive ability are mechanisms that lead to the repetition of prior changes.	Which temporal distances between changes are best for maintaining momentum?	Complexity

TABLE 2
(Continued)

Category	Key Concepts and Findings	Open Issues	Future Pathways
	A high change frequency can disrupt established routines that enable organizations to make changes from memory and to accumulate experience with various tasks.	How can the temporal relationship between particular routines and types of changes be understood more fully?	Temporality, complexity
	Rhythm		
	Firms use different strategic change rhythms (combinations of periods of stability and change).	What determines the strategic change rhythm firms chose? To what extent are those driven by change agents?	Complexity, actors
	The most common rhythm discussed for strategic change involves long periods of relative stability punctuated with shorter periods of change.	How consistent are the change rhythms firms use? What impacts do different types of change rhythms have on change?	Complexity

environmental and firm levels (Audia et al., 2000; Kraatz & Zajac, 2001; Zajac & Kraatz, 1993; Zajac et al., 2000; Zajac & Shortell, 1989), research on the role of middle managers in strategic change has emphasized that the implementation of strategic change is crucial (cf. Floyd & Wooldridge, 1992; Wooldridge, Schmid, & Floyd, 2008). Strategic change implementation embraces complementary changes in the firms' structures, processes, communication, and incentive systems to facilitate and complete initiated change (Dutton & Duncan, 1987b; Dyck, 1997; Greiner & Bhambri, 1989; Huy, 2002, 2011; Huy et al., 2014; Ravasi & Phillips, 2011). Scholars argue that strategic change can fail if it is poorly implemented (Dutton & Duncan, 1987b). Conflicts, resistance, delays, and inefficiencies in resource allocation can harm the success of strategic change (Rajagopalan & Spreitzer, 1997). On the other hand, minimizing resistance, garnering the necessary organization-wide support to push the strategic agenda, and allowing efficient use of available resources can aid timely completion of strategic change (e.g., Dyck, 1997; Nutt, 1987).

For example, Rouleau (2005), in a study of how middle managers attempt to sell strategic change to other organization members, found that they do this by drawing on their tacit knowledge and then using four microprocesses, translating the company's new orientation, interpreting the new strategy depending on those with whom they are communicating, teaching clients to support the new strategy, and justifying the changes made. They learn these skills over time. As one commented, "I got the idea [of how to communicate the change] while having lunch with friends who have been in clothing for a long time, like me" (Rouleau, 2005: 1420).

Rouleau and Balogun (2011) built on these findings, showing that middle managers tend to use two overarching discursive activities in giving sense about change that they label "performing the conversation" and "setting the scene." Briefly, performing the conversation refers to the multiple formal and informal conversations middle managers have with others in which they deliberately attempt to "to draw others into their agenda." Setting the scene involves using networks to extend the conversations as well as "future oriented activities such as building a personal image as a partner or a spokesperson to facilitate subsequent scene setting and conversation performances" (Rouleau & Balogun, 2011: 958). The assumption is that both of these must be carried out multiple times, and it is through repetition that others will be influenced in ways the middle managers desire.

Longitudinal field studies on strategic change have revealed that middle managers can play influential roles which have not been traditionally attributed to them. For example, Huy et al. (2014) described how middle managers as a group could formulate a comprehensive change program that was approved symbolically by top managers, who were new and did not know the details of the business enough to articulate specific changes in various organizational routines and work processes that could improve organizational performance. As a group, middle managers could both support and (later) undermine large strategic change projects launched by top executives (Huy, 2001). They could also provide locally adapted emotion management of employees distressed by strategic change in order to maintain some psychological balance and service continuity (Huy, 2002).

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While most studies have focused on one or the other phase, a few studies have embraced and contrasted both phases. Notably, this research suggests commonalities and differences between the two phases with respect to the roles of internal and external actors. CEOs in particular have gained attention. As we have noted earlier, scholars argue that successful strategic change may require firm-specific knowledge (i.e., internal networks, political coalitions) (Boeker, 1997a; Chiu et al., 2016; Karaevli, 2007; Robbie & Wright, 1995; Wiersema & Bantel, 1992). For example, longer tenures help outsider CEOs gain the firm-specific knowledge that is essential for successful strategic change implementation. At the same time, longer tenure increases the CEOs' familiarity with their firms, which reduces their willingness to initiate strategic change (e.g., Boeker, 1997a; Wiersema & Bantel, 1992).

Herrmann and Nadkarni (2014) went one step further and examined CEOs' personalities and how they influence the two aspects of strategic change. In a quantitative study based on survey and secondary data in a sample of 120 small and medium-sized enterprises (SMEs) in Ecuador, they found evidence that the relationships between a CEO's personality and strategic change were multifaceted and complex. Specifically, some traits (extraversion and openness) were associated with initiation only, others (emotional stability and agreeableness) were associated with initiation and implementation, and still others had opposing effects on initiation and effective implementation (conscientiousness).

With respect to external actors, scholars argue that consultants may be much more useful in stimulating changes in the ways executives think about their environment than they are in implementing radical strategic changes (Ginsberg & Abrahamson, 1991). To overcome institutional resistance to extreme strategic shifts, organizations may need to resort to stronger political and symbolic actions, such as promoting or hiring new top executives in key leadership roles. For example, management consultants—as change agents from outside the firm—can create pressure for change by challenging existing mindsets and shaping new managerial perspectives on the environment (Ginsberg & Abrahamson, 1991; Mezias, Grinyer, & Guth, 2001). However, they are not seen as "playing an important role in overcoming the political and cultural barriers that prevent the implementation of changes in strategic orientation" (Ginsberg & Abrahamson, 1991: 185). In other words, consultants may be more helpful in initiation of strategic change than in its implementation.

It remains controversial how much the sequence of strategic change elements matters for individual strategic changes (we will address some of complexities of sequence in multiple strategic change episodes below). Some scholars assume that all the elements of strategic change are happening at once (Romanelli & Tushman, 1994). Others stress that the order in which various elements change is key (Amis et al., 2004; Brown & Eisenhardt, 1997; Hinings & Greenwood, 1988; Pettigrew, 1985). The latter studies indicate that high-impact decision-making elements must be changed first in order to send a clear message that the initiated change will be substantive and lasting (Amis et al., 2004). The high symbolic value of these initial changes conveys the importance of the overall change (Pettigrew, 1985).

In general, comparatively little is known about subtleties in the temporal order of activities, or about the temporal order's implications for the outcomes of change and firm performance. One way to study temporal orders is by exploring the momentum for change. Based on a study of the early stages of strategic leader-initiated culture change at the U.S. Military Academy, Jansen (2004) developed a measure of change-based momentum. She showed how it fluctuated over time in alignment with change events, sensemaking activities and cumulative progress, all of which cause spikes in momentum. Jansen, Shipp, and Michael (2016) have recently built on this to show that differing perceptions of momentum early on in an organizational change can affect how much momentum builds over time.

Some other scholars have studied temporal order by exploring temporal patterns in strategy development (Langley, Fallon, & Kakabadse, 2009). Langley et al. (2009) studied strategy evolution in three central and Eastern European pharmaceutical firms as their countries transitioned from a planned to a market economy. They found that strategic patterns for change events depended on whether firms were first or last movers. They also found that the firms tended to take internally oriented actions first, and organic growth-related actions after that. All the firms included some forms of retrenchment and divestment. However, the timing of these actions and most others after the initial changes varied by firm. In another study of strategic development, Markóczy (2001) presented a longitudinal study that investigated consensus formation in three organizations undergoing major strategic change. The study explored whether consensus building occurred during the strategic change and, if so, how. Initial participants of consensus were also investigated as well as

changes in the scope of participants in consensus. Consensus building did occur, but contrary to some views less through an increase in the strength of consensus and more through an increase in the scope of consensus. Additionally, initial consensus was not located among members of the TMT, but more within an interest group whose members benefited from the given direction of the change.

Timing. Arguably, most scholarly attention has been devoted to *when* strategic change occurs or is likely to occur and what the consequences are—that is, the antecedents and consequences of the timing of strategic change (cf. Albert, 2013). As Langley (1999) notes, timing has multiple dimensions, including, among others, deadlines, alternative possibilities, and points at which information becomes available in relation to the need to act. In addition, timing includes awareness of the "right" time to act (cf. Albert, 2013; Bartunek & Necochea, 2000), which includes awareness of windows of opportunity for strategic change (e.g., Huy, 2001; Tyre & Orlikowski, 1994). It also includes readiness for strategic change (e.g., Armenakis, Harris, & Mossholder, 1993). The existing research provides a wealth of insights about *when* strategic change ought to be initiated and implemented.

The right time for strategic action is often equated with windows of opportunity (e.g., Huy, 2001; Tyre & Orlikowski, 1994). There are some periods that are more favorable than others for change, and these are not determined solely by clock or calendar time. The ancient notion of kairos (Bartunek & Necochea, 2000) referred to the importance of a speaker knowing the receptivity of his or her audience and thus the right time for any particular action. Albert (1995: 14) expanded this notion in discussing "the opportunity interval for action," a fleeting period of when a given strategic action is possible as opposed to much larger periods of time when strategic actions are unlikely to succeed. Albert (1995) linked this to military action in the Persian Gulf War that occurred in the early 1990s, indicating that due to a whole host of reasons (diplomacy, the U.S. and Iraqi military build-ups, Iraq's warfare capability, the need to create and sustain a coalition of countries, and so forth) there were actually very few times in which it was possible to attack. This illustration makes evident that for a whole host of reasons external to (and sometimes internal to) an organization, there are times when strategic change initiatives are possible to launch and times when they are not, or at least much less feasible.

Tyre and Orlikowski (1994) studied the periods of time that follow implementation of a new technology to determine when organizational members might be most open to learning and change by means of the technology. They found that there was a brief window of opportunity (often a few weeks immediately following introduction of the technology) during which members were open to learning the new technology, followed by an abrupt drop-off point.

The strategic change literature has not acknowledged sufficiently time constraints based on factors such as environmental characteristics and organization members' receptivity to novelty. These factors are often crucial to the successful implementation of strategic change.

On the other hand, managers themselves can take actions that create windows of opportunity for strategic change. We have already noted that they are capable of using temporal elements such as disrupting events to promote change (cf. Morgeson & DeRue, 2006; Tyre & Orlikowski, 1994). But they could do more than this. For example, Granqvist and Gustafsson (2016) conducted an inductive study of an attempt to establish and institutionalize a new type of university ("Innovation University") in a northern European country. Among other dimensions, they studied how change agents constructed, navigated, and capitalized on timing norms in their attempts to create a new type of institution. They found that leaders successfully took several steps to construct urgency and create entrainment in ways that established windows of opportunity for change. As Granqvist and Gustafsson (2016: 1020) summarized, "the key actors constructed urgency through actively portraying Innovation University as a solution to a general sense that change of the university sector was necessary, and well overdue. Entraining focused on establishing why the project needed to proceed at that moment in time."

We noted above that environmental conditions place constraints on *when* particular types of strategic change are possible (cf. Albert, 1995; Orlikowski, 2002). They also affect what types of strategic change are possible and desirable. A look at environmental antecedents of strategic change shows that skill in timing is particularly important in uncertain environments. As noted earlier, scholars argue that strategic change is typically triggered by increased market uncertainty (Bergh, 1998; Bergh & Lawless, 1998), increased competition (Giachetti & Lampel, 2010; Hoskisson et al., 2004; Webb & Dawson, 1991), and innovation (Greve & Taylor, 2000) and regulatory shocks (Ginsberg & Buchholtz, 1990; Hoskisson et al., 2004; McCutchen, 1993; Webb & Dawson, 1991; Zajac & Kraatz, 1993). The ability to respond at

the right time—when windows of opportunity are open—places the firm in a relatively advantageous and competitive position, which increases the likelihood of superior performance (Eisenhardt, 1989; Eisenhardt & Bourgeois, 1988; Kim & McIntosh, 2011). Fast-changing environments could make existing competencies obsolete rapidly (Keck & Tushman, 1993), and thereby cause temporal misfits between organizations and their environments. This causes inefficiencies and leads to poor performance unless there is a well-timed response (e.g., Audia et al., 2000; Gersick, 1994).

Scholars have argued that the (right) timing of strategic change as a response to environmental changes is contingent on organizational factors. These include corporate governance (Chung & Luo, 2008; Hoskisson et al., 2004), the level of firm diversification (Bergh & Lawless, 1998), competitive position (McCutchen, 1993; Zajac & Kraatz, 1993), performance (Boeker & Goodstein, 1991), organizational resources (Kim & McIntosh, 2011; Kraatz & Zajac, 2001), organizational control (Jaeger & Baliga, 1985) and organizational size (Fombrun & Ginsberg, 1990; Ginsberg & Buchholtz, 1990). For instance, Hoskisson et al. (2004) explored whether business-group affiliation affected the timing of strategic change as a response to environmental change. The authors showed that group-affiliated firms—legally independent entities that are linked by formal and informal ties with the aim of coordinating their activities—were less vulnerable to increased competition and deregulation because of their market power, combined knowledge, complementary resources, and capital. They were therefore less likely to engage in strategic change. In contrast, independent firms did not have access to member firm resources and had little market power. Thus, they had to respond to environmental changes and were more likely to initiate strategic change.

In line with these arguments, Kraatz and Zajac (2001) found that firms possessing greater stocks of valuable resources than other firms were significantly less likely to initiate strategic change in response to environmental turbulence. Moreover, firms with poor performance are more likely to engage in strategic change in response to environmental changes than firms exhibiting relatively good performance (Boeker & Goodstein, 1991). The underlying argument is that poor performance signals that the firm is not well aligned with the existing environment and, thereby, lowers inertia and resistance to strategic change.

The (right) timing of strategic change also depends on various organizational factors, including changes at the individual level (e.g., CEO succession), the team level (e.g., TMT turnover), and the organizational level (e.g., strategic planning processes, past performance). Furthermore, extant research suggests that the timing of strategic change is influenced by board demography. For example, powerful boards or boards with many outside members are likely to promote strategic change (Golden & Zajac, 2001; Johnson, Hoskisson, & Hitt, 1993). Relatedly, Triana, Miller, and Trzebiatowski (2014: 609) find that board gender diversity "can propel or impede strategic change depending on firm performance and the power of women directors." In addition, Chatterjee, Harrison, and Bergh (2003) show that nonindependent and nonvigilant board members are more likely than independent and vigilant board members to refocus their firms after failed takeover attempts. Nonindependent and non-vigilant boards interpret takeover attempts as signals of inefficiency and vulnerability. In contrast, independent and vigilant board members harbor trust in their strategic course and interpret takeover attempts as mistakes.

The impact of past performance on the timing of strategic change depends on various external and internal contingencies. With respect to the former, moderating factors include the firm's industry and its competitors (Gordon et al., 2000; Lant et al., 1992; Park, Westphal, & Stern, 2011). With respect to the latter, scholars have included the firm's aspiration level (Chang, 1996; Greve, 2002; Lant & Mezias, 1992; Park, 2007), its capacity to change (Álvarez & Meríno, 2003; Barker III & Duhaime, 1997; Chang, 1996; Chittoor, Sarkar, Ray, & Aulakh, 2009; Dawley et al., 2002; Huff, Huff, & Thomas, 1992; Kraatz & Zajac, 2001), and its internal power distribution (Bloomfield & Hayes, 2009; Lawrence, Malhotra, & Morris, 2012; Zhang, 2006). If performance is poor, a chief operating officer (COO) can challenge the CEO's power because, for example, the firm is not aligned with the environment. Thus, the presence of a COO increases the likelihood of strategic change. Conversely, when performance is good, the CEO is powerful and a COO will support the CEO's strategic actions (Zhang, 2006).

The timing of strategic change in response to past (declining) performance also depends on change agents' interpretations of the situation. Strategic change is most likely to occur when, for instance, they attribute poor performance to internal causes (Barker III & Barr, 2002; Barker III & Duhaime, 1997; Lant et al., 1992). In that case, change agents are likely to see a need for strategic change in order to improve. However, if change agents blame poor

performance on external factors that they consider beyond their control or the firms had experienced greater past success, they are unlikely to see a need for strategic change (e.g., Audia et al., 2000).

In line with these findings, extant research suggests that various factors can influence the interpretations, decisions, and actions of internal change agents. Internal factors include the firms' control systems (Jaeger & Baliga, 1985), their strategic practices and strategic planning processes (Dutton & Duncan, 1987b; Jarzabkowski, 2003). External factors include external change agents and external constituents (Bednar, Boivie, & Prince, 2013; Ginsberg & Abrahamson, 1991; Mezias et al., 2001). For instance, Bednar et al. (2013: 910) find that negative coverage increases the extent of strategic change and hence argue that "the evaluations of firms by outside constituents may influence the decision making of executives." Thus, the firms' analysts and media coverage may also play a role.

Finally, scholars have studied various outcomes of the timing of strategic change (e.g., Amburgey et al., 1993; Bergh, 1998; Cui, Calantone, & Griffith, 2011; Dawley et al., 2002; Haveman, 1992; Lin et al., 2006; Ndofor et al., 2013). Collectively, these studies suggest that the context and content of strategic change influence its outcomes. For example, scholars have hypothesized that information processing and information asymmetries are major mechanisms underlying the relation between the timing of change and resulting performance (Bergh, 1998; Bergh, Johnson, & Dewitt, 2008). As a result, in cases of increasing market uncertainty, investments in related businesses lead to better performance than an unrelated portfolio strategy (Bergh, 1998; Haveman, 1992). In a related portfolio strategy, information-processing costs fall and synergies increase because firms can leverage its established routines and competences. The opposite holds true when uncertainty decreases. Moreover, the success of strategic change is likely to vary according to the timing of the change in the organization's life cycle. For instance, Amburgey et al. (1993) argue that the disruptive effect of strategic change increases with organizational age because formal structures and organizational routines gradually become institutionalized. We return to these issues in our future research suggestions.

Pace. In addition to when strategic change takes place, scholars have argued that pace matters substantially. Pace often refers to the speed of strategic change, that is, *how fast* strategic change is initiated and implemented (Albert, 2013; Amis et al., 2004;

Ancona & Chong, 1996). Pace sometimes also refers to the degree to which the speed of one set of actions matches another set of actions to which it is entrained (e.g., Perez-Nordtvedt, Payne, Short, & Kedia, 2008). As Ancona and Chong (1996: 253) describe the concept, "entrainment of pace occurs when management speeds up product development to match the accelerated innovation cycle set by the competition. Entrainment of cycle occurs as multiple activities and processes shift predictably throughout the year in conjunction with the quarters laid out by the fiscal year." Thus, entrainment includes the extent to which a particular activity or activity cycle is adjusted to another one with which it is linked. For example, Jansen (2004: 25) noted that momentum is often entrained to particular courses of organizational actions. Brown and Eisenhardt (1997: 25) suggested that "time-paced change may entrain organizations to their environment and, more strikingly, permit them proactively to set the tempo of their industries." But if a firm's change activities do not align appropriately with the environment's larger rhythmic cycles, there will be misfits (Perez-Nordtvedt et al., 2008) that limit organization success.

Our analysis reveals notable differences among scholars regarding the pace at which strategic changes should be initiated and implemented. Some scholars argue for a need to implement strategic change quickly and, thereby, create the momentum necessary to overcome inertia (Beer, Eisenstat, & Spector, 1990; Pettigrew, 1992a; Romanelli & Tushman, 1994). Others counter that quick change is not appropriate for strategic change, and that radical change needs to be introduced gradually (Amis et al., 2004; Pettigrew et al., 2001).

Pace may not stay uniform throughout a change. For example, some changes start quickly and then slow down over time, perhaps in response to certain temporal markers with which they need to align (Ancona & Chong, 1996; Gersick, 1988). Balogun and Johnson (2005), Denis et al. (2001), and Gioia and Chittipeddi (1991) draw on theories of strategic leadership and cognition to show that the pace of strategic change is unsteady, and that it might either accelerate or decelerate at different times.

The pace of change is influenced by change agents' cognitions, actions, and the content of strategic change. First, change agents' cognitions, and their sensemaking or sensegiving processes (Gioia & Chittipeddi, 1991) influence the pace of change. Sensemaking and sensegiving are social-psychological processes that link interpretations of the past,

present, and future (Gephart, Topal, & Zhang, 2010; Kaplan & Orlikowski, 2013). As some steps in implementation are interpreted faster than others, the pace of change is closely intertwined with interpretation, and thus sensemaking and sensegiving are important mechanisms in accelerating or slowing the pace of strategic change (Balogun & Johnson, 2004, 2005; Clark, 2004; Cooper, Hinings, Greenwood, & Brown, 1996; Fiss & Zajac, 2006; Gioia & Chittipeddi, 1991; Gioia & Thomas, 1996; Gioia et al., 1994; Kiss & Barr, 2015; Sonenshein, 2010). Consequently, the unsteady pace of change can be better understood in connection with cycles of sensemaking and sensegiving than in connection with clock or calendar time (Balogun & Johnson, 2005; Gioia & Chittipeddi, 1991).

Second, the pace and results of strategic change depend on change agents' leadership and change recipients' actions. These actions include the support of and/or resistance to strategic change by a firm's members. For instance, McNulty and Ferlie (2004) observed an incremental change-implementation process that was initially intended to be radical. Its incremental nature stemmed from the resistance of physicians and middle managers to the changes introduced by senior managers and external change agents.

To achieve acceptance among change recipients, strong leadership has been highlighted as necessary (Denis et al., 1996, 2001; Tushman & Romanelli, 1985). Accordingly, if change recipients perceive their leaders as too weak, or if they perceive the projects as different from what was promised, leaders lose their credibility and change slows (Denis et al., 2001). As strategic change tends to be a disruptive event that triggers uncertainty by creating disorder in established values and routines, successful implementation relies on management's ability to provide a compelling answer to the question of why employees should participate in and support the change (Gioia & Chittipeddi, 1991). Therefore, some scholars contend that it is crucial to spend time building relationships with key stakeholders and establishing trust (Fiss & Zajac, 2006).

Third, each type of change has its own effective pace, and this adds to potential complications with entrainment. For instance, formal structures can be changed faster than ingrained beliefs, cognitive styles, or skills (Amburgey & Dacin, 1994; Bartunek, 1984). In general, core elements of the firm need to change more slowly than less important elements, but changes in those core elements produce the greatest energy (Amburgey et al., 1993; Hannan & Freeman, 1984). In contrast, less important elements are easier to change than core elements—changes in these areas can therefore be implemented faster. As such, various organizational elements require different paces, and management must explore and coordinate change to ensure optimal (temporal) progress (Balogun & Johnson, 2005; Barkema, Baum, & Mannix, 2002).

With respect to pace's effects on outcomes, at least when there are no other events or cycles to which the change must be entrained, empirical research suggests that neither "the slower the better" nor "the faster the better" always apply. For instance, Zhang and Rajagopalan (2010) find an inverted U-shaped relation between the pace of strategic change and performance. Based on the adaptive and disruptive effects of strategic change, they show that too much change in a short time is ineffective and disruptive. In addition, they find that fast-paced change does not guarantee successful, long-lasting strategic change.

As noted above, the pace and momentum of a change are unsteady—they can accelerate and decelerate in connection with interpretation, sensemaking, and sensegiving processes (Balogun & Johnson, 2005; Gioia & Chittipeddi, 1991; Jansen, 2004). For instance, Balogun and Johnson (2005) analyze how middle managers make sense of top-down strategic change initiatives. The authors posit that sensemaking about strategic change initiatives is an important mechanism of success. As some steps in change implementation are interpreted faster than others, interpretations of the pace of change vary accordingly. These variations are better captured in terms of interpretive sensemaking cycles than in terms of clock time. In addition, clock time and event time reveal their own patterns of momentum and change (Gersick, 1994). Therefore, distinguishing among various concepts of time can reveal novel insights about the dynamics of strategic change.

Finally, as entrainment makes evident, the pace within an individual change initiative may be meaningless if it does not match the pace of the events and cycles to which it is entrained (McGrath & Kelly, 1986; McGrath, Kelly, & Machatka, 1984). Even though each change has its own effective pace, this pace must match in some way with the requirements of other cycles for successful change (cf. Brown & Eisenhardt, 1997; Perez-Nordtvedt et al., 2008).

Duration. An important, albeit under-researched, theme in the existing literature centers on the duration of strategic change, that is, the length of strategic change from the beginning until the end. For

researchers, duration is directly linked to studies' time lengths, that is, the length of time over which data are collected to capture strategic change. This is typically measured by the "elapsed time" from the beginning of the observation until the end measured by clocks or calendars rendering time as "measurable, unidirectional, and homogenous commodity."

To this point we know very little about the duration of strategic change, since most studies have simply defined a "time window" to capture strategic change rather than started with "strategic changes" and continued until some index of completion. In particular, many of the quantitative studies explore rather short time periods (i.e., a couple of years). For example, Nadkarni, Herrmann, and Perez (2011: 516) argue that because "most strategic-change researchers employ three- to four-year time spans for strategic plans to be realized (Fombrun & Ginsberg, 1990), we picked three years as a reasonable time span for international decisions made in 1990 to yield results." In a similar vein, Wiersema (1992: 81) operationalized strategic change "by the percentage change in the firm's specialization ratio over five years pre- and post-succession." She argued that the "specific time frame chosen represented a period of time long enough to capture shifts in strategy, but brief enough to reflect accurately the actions of those in charge of the firm."

Although these studies have developed important insights, we have to be cautious with respect to the findings. For example, Amis et al. (2004: 36) note that "Kikulis and her colleagues (1995b) found that 4 years was an insufficient period of time in which to uncover the full extent of the changes that were taking place in the NSOs that they studied. Greenwood and Hinings similarly suggested that the 8-year period over which they collected data, although 'considerably longer than that usually found in organization theory research . . . was too short' (1993: 1075). Our work suggests that 12 years was an appropriate period for studying the cyclical effects of change in the present population, for it took that long for the second wave of large-scale change to become evident (see Table 5). Our 12 years of study also embraced a distinct period in the life of these organizations. . . . What is clear is that longitudinal research designs that use real-time data are vital to efforts to uncover the dynamics of strategic change and that, to echo Pettigrew et al., further such research is required if scholars and managers are to gain productive insight into what remain relatively poorly understood facets of the change process."

Summary. Scholars have extensively explored individual strategic change episodes. In particular,

scholars have studied various antecedents and outcomes of timing (i.e., when strategic change should and does occur). As noted above, both environmental factors and organizational conditions can increase the need for strategic change (or impede it). Notably, these relationships are influenced by the cognitions and actions of change agents.

Multiple Strategic Change Episodes

Although the works previously reviewed primarily focus on single strategic change episodes, scholars have also developed important insights about strategic change by mapping multiple changes to the time continuum (Barkema & Schijven, 2008; Bergh & Lim, 2008; Klarner & Raisch, 2013). When studying multiple strategic changes, researchers have focused on (1) the sequence, (2) the frequency, and (3) the rhythm of change.

Sequence. A few studies have explored the nature and effects of sequences of strategic changes. Sequence refers to the temporal ordering of events (Albert, 2013; Albert & Bartunek, 2017; Amis et al., 2004; Bluedorn, 2002; Langley, 1999). As Albert and Bartunek (2017: 286–302) note, every individual incident has a "before and after," though this is not necessarily linear. The sequence of strategic changes is important for connecting the past, present, and future—the before and after—because past events can predict future developments (Abbott, 1990). Important issues with regard to sequence in strategic change center on the *temporal order* of strategic changes and when, why, and how they matter.

Scholars have argued that the positions of individual changes matter within a sequence of multiple strategic changes. Early changes are likely to be more consequential than later ones. For instance, drawing on behavioral theory, scholars argue that early changes in a sequence are more successful than later changes (Barkema & Schijven, 2008). The underlying explanation is that early changes in a sequence occur when the firm has adequate critical resources. Managerial resources become increasingly scarce as more changes occur because the managers are increasingly tied up in coordination tasks. Moreover, based on organizational learning, early changes increase the likelihood of additional changes (Amburgey et al., 1993). However, as Amburgey et al. (1993: 56) further argue "firms become committed to particular sets of routines, but the routines to which they become committed are determined more by early actions than by information gained from the learning situations."

With organizational learning as a popular theoretical lens, scholars have used organizational routines and experiences as theoretical mechanisms to understand sequences of strategic changes. Strategic changes are driven by knowledge acquisition and learning, which provide managers with a diverse set of tools with which to exercise their strategic choices (Danis, Chiaburu, & Lyles, 2010). Firms learn from their past experiences with change. As they rely on this experience, they tend to engage in the same types of change (e.g., Amburgey et al., 1993). In addition, organizations learn by repeating changes that have shaped routines and standardized procedures (Bergh & Lim, 2008). For instance, Chang (1996) provides empirical evidence that firms use their experience and existing knowledge to sequentially enter similar businesses and exit business with different profiles. In other words, firms draw on their experiences with change and tend to repeat the same types of change.

The sequence marker is closely linked to the pace of change. As too much change is detrimental and unmanageable, some scholars argue that large-scale changes should be implemented sequentially rather than simultaneously (Amis et al., 2004; Zhang & Rajagopalan, 2010). With respect to sequential change, various organizational elements need to be changed at different paces, so that the pace within a sequence of changes will vary (Amis et al., 2004). This also means that when there are multiple strategic changes they need to be entrained to each other as well as to other environmental events (cf. Ancona & Chong, 1996). Perhaps after changing core central elements at a slow pace, the process can move quickly when changing organizational elements at the periphery. Or, perhaps, there needs to be ongoing back and forth between two or more different strategic changes; part of one change may need to be completed before another can be begun, but the second may need to be partly—but not wholly—completed before it is possible to return to the first change. This is not uncommon.

It is important to reiterate that sequences need not be linear, though that is often the taken-for-granted assumption of strategic change. Rather, as Amis et al. (2004), Hinings and Greenwood (1988), and others have shown, movement in the direction of any proposed change may alternate with movement away from that direction, with no movement at all, with some movements in lateral directions and so forth.

Frequency. Another concern centers on the frequency of strategic changes. Frequency markers capture *how often* multiple strategic changes occur.

Compared to the aforementioned temporal markers, frequency markers focus on multiple strategic changes. Illustrative constructs include the number of changes (Chang, 1996; Klarner & Raisch, 2013), repetitive momentum (Amburgey et al., 1993; Kelly & Amburgey, 1991), temporal distance between strategic changes (Barkema & Schijven, 2008; Bergh & Lim, 2008; Klarner & Raisch, 2013), and how dependent these changes are on each other (Ancona & Chong, 1996). Research in this area sheds light on the determinants and performance implications of frequent changes.

In analyzing determinants of frequency, scholars concur that experience influences the frequency of strategic change. Organizational routines, experience, and absorptive ability are the often-hypothesized mechanisms that lead to the repetition of prior changes. For example, Suhomlinova (1999) studied strategic change in a sample of Russian state-owned construction enterprises during market transition. The study's findings highlight the importance of prior changes, showing that organizations that have experienced change in the past are more likely to engage in further transformations. Specifically, firms tend to repeat changes because they can build on established routines (Amburgey et al., 1993). These findings are consistent across studies covering such diverse phenomena as changes in product offerings (Amburgey et al., 1993; Kelly & Amburgey, 1991), diversification and refocusing (Bergh & Lim, 2008; Boeker, 1997b; Chang, 1996), and changes in organizational design (Miller & Friesen, 1980a; Miller & Friesen, 1980b; Suhomlinova, 1999).

The organizational learning and population ecology perspectives are key lenses for investigating the occurrence of frequent changes (e.g., Amburgey et al., 1993; Klarner & Raisch, 2013). Change is believed to spur organizational learning, which weakens organizational inertia. After change has weakened inertia, it lessens the amount of inertia that must be overcome in order to implement additional changes. At the same time, experience with a specific type of strategic change (e.g., diversification) reduces the marginal costs associated with change because that experience leads to the development of routines for the activities associated with that particular change. In turn, those routines reduce the time required to initiate new strategic change.

In this regard, the construct of "temporal distance" plays an important role. Learning is a process that occurs over time, and experience takes time to accumulate (Argote & Miron-Spektor, 2011). If changes tend to occur infrequently, the period between two changes might be too long for managers to retain

what they have learned (Bergh & Lim, 2008). In addition, infrequent change makes it difficult to develop repetitive routines or experience-based abilities (Barkema & Schijven, 2008).

In contrast, an accelerating rate of change might prevent managers from building the knowledge they need to manage strategic change (Eisenhardt & Martin, 2000). In this regard, Shi et al. (2012: 183) argue that "a high acquisition frequency does not provide managers sufficient time to hone their skills and make performance-based inferences based on prior acquisition experience. When the temporal interval between two acquisitions is very short, firms tend to suffer from time compression diseconomies (Dierickx & Cool, 1989)." A high frequency of strategic change might not provide managers with enough time to reflect about what they have learned from earlier experiences with change. In the worst case, a high frequency of change could lead to organizational chaos.

With regard to the implications of frequent change, extant research suggests that a high change frequency harms firm performance because frequent changes disrupt the established routines that enable organizations to make changes from memory and to accumulate experience with various tasks (Amburgey et al., 1993; Klarner & Raisch, 2013). A high frequency also prevents organizations from recovering from the disruptive effects of strategic change because the time between changes is too short to build effective routines. In addition, frequent changes do not provide managers with enough time to process the required information (Huber, 1991), thereby causing ineffective decision-making (Hambrick, Finkelstein, & Mooney, 2005).

Change frequency is closely intertwined with other temporal markers. As a high frequency of change harms performance, firms tend to combine changes to reduce disruptions (Amburgey et al., 1993; Hoskisson & Galbraith, 1985; Keck & Tushman, 1993). However, too much change at once also harms performance (Zhang & Rajagopalan, 2010). Therefore, firms need to find the right balance between the frequency and the pace of strategic change. In addition, the combination of the frequency marker with the timing marker determines the rhythm of strategic change. The frequency of strategic change is one determinant of a firm's strategic change pacing strategy, but consideration of the timing (rhythm) provides a more holistic picture. The extant knowledge of the rhythm marker is discussed in the following section.

Rhythm. An exciting line of inquiry, albeit underresearched, centers on the rhythm of strategic change (Huy & Mintzberg, 2003; Klarner & Raisch, 2013; Shi et al., 2012; Vermeulen & Barkema, 2002). Rhythm is defined as the *timing of frequent changes* in a given period (Klarner & Raisch, 2013). It refers to "a pattern of variability in the intensity and frequency of organizational activities, typically characterized by periods of accelerated activity and slowed activity" (Huy, 2001: 613), as well as repetitions of cycles (Ancona & Chong, 1996). Unlike the frequency marker, rhythm captures not only the number of changes in a given period but also the temporal patterns of those changes. The rhythm of strategic change thus centers on the temporal distance between two change events and the links between these and comparative stability. In other words, rhythm focuses on multiple changes and the temporal distance between them.

The rhythm of strategic change can be measured in two ways: The first approach captures rhythm as a first-order construct and explores it directly. It focuses on the length of change and stability periods to "measure" the rhythm. An example of this approach is found in Klarner and Raisch (2013), who explore the firm's rhythm of change by using a dichotomous variable for strategic changes initiated each year. Therefore, they do not account for the number of changes that are initiated within any single year. The second approach operationalizes rhythm as a second-order construct, such that it includes either one or more functions of first-order constructs as input or is an output of a function of first-order constructs (Shi et al., 2012). An example is the derivative that is used by both Shi and Prescott (2012) and Vermeulen and Barkema (2002). More specifically, rhythm is measured as the kurtosis of the first derivative of the number of changes over time. Consequently, a lower kurtosis reflects a consistent rhythm of strategic change. As this measure shows the variability in the frequency of change over a specific period (Ancona & Chong, 1996; Shi & Prescott, 2012), it includes the number of changes. Consequently, Shi et al. (2012) argue that second-order time constructs are better able to account for the complexity of change than first-order time constructs.

This research has also focused on identifying different types of rhythms. Klarner and Raisch (2013: 168) suggested that changes are likely to occur in one or more of four types of rhythms: focused (long periods of change and short periods of stability), punctuated (long periods of stability and short periods of change), temporarily switching (alternating stability and change), and regular (in which intervals between changes are relatively equal). They

explore the rhythm of changes in firms' corporate strategies. In particular, they measure changes in the firms' scope (i.e., entries and exits of business or country segments) over a period of 7 years and adopt a dichotomous focus on strategic change. The years in which a firm initiated one or more strategic changes are coded 1, while years with no change are coded 0.

The type of rhythm that has garnered the largest amount of attention in organizational research is punctuated, sometimes referred to as punctuated equilibrium (long periods of stability and short periods of change). In particular, Tushman and Romanelli (1985) argued that organizational reorientation and recreation were likely to occur in short, punctuated bursts of change in strategy, power, structure, and controls (and, perhaps, in core values). Their empirical study (Romanelli & Tushman, 1994) of U.S. minicomputer producers largely supported their hypotheses: transformation occurred in punctuated bursts of change in these elements.

Scholars also studied the effects of different change rhythms. The empirical evidence suggests that a regular rhythm is more effective than an irregular one (Klarner & Raisch, 2013; Vermeulen & Barkema, 2002). Moreover, an effective change rhythm balances the risks associated with short periods with the risks associated with longer ones (Klarner & Raisch, 2013; Vermeulen & Barkema, 2002). Too short distances between changes increase the risk of information overload, as well as the likelihood of insufficient time to learn from experience and build new routines (Levitt & March 1988). In contrast, if the length of time between changes is too long, the ability to fall back on experiences and routines from earlier changes declines and inertia rises (Hannan & Freeman, 1984; Nelson & Winter, 1982).

Vermeulen and Barkema (2002) investigated the rhythm of a firm's international expansion strategy and its effects on performance. They find that an irregular expansion rhythm negatively moderates the performance benefits of having foreign subsidiaries. They find that the regular change rhythm (i.e., balanced timing between changes in the firm's scope of operations and periods of stability) is beneficial for long-term performance.

Summary. In sum, although strategic change research has frequently acknowledged the importance of sequence, frequency, and rhythm markers, there are few empirical studies of these topics. Consequently, scholarly knowledge of sequences of strategic change and how the order of events influences the final outcomes of that change remains limited. Although scholars have argued that change occurs in rhythmical (repetitive) patterns (Denis et al., 1996) and that successful firms exhibit rhythmical innovation patterns (Brown & Eisenhardt, 1997), we still know very little about change rhythms, their determinants, or their effects on short- and long-term outcomes.

Overall Summary and Assessment

We have presented several temporal constructs as they have been discussed in relation to strategic change. However, for each of these (and other temporal dimensions), there is a much more substantive literature that is pertinent to strategic change even if this is not recognized. We thus encourage scholars to explore this literature more fully.

For example, there is more to timing than has typically been included in discussions of strategic change. Langley (1999) pointed out that timing includes, among other aspects, deadlines, the simultaneous presence of alternative possibilities, and when information is available in terms of when it is needed. Other scholars (e.g., Ancona et al., 2001a; Yakura, 2002) have demonstrated the importance of timetables as indices of progress. There is also considerable discussion of timing norms, "shared, expected patterns of paced activity" (Ancona et al., 2001a: 648). We have already discussed timing in terms of windows of opportunity, the right time to act (e.g., Albert, 2013; Gersick, 1988; Huy, 2001), and entrainment. There is, obviously, much more to these constructs than we can address here as well. But we will simply add in terms of entrainment that Ancona and Chong (1996: 252) note that the timing of events in organizations may sometimes shift in relation to particular types of environmental change (when external contexts shift dramatically). Because environmental events and other contextual factors affecting strategic change are likely to shift considerably over time (e.g., Denis et al., 2001; Stensaker & Langley, 2010), the timing of certain change events and processes might need to shift to keep in tune with these contexts, regardless of the strategic intention.

We add an additional temporal dimension here, and that is the shape, or trajectory, of change. This is related to sequence, but it is important to single out in its own right. Albert and Bartunek (2017: 291) define shape as "the pattern or curve that results when we plot any property of interest on the Y-axis and time on the X-axis, for example, . . . the varying amount of

effort in each step of a sequential process." This might, for example, refer to the fact that during any change process there may be conflicts and reconciliations, and these will be illustrated by different shapes in dimensions of the change process such as the level of collaboration among those carrying out change at any given time. Shape has been explored by a few scholars who have been interested in the trajectory of change. For example, Stensaker and Langley (2010) uncovered three different change trajectories, incremental, divergent and convergent, within divisions of a multinational oil company carrying out a significant organizational change. These trajectories had their own internal logic, but also had differing impacts on outcomes of change.

Hernes (2017: 603) defines the trajectory of an organization more broadly as "a pattern, or patterning, of events that stretches back into time and extends into the future" in such a way that (p. 604) "a trajectory ... never really starts or ends," in part because each act that takes place in an organization helps to perform the trajectory. Hernes' work illustrates a much broader, process-oriented philosophical perspective (e.g., Helin, Hernes, Hjorth, & Holt, 2014) than those typically discussed by strategy scholars. It is consistent with some empirically based process approaches (e.g., Langley et al., 2013) and also suggests other, more expanded ways of carrying out process theorizing.

As noted by our introduction of shape and trajectory, there are many more temporal constructs that likely play roles in change (Albert, 2013; Bluedorn, 2002). It will be of considerable value to conduct studies of strategic change through multiple explicit temporal lenses. They are likely to provide insights into processes that affect the change initiatives that would not otherwise be recognized.

As our review also revealed, much of the scholarly knowledge about strategic change relies on studies of single changes, whereas research that looks at multiple changes is relatively rare. We believe numerous opportunities exist to advance our knowledge by shifting the focus from single changes to multiple changes. By focusing on multiple changes, scholars can more fully investigate poorly understood temporal dimensions such as sequence, frequency, and rhythm markers. To examine these questions, scholars need to study multiple changes using longitudinal research designs.

Shifting the focus from a single change to multiple changes holds unique potential to (in-) validate existing knowledge and resolve conflicting findings. The isolated consideration of a strategic change that belongs to a sequence of strategic changes could be misleading because a change's position in a sequence could play a critical role (Amburgey et al., 1993; Barkema & Schijven, 2008). Early changes in a sequence are hypothesized to be more beneficial than later changes because as more changes are added, more resources might become tied up in coordination (Barkema & Schijven, 2008). Therefore, a shift in perspective from a single change to multiple changes can provide a holistic picture and explain conflicting findings.

In a similar vein, we acknowledge many of the studies reviewed are based on the assumption that strategic change happens independently. Yet, it almost always occurs in conjunction with or in response to changes in other firms (or other environmental incidents). Furthermore, there are usually multiple changes occurring at the same time—the focal strategic change itself, other (potentially conflicting) organizational changes, and other external changes. Therefore, considering temporal markers of change requires awareness of the broader temporal context in which any change takes place. We will come back to these complexities later.

TIME AND STRATEGIC CHANGE AGENTS

In the previous two sections, we assessed studies exploring the meanings and conceptions of time in strategic change research, and the mappings of strategic change activities to time, including the studies' focus on either single or multiple strategic changes. In this section, we turn to the actors, especially individual executives and TMT members who act as change agents with regard to strategic change. We explore how they (1) perceive time and (2) act in ways that reflect temporal characteristics. These are integrally related to how strategic changes unfold (Table 3).

Perceiving Time

The ways strategic decision-makers perceive particular dimensions of time have significant impacts on their strategic change leadership. Thus, it is important to attend to such perceptions. Individuals perceive time in differing ways and perceive multiple dimensions of time (e.g., Ancona et al., 2001b; Gevers, Mohammed, & Baytalskaya, 2015). Three frequently explored perceptual dimensions that are particularly related to strategic change are *urgency*, *temporal focus*, and *temporal depth*.

TABLE 3
Assessment of "Time and Strategic Change Agents"

Category	Key Concepts and Findings	Open Issues	Future Pathways
Perceiving time	*Urgency*		
	Executives' sense of urgency increases the likelihood of strategic change. Urgency also increases the likelihood of gaining skills necessary to engage in strategic change.	Urgency is associated with the enhanced use of deadlines, which in turn leads to shorter timelines. How does this affect change?	Tensions
	The CEOs' time urgency can influence strategic change (through the CEOs' temporal leadership).	How do time urgent people who are chronically hurried, trying to accomplish too much, affect the success of change	Actors
	Time urgency plays an important role in (fast) strategic change implementation.	What affect does urgency evoke?	Emotionality
	Individual urgency can make it harder to coordinate with others when there needs to be synchrony in change initiatives.		
	Temporal focus		
	The CEO's temporal focus on the past, present, and future combined with environmental dynamism predicts strategic change pace.	What is the role of TMT temporal focus diversity?	Actors
	When executives engage in strategic change in their new companies, they tend to repeat changes they made before.	Past, present, and future temporal focus motivate people in different ways. How does this work for TMTs?	Actors, emotionality
	Executives whose temporal focus is primarily on the past tend to be less strategically flexible than executives who focus more new (present and future) experiences.	What is the role of middle managers' and change recipients' temporal focus in the success of strategic change?	Actors
	Variability on time perspective within TMTs is well suited to the complexity of information facing many firms, and helps to foster successful change.		
	Temporal depth		
	Managers with a high degree of future temporal depth have longer term strategic planning horizons, which affect the speed of strategic change.	Individuals with a high degree of past temporal depth tend to prefer to work more slowly and are less flexible. What are implications for this for strategic change?	Actors, tools and practices, emotionality
	Executives' time horizons affect the likelihood and magnitude of strategic change. For example, short time horizons provide flexibility and quick adaptation but may also give rise to temporal myopia and economic short termism. Long time horizons lend foresight in management but may delay short-term adaptation to changing environmental conditions.	Individuals' past and future temporal depths have been found to be correlated with the past depth seemingly determining future depth. What are implications of this for strategic change?	Actors, tools and practices, emotionality
	Future time horizon diversity across executives is associated with performance, in part because diversity reflects complex understanding of an industry's business and technical aspects.		

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TABLE 3
(Continued)
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Category	Key Concepts and Findings	Open Issues	Future Pathways
Actions reflecting temporal dimensions	*Pacing style* CEOs' pacing styles influence their temporal leadership which, in turn, influence strategic change.	Pacing styles affect all actions within executive teams, even such things as meetings. How do "micro"-pacing styles affect strategic change?	Complexity
	Pacing styles that are deadline oriented inhibit CEO leadership of change, but steady and early action styles may have relatively little impacts.	What are the roles of multiple types of entrainment in pacing strategic change?	Complexity
	Different executives operate out of different pacing styles (e.g., time vs. event based) and these styles affect how they respond strategically. *Polychronicity*		
	Firm-level polychronicity increases strategic change decisions and implementation.	Polychronicity affects a sense of urgency. How do these go together in a way that leads to long-term effectiveness, given some coordination problems that urgency causes?	Complexity
	Higher team level polychronicity is likely to be beneficial to TMTs' responsiveness to either negative events or positive events.	What is necessary for TMT members demonstrating differing levels of polychronicity to work together successfully?	Actors, complexity
	More polychrome teams obtain better information and consider and integrate that information in a more effective manner, thereby developing better strategies on which they might capitalize. TMT polychronicity has a positive impact on decision speed, which is positively related to financial performance, but a negative impact on strategic decision comprehensiveness, which is then negatively related to financial performance.		

Urgency. Urgency may be a characteristic of a particular event (e.g., Morgeson & DeRue, 2006), but it is also a characteristic of individuals. Shipp and Cole (2015: 243) describe urgency as an individual characteristic as "a consistent concern with the passage of time, with those higher in time urgency feeling generally hurried across situations."

A small amount of research addresses relationships between change agent urgency and strategic change. Dutton and Duncan (1987a), for example, proposed that a sense of urgency increases emotional activation (cf. Russell & Barrett, 1999) and thus is likely to lead executives to recognize the need to diagnose strategic issues more rapidly than do those who do not feel such a need. Ginsberg and

Venkatraman (1995) tested this proposition with regard to urgency in taking initiative with regard to strategic issue diagnosis in a study of strategic responses to the ability to file income tax returns electronically in the United States. The authors studied several different tax return preparation businesses, exploring questions such as the degree to which the managers of the businesses felt urgency regarding the need to craft a strategic response to this issue. They found that, consistent with Dutton and Duncan (1987b), the perceived urgency of the e-filing initiative affected managers' acquisition of technological capabilities for responding to the initiative.

In a recent survey study of managers in Chinese SMEs, Chen and Nadkarni (2017), explored how

CEOs' temporal leadership mediated the relationship between their temporal dispositions, including urgency, and their firms' innovation, corporate venturing, and strategic renewal activities, all of which impact on strategic change. They found that CEOs' time urgency was positively related to their temporal leadership and corporate entrepreneurship. This is consistent with the argument by Jansen and Kristof-Brown (2005) that managers' level of urgency for a change, as long as it is expressed to others, establishes "establishes initial energy levels for the change" and impacts "the level of effort devoted to subsequent actions." In other words, research linking strategic change with change agents' time urgency suggests that urgency may lead to more vigilance regarding issues that needed to be addressed and that one of its main impetuses is to foster much more energy for accomplishing change.

In addition, actor level research suggests that there is much more to a sense of urgency than has been examined in strategic change research, and that more examination would be of great value for understanding strategic change processes. For example, a sense of urgency is associated with a stronger perception of deadlines (Conte, Rizzuto, & Steiner, 1999; Gastorf, 1980; Glass, Snyder, & Hollis, 1974), which leads to an increased pace of work (Conte, Schwenneker, Dew, & Romano, 2001), which in turn impacts timelines (Yakura, 2002) associated with strategic change initiatives, likely shortening them. Relatedly, Waller, Conte, Gibson, and Carpenter (2001: 589) noted that time-urgent change agents "tend to schedule more activities than comfortably fit into the available time (Friedman & Rosenman, 1974). Thus, they are chronically hurried, trying to fulfill all of their ambitions and commitments under deadline situations that they have often created." In other words, change agents who feel a sense of urgency may often try to accomplish too much, and this may sometimes limit the success of their strategic initiatives.

Finally, individual senses of urgency are likely to interfere with the ability to coordinate with others when there needs to be synchrony in multiple strategic change activities. As Leroy, Shipp, Blount, and Licht (2015: 770) note, "[p]eople who score high on individual hurriedness are concerned about the efficient use of time, which leads them to structure and plan their time carefully and to work rapidly to stay on schedule." They may be "unwilling to temporally adapt to synchronize with others' pace as it may detract them from their plan and may threaten their need to sustain a fast pace." Thus, individuals with

a strong sense of urgency may do better on individual strategic change initiatives in which they do not need to coordinate much with others or even with other change initiatives. This topic has not been explicitly explored, but is likely to be an important component of strategic change.

Temporal focus. Temporal focus refers to the extent to which individuals, groups, and organizations characteristically direct their attention to the past, present, and/or future (Bluedorn, 2002; Shipp, Edwards, & Lambert, 2009; Zimbardo & Boyd, 1999). Temporal focus is concerned about the characteristic direction (or combination of directions) of temporal attention.

A strong *past focus*, which is associated with reflection on the past and repeated use of past memories in decision-making (Clark & Collins, 1993; Strack, Schwarz, & Gschneidinger, 1985), can "enhance learning when previous experiences and observations are analyzed for relevant lessons" (Shipp et al., 2009: 1). Individuals with a strong *present focus* possess a "here and now" orientation and emphasize the current time frame in decision-making. *Future focus* is associated with thinking primarily about what the future holds and with envisioning of future events (Bluedorn, 2002).

Temporal focus, whether executives are aware of it or not, is important for strategic change initiatives. For example, in a study of the movement of top managers over multiple organizations, Boeker (1997b) found that when executives engage in strategic change in their new companies, they tend to repeat changes they made before, such as entering markets where their former firms were active, in order to build on their past experience. Relatedly, in a study of strategic flexibility, Nadkarni and Herrmann (2010) demonstrated that executives who are averse to new experiences, that is, whose temporal focus is primarily on the past, tend to be much less strategically flexible than executives who are more open to new (present and future) experiences.

The role of past experience also extends to the organization as a whole. Turner, Mitchell, and Bettis (2013) studied whether prior experience with innovations enables organizations to keep introducing innovations on a consistent basis, as opposed to accelerating and decelerating manners. In a study of generational product innovations in the microcomputer software industry, they found that achieving temporal consistency of ongoing innovation is facilitated by prior innovation experience. Thus, a temporal focus that included the past was important for present innovation patterns.

One way temporal focus has been explored is through long-term (vs. short-term) orientation as one of the cultural characteristics described by Hofstede (1991, 1993, 2004). The phrase long-term orientation has been used in various ways, but as Hofstede (1993: 90) summarized, "[o]n the long-term side one finds values oriented towards the future, like thrift (saving) and persistence. On the short-term side one finds values rather oriented towards the past and present, like respect for tradition and fulfilling social obligations." Long-term orientation is a "dynamic, future-oriented mentality" (Hofstede & Bond, 1988). Thus, for Hofstede, this cultural dimension reflects temporal focus. Hofstede's distinction between long- and short-term orientation has implications for strategic change. For example, Geletkanycz (1997), in a global survey of senior executives, found that executives with a long-term orientation are more open to change than executives with a short-term orientation.

The diversity of temporal foci or perspectives within TMTs is also important for strategic change (cf. Gibson, Waller, Carpenter, & Conte, 2007; Nadkarni & Chen, 2014). Mohammed and Harrison (2013: 248) theorized that "[w]hen team members have similar time perspectives, their interpretive biases may lead them to ignore or disregard valuable information. Therefore, variability on time perspective is well suited to the complexity, competitiveness and evolving environment of many teams in modern organizations." They added that "top management teams composed of only visionaries, and those whose members are grounded only in the 'here and now,' are unlikely to meet both exploration and exploitation performance requirements."

Some research has supported the need for both future temporal focus and diversity of temporal foci. For example, West III and Meyer (1997) studied the relationship between both future time focus and the heterogeneity of temporal focus within TMTs and strategic change within young technology ventures. Perhaps not surprisingly, they found that strategic change was more likely to occur when TMTs have a higher *average* future-oriented temporal focus. But they also found that teams with a very high percentage of members with a strong future focus were less able to coalesce around a present focus, when this focus was necessary to accomplish strategic change. They inferred that a balance of future and present oriented members was needed for strategic change.

Nadkarni and Chen (2014) studied the relationship between CEO temporal focus and their companies' rate of new product innovation. Based on a longitudinal analysis for firms in 19 industries, they showed that "in stable environments, new products are introduced faster in firms headed by CEOs with high past focus, high present focus, and low future focus. In dynamic environments, new products are introduced faster in firms headed by CEOs with low past focus, high present focus, and high future focus" (Nadkarni & Chen, 2014: 1819). In other words, there is not one best focus. What works most effectively in accomplishing strategic change depends in part on the characteristics of the environment, the combination of temporal foci within the TMT, and the extent to which these are congruent.

There are additional ways that temporal focus is likely to play an important role in strategic change than those that have drawn the attention of strategy scholars. In particular, Karniol and Ross (1996) introduced the motivational dimensions of temporal focus—the degree to which focus on the past, present, and the future spur people on to act in some particular way. Briefly, they suggested that a future temporal focus may energize people's goals by helping them "imagine various futures (and) . . . select their preferred end states" and then plan to achieve these (Karniol & Ross, 1996: 595). In a related vein, Strobel, Tumasjan, Spörrle, and Welpe (2013) suggested that a present temporal focus might lead people to emphasize immediate, short-term, proximal goals, which likely motivate people because they enable them to gauge progress (Bandura, 1991). Finally, a past temporal focus, especially if it includes any negative dimensions, may motivate people to take action to break with the past, or to complete unfinished business. It can also color perceptions of the present by suggesting its similarity with the past, something that may impact change initiatives (e.g., Rafferty & Restubog, 2010).

In other words, past, present, and future temporal foci could all play important motivational roles in carrying out strategic change. Executives' motivations for change may stem from the past, present, and/or future. These temporal foci incorporate different types of motivation and could foster different change processes and outcomes.

Temporal depth. Temporal depth refers to "the temporal distances into the past and future that individuals and collectivities typically consider when contemplating events that have happened, may have happened, or may happen" (Bluedorn & Standifer, 2006: 201). Temporal depth differs from temporal

focus in that it is concerned about the length of a horizon, not just whether there is one.

This is a dimension on which there is considerable variation among individuals and even whole societies (Bluedorn & Ferris, 2004). For example, Bluedorn (2002, Appendix) created a temporal depth index that asks respondents questions such as "when I think about the short-term (or mid-term or long-term) future I usually think about things this far ahead (ranging from one day to more than 25 years)." Equivalent questions are asked about the short-to-mid-to-long-term past. Temporal depth refers to the sum of the temporal distances into the past and the future an individual or collectivity typically considers.

Less formally, some aspects of temporal depth have been described in terms of time horizon or long-term orientation (e.g., Bateman & Barry, 2012; Bluedorn & Waller, 2006). Bluedorn and Ferris (2004) note that future temporal depth is studied more often than past temporal depth. The phrase long-term orientation has various meanings, and the primary meaning that emerges from Hofstede's (1991) research on national cultures more properly belongs to discussions of temporal focus. However, long-term (future) orientation can also be distinguished from a short term (future) emphasis as a dimension of future temporal depth. Thus, Wang and Bansal (2012), in a survey of CEOs and presidents of new and older Canadian manufacturing companies, found that firms whose CEOs had a long-term orientation (rather than a short-term orientation) had better financial performance and that their long-term orientation magnified the impact of the firms' corporate social responsibility initiatives. This suggests that long-term future temporal depth likely facilitates strategic change.

As Lee and Liebenau (1999) and Nadkarni, Chen, and Chen (2016) note, executives with a high degree of future temporal depth have longer term strategic planning horizons (Das, 1987, 1991), which in turn affect the speed of attempted strategic change, though this relationship is not linear. More generally, Nadkarni et al. (2016: 1133) argue that "[s]hort time horizons provide flexibility and quick adaptation but also give rise to temporal myopia and economic short termism (Laverty, 1996; Marginson & McAulay, 2008). Long-time horizons lend foresight in management but delay short-term adaptation to changing environmental conditions (Levinthal & March, 1993; Miller, 2002)."

Nadkarni et al. (2016) studied how the relationship between executives' past and future temporal depth and the velocity of their industry (the extent to which new opportunities appear and disappear) shaped firms' competitive aggressiveness. Based on panel data collected over several years from 258 firms in 23 industries, they found that executive "past temporal depth promoted aggressiveness in low-velocity industries but hindered it in high-velocity industries, whereas future temporal depth promoted aggressiveness in low-velocity industries but had an inverted-U relationship in high-velocity industries" (Nadkarni et al., 2016: 1149). In other words, temporal depth may not simply have a main effect on executives' approach to strategic change; it interacts with dimensions of a situation to affect outcomes. Further, as Nadkarni et al. (2016) also note, past temporal depth is not identical to present or future depth (even though it is related, as we will discuss below), and executives often work with both types of temporal depth, not just one, whether they are conscious of this or not.

Further, factors in the organization's environment might affect executives' time horizons both individually and collectively. For example, Judge and Spitzfaden (1995) studied how factors within the biotechnology industry (an industry that is very fast moving and has uncertain outcomes) was related to executives' future temporal depths (which they referred to as strategic horizons). They were particularly interested in the diversity (i.e., the portfolio) of these temporal depths across top executives. Judge and Spitzfaden (1995) found that future time horizon diversity across top executives was positively associated with financial performance in these firms, in part because this diversity reflects complex understanding of both business and technical characteristics of the industry.

While not explicitly using the term "temporal depth," Schultz and Hernes (2013) studied the relationship between past and future by exploring how strategic leaders used memory forms in invoking the past and how these affected identity claims in the future. They found that LEGO managers, in two different strategic contexts, evoked the past in ways that influenced identity claims for the future and that also affected "how differences in time span were echoed in the past and future" (p. 2). Their findings support the claim that past temporal depth affects future temporal depth and suggests ways that managers can make use of the past to influence the future.

These findings are important with regard to strategic activities, but there other aspects of temporal depth that likely also affect strategic change, though their links have not been investigated very much. For

example, individuals with a high degree of past temporal depth tend to prefer to work more slowly and are less flexible (Bluedorn & Martin, 2008). Further, individuals' past and future temporal depths have been found to be significantly and positively correlated (Bluedorn, 2002: 265–272; El Sawy, 1983), with past depth seemingly determining the future depth. Thus, for example, since Judge and Spitzfaden (1995) focused only on future temporal depth, their investigation did not include past dimensions that likely have important impacts on future temporal depth.

Finally, Reinecke and Ansari (2017) suggest the impacts of temporal depth on important issues such as societal development and sustainability, issues very pertinent to strategic change. They suggest that "[s]hallow temporal depth leads to focus on tangibly quantifiable, short-term deliverables to show development outcomes to consumers and donors. In contrast, a long temporal depth emphasizes long-term changes and a focus on intangible goals, with development seen to be 'taking time' in order to address underlying causes for poverty" (Reinecke and Ansari (2017: 411). In other words, temporal depth relates not only to executives' visions for their own companies, but also their larger visions for the world in which they operate.

Summary. As the above review suggests, individual change leaders' perceptions of temporal dimensions of urgency, temporal focus, and temporal depth may have an important impact on the process of strategic change. There is not one best way through which this happens; rather, the process is shaped by interactions with characteristics of particular situations. These topics have been explored by a small numbers of studies of strategic change, but obviously much more can be investigated. We will elaborate potential future research on such issues later.

Actions Reflecting Temporal Characteristics

In addition to these three perceptual temporal characteristics, scholars have also studied actions that reflect temporal characteristics. In particular, these studies have focused on pacing styles and polychronicity.

Pacing styles. We have discussed several themes associated with pacing in the section on change activities. However, pacing styles also characterize individuals, and these have impacts on strategic change as well. Appreciation of the importance and complexities of pacing associated with strategic change has been growing over the past several years.

The importance of individuals' pacing styles was introduced by Blount and Janicik (2002), based on the recognition that people have varying expectations regarding how events activities take place over particular time frames. Gevers et al. (2015: 502) define pacing style as "behavioral tendencies regarding the distribution of effort over time in working toward deadlines . . ." This includes (1) the *deadline* action style, which reflects a concentration of effort late in task execution; (2) the *steady action* pacing style, which reflects a tendency to spread out work evenly over time; and (3) the *U-shaped action* pacing style, which reflects a tendency to systematically combine both early and late effort distribution. Others have also discussed early action pacing styles that concentrate effort early in task execution (e.g., Chen & Nadkarni, 2017). These diverse dispositions help to explain why that the pace of strategic change is unlikely to be uniform over time; individual change agents rarely maintain consistent temporal paces.

To illustrate, Chen and Nadkarni (2017) studied how CEOs' temporal leadership mediated the relationship between their temporal dispositions, including their pacing style and their firms' activities in regard to innovation, corporate venturing, and strategic renewal. In a sample of 129 Chinese firms, they found that pacing styles that were deadline oriented inhibited CEO leadership of strategic change, but steady and early action styles had relatively little impact. This suggests that individual pacing style did not help strategic initiatives but could hurt them.

Further, there can be differences in the pacing styles of various change managers working on the same change, though from different perspectives. Gersick (1994) compared the pacing styles of the CEO and the lead investor of a venture capital firm regarding a start-up company. She found that the lead investor tended to use more reactive event-based pacing, while the CEO tended to use more proactive time-based pacing, and these differences sometimes led to conflict between them. She argued that each approach had benefits: Time-based pacing "generates a predictably timed alternation of attention between momentum and change" (Gersick, 1994: 40), and seems to work well in non-routine situations that require flexibility. Event-based pacing, on the other hand "regulates people's attention through their recognition of specific events that signal when actions can or should be initiated, corrections made, or endeavors considered complete" (Gersick, 1994: 41). It is particularly appropriate for situations where it is important to respond

immediately to new and emerging conditions." In other words, Gersick's study makes evident that conflicts regarding pacing may play a role during times of strategic change, especially when those making strategic decisions are operating out of very different frameworks. Additional illustrations of such conflicts are presented by Dubinskas (1992) and Reinecke and Ansari (2015), among others.

These emphases on pacing are important, and there is even more to the construct that may be pertinent to strategic change in ways that have not been addressed. Gevers et al. (2015: 501) commented that "the way individuals pace their time in meeting deadlines is central to their daily experience as it can significantly affect lifestyle decisions and may seriously impact a variety of work-related behavior and outcomes." In other words, pacing is part of the daily routine of executives (and other employees). Meetings in which particular strategic change initiatives are discussed are characterized by particular types of pacing. Are potential strategic changes introduced up front? At the very end of the meeting? Even apparently small occurrences like this may have substantial impacts on strategic change activity, including whether it really happens. However, the role of pacing in day-to-day activities has not been explored as much as it should be with regard to strategic change decisions and actions.

Polychronicity. Polychronicity reflects the recognition that some individuals (and teams, cf. Kaplan, 2009) prefer to work simultaneously on multiple tasks, switching back and forth among different activities, whereas others prefer to work on one task at a time (Ancona et al., 2001b; Bluedorn, Kalliath, Strube, & Martin, 1999; Slocombe & Bluedorn, 1999). For Gilson, Litchfield, and Gilson (2014: 152), polychronicity refers to the number of tasks or events that individuals prefer to be involved with at any one time (Bluedorn et al., 1999; Mohammed & Harrison, 2013) and the degree to which they are open to interruptions at work. Do individuals want to complete one task before beginning a second? Or are they comfortable rotating through multiple tasks at once?

With regard to teams, Kaplan (2009: 107) described polychronicity as the "extent to which *the group members collectively* (1) prefer to be engaged in multiple tasks or events *within any given length of time* and actually are so engaged (the preference strongly implying the behavior and *vice versa*), and (2) believe their preference is the best way to do things." In other words, in regard to teams, there may be variation in how much the team as a whole is open to various degrees of polychronicity on the part of different members.

Broadly speaking, polychronicity is likely related to TMTs' strategic (change) activity. Kaplan (2009) suggested, for example, that higher team level polychronicity is likely to be beneficial to TMTs' responsiveness to either negative events or positive events on which they might capitalize. Kaplan (2009) also suggested that teams with higher polychronicity are more likely to have surveyed the task environment regularly and so have a more accurate assessment of it. Kaplan (2009: 116) further argued that "[in] addition to collecting better data, polychrome teams also might produce superior strategy due to the manner in which they consider that information. Although more monochrome teams may consider information sequentially, teams higher in polychronicity likely will consider their multiple projects and the information regarding each in a more concurrent manner. Several studies demonstrate that simultaneous consideration of contingencies and decision alternatives fosters superior performance (e.g. Eisenhardt, 1989)."

Partially consistent with this argument, Souitaris and Maestro (2010: 657) explored the impacts of TMT polychronicity, which they defined as "an attention structure that favors the attendance of unscheduled interpersonal interactions over planned tasks" and which they measured by means of a questionnaire distributed to CEOs, on new technology venture financial performance. They found that TMT polychronicity had a positive impact on decision speed, which was positively related to financial performance, but a negative impact on strategic decision comprehensiveness, which was then negatively related to financial performance. Argouslidis, Baltas, and Mavrommatis (2015), drawing on Souitaris and Maestro (2010), found that firm-level polychronicity enabled faster product elimination decision reaching and implementation. Results of a study of 175 consumer product elimination decisions showed that, among other things, the speed of product-elimination decisions and their implementation were positively related to the polychronicity of the decision-making team. Thus, there are at least some ways in which polychronic teams may outperform more monochromic teams. These insights suggest, then, that strategic change may be facilitated by TMTs that vary in the polychronicity they enable. Greater polychronicity seems generally adaptive in strategic change.

In addition, individual-level analyses (Bluedorn & Martin, 2008; Conte et al., 1999) show that polychronicity is positively related to a sense of urgency,

although it is not positively related to stress. If polychronicity is associated with urgency, then it also may be associated with such issues as difficulties in synchronizing change with others (Leroy et al., 2015).

Summary. As our review shows, two temporal dimensions of action, pacing styles and polychronicity have been studied with respect to strategic change. Both of these offer insights into strategic change processes that are often not noticed, but that have important impacts.

Overall Summary and Assessment

We have discussed a number of temporal characteristics of change agents leading strategic change, both their perceptions (urgency, temporal focus, and temporal depth) and their actions (pacing styles, polychronicity). This review reveals that change agents' temporal modalities of the past, present, and future represent an important dimension in our understanding about strategic change. Earlier studies in particular have used demographic characteristics such as age, tenure, educational background, and prior work experience as proxies to study whether and how change agents' cognitive perspectives influence strategic change. These studies have rarely been concerned with time issues. However, as summarized above, more recently scholars have shifted the focus to psychological constructs to study whether and how change agents' cognitive (such as openness, conscientiousness) and affective dispositions (e.g., emotional stability, extraversion) influence strategic change. This trends reflects a shift toward an increased focus on the psychological foundations in upper echelons research in general in an attempt to open the black box of the links between executives and organizational outcomes (Hambrick, 2007). We have focused on these works because they are more explicit about the change agents' temporal characteristics.

As summarized above, many of these works have linked executive and TMT characteristics (i.e., how the change agents perceive time and enact temporal dimensions) to strategic change and respective outcomes. Despite many valuable insights about strategic change, its actual mechanisms have remained largely black boxed. Yet, if we want to advance a more complete understanding about strategic change, we need to explore the processes and tools and practices.

Relatedly, we have discussed these temporal constructs almost as if they are static. Indeed, existing research has largely remained static (i.e., assumed that perceptions and ways temporal dimensions such as temporal depth and focus remain constant over time). However, that need not be the case. It is possible and, undoubtedly desirable, for executives to develop their temporal capabilities. Indeed, a few studies have shown that change agents' perceptions of time and probably also the ways they enact time can involve dynamic and multifaceted processes. As we noted above, Staudenmayer et al. (2002) revealed that so-called "temporal shifts," that is, events that change actors' perceptions of time, can influence strategic change. We need to learn much more about such dynamic and multifaceted processes. For example, how do the time perceptions unfold and maybe interact? How do they relate to actual behavior and decision-making?

Temporal capabilities include a broad range of skills that allow people to comprehend and make use of various conceptions of time. For example, they might become aware of the urgency with which they take strategic initiatives, and the implications of this urgency for responses to such initiatives. They might learn to expand their temporal depth both forward and backward, and might also consciously focus on both the past and the future. They might become aware of their pacing style and polychronicity, and check to be sure that their TMT includes a range of these. In other words, there is a good deal that managers might do to become aware of personal temporal dimensions (even starting with the fact that they are perceiving and enacting time in ways not entirely consistent with clock time) as well as temporal dimensions present in their organization and associated with their strategic change activities.

PATHWAYS FOR FUTURE RESEARCH

Our assessment of existing knowledge shows that time plays a crucial role in strategic change research. Specifically, our review, summarized in Tables 1–3, revealed three broad categories of time in strategic change research: (1) varying conceptions of time in strategic change, including studies' focus on clock time, event time, and life cycles, (2) time and strategic change activities—including the studies' focus on either single or multiple strategic changes along with the roles of diverse temporal elements—including sequence, disruptive events, timing, pacing, duration, frequency, and rhythm—and (3) time and strategic change agents—including their perceptions of time in terms of urgency, temporal focus,

and temporal depth, and the ways they enact temporal dimensions by means of pacing and monophony vs. polyphony.

In the previous sections, we have summarized the existing knowledge about strategic change within these key categories. Throughout this review, we have also shown that the three temporal categories of strategic change are interrelated; none of these exist without the other two. In addition, we have highlighted several limitations and open issues that offer possibilities for future research within the categories. Indeed, our analysis demonstrates that despite providing a wealth of knowledge about the antecedents and consequences of strategic change, the extant knowledge is considerably limited with respect to underlying temporal processes and dynamics.

In this section, we thus go one step further and lay out broad pathways for future research which span the previously reviewed categories. We emphasize the need to learn more about the complex and multifaceted processual, temporal, dynamics in strategic change.

As noted earlier, a process view is very well designed to explore interrelated temporal dimensions. In fact, it is often in process studies that temporal characteristics like dynamism (Langley, 1999; Langley et al., 2013), timing and pacing (Pettigrew et al., 2001), and rhythm (Albert, 2013; Amis et al., 2004; Bingham & Kahl, 2013; Bluedorn, 2002) are empirically found. Hernes (2014: 39–40) describes process thinking as concerned with the "becoming of things, meaning that things (a human being, a machine, a 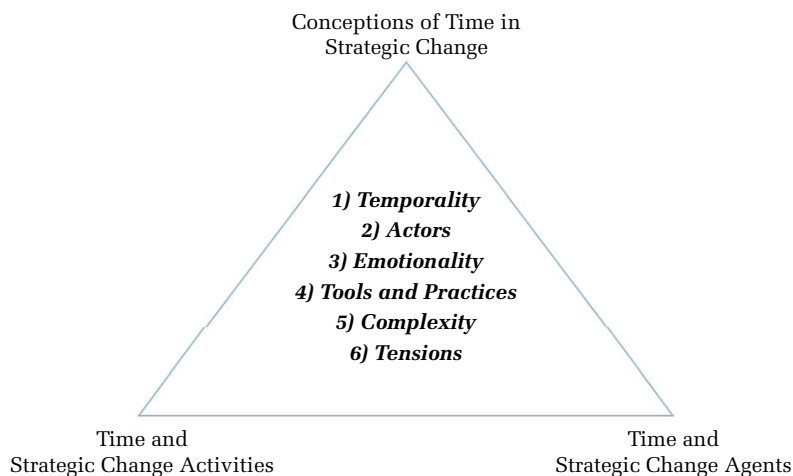routine, a goal) are not to be considered as existing in a final state, but rather in a continuous state of becoming through their changing relationships with other things." In other words, a process perspective is genuinely concerned, almost by definition, with dynamics and the unfolding of events over time.

Consistent with an emphasis on the importance of processual dynamics, we thus put forward six pathways for future research: (1) temporality, (2) actors, (3) emotionality, (4) tools and practices, (5) complexity, and (6) tensions. In Figure 2, we graphically illustrate how these pathways fall within the interrelated categories discussed above. In the last column of Tables 1–3, we have already suggested how the individual topics we have explored within each category can be furthered through these various pathways. In Table 4, we go one step further and provide exemplary research questions along the pathways themselves.

Pathway 1: Temporality

As our review revealed, time is prevalent in strategic change. Yet our analysis also revealed that relatively few empirical studies that address strategic change are anchored in the time literature. For example, a select group of studies (Amis et al., 2004; Bergh & Lim, 2008; Chen & Nadkarni, 2017; Herrmann & Nadkarni, 2014; Klarner & Raisch, 2013; Mohammed & Nadkarni, 2011; Nadkarni & Chen, 2014; Nadkarni et al., 2016; Nadkarni & Narayanani, 2007) explicitly refer to at least one time-theory article in the management literature (Ancona et al., 2001a, 2001b; Bluedorn & Denhardt, 1988; Butler, 1995; George & Jones, 2000;

FIGURE 2
Time in Strategic Change Research and Future Pathways

Huy, 2001; Mitchell & James, 2001; Mosakowski & Earley, 2000; Ofori-Dankwa & Julian, 2001). We thus believe that future research should integrate time-related concepts. We urge scholars to design future studies of strategic change to incorporate diverse types of temporal dimensions and integrate the temporal context into their understandings of strategic change. In this section of the paper, we will build on what we have reviewed to this point.

First, we see a need to broaden and deepen understanding of the temporal context of strategic change. Although scholars have considered diverse contexts, such as the geographic and/or institutional environment, extant studies have not paid sufficient attention to the temporal context. The firms' external and internal contexts are embedded in time, and are influenced by past decisions and future orientations (Greenwood & Hinings, 1993). By recognizing the centrality of time and discussing potential temporal effects, researchers can more accurately understand and interpret their findings. Recognizing the interactions between strategic change and its temporal context can help explain how managers perceive and use time as a key resource.

For example, the temporal context can be framed in terms of an "era" (Johns, 2006; Lenz & Engledow, 1986). Within an era, "time affects the web of social and economic relationships that surround any aspect of organizational behavior" (Johns, 2006: 392). How do organizations initiate strategic change in an era of fast technological innovation? How is strategic change affected in an era of disruptive social political struggle?

The temporal context might also relate to distinct stages in an industry's or an organization's life cycle. For example, the effect of time in stable phases might differ from its effect in turnaround situations in which the organization must act under conditions of crisis or under severe time pressures (Ancona et al., 2001a). Time pressures can arise from declining performance or deadlines, and are tied to the anticipated duration of strategic change. Time frames are compressed, and both the past and the future might be perceived as less important than the present. Under time pressure, change agents are likely to accelerate their information processing (i.e., to spend less time on each piece of information) and to be more selective than they would be otherwise in processing information (i.e., to focus on the most important and/or negative information) (Ben Zur & Breznitz, 1981). One might therefore expect firms to behave very differently under varying levels of time pressure.

In particular, and to the extent possible, research designs with large samples that display high variance and/or (very) long time frames could generate valuable insights. For example, Amburgey et al. (1993) studied a population of 1,011 Finnish newspaper firms over 193 years. In another study, Amburgey and Dacin (1994) explored 262 large firms over 28 years. These studies revealed important insights about the dynamics and temporal contingencies of change such as how some immediate effects (the likelihood of bankruptcy as well as the likelihood of additional changes of the same type) diminish over time and depend on the stage in a firm's life cycle. Large samples that exhibit high variance, allow for comparisons of the strategic change behavior of firms in different temporal contexts (e.g., comparisons of turnaround firms with high performers). Longer time frames allow scholars to examine the effects of the various stages of life cycles. Overall, such research holds a unique potential to inform our knowledge about the processual dynamics of strategic change.

Second, in addition to what we have already discussed in our assessment of "Time and Strategic Change Activities," we stress that the choice of time scales can affect results. The need for a temporal distinction between time scales is best highlighted by the strikingly different findings that emerge when the time span is expanded from the short term to the long term. As we noted earlier, strategic change has been shown to have negative performance implications and to disrupt organizational routines in the short run, but it might produce positive performance effects in the long run when the firm is able to harvest the benefits fully (Amburgey et al., 1993; Barkema & Schijven, 2008; Meyer & Lieb-Dóczy, 2003). But how long is the long run? The length of temporal intervals can change the meaning of concepts, relationships, and interpretations (Bergh & Lim, 2008). In other words, theoretical explanations for the same construct may vary in accordance with interval length.

Furthermore, there is a need to introduce deliberate time lags based on the underlying mechanisms (Bergh, 1993). Time lags are important in relation to (causal) sequences. Although time lags are (sometimes) used, their lengths seem to be determined without a clear logic. This limitation is evident, for example, in research on the relation between executive turnover and strategic change (e.g., Cho & Hambrick, 2006; Gordon et al., 2000; Wiersema & Bantel, 1992). The mixed findings raise questions about cause and effect that might be resolved by a focus on temporal order. Time lags may

also clarify the question of whether (or when) new members should be hired to help overcome resistance to change within the firm and to accomplish the necessary shift in mental models, or to actually initiate and implement the strategic change. The inclusion of time lags would also account for the likelihood that a new management team might need some deliberation time to plan its change processes and to convince various stakeholder groups to support the proposed strategic change.

Pathway 2: Actors

As described previously, a common theme in the strategic change literature is that actors' beliefs, cognitions, and personalities play an important role. That is, they foster or impede their abilities to recognize the need for change, to initiate and implement it. As our review has revealed, scholarly knowledge about actors relates to a great extent to the CEO and the TMT (i.e., the top management), who are seen as the decision-makers and change agents because "they have control over the funds and the legal and formal authority to make strategic interpretation and choices" (Bohman & Johansson-Lindfors, 1998: 59). Thus, we need to learn much more about the multiple actors who lead strategic change or are otherwise involved in it: changes strategists, change agents as well as change recipients. Therefore, future research in this area should embrace the variety of potential actors inside and outside the firm—in relation to diverse temporal constructs—as well as the interactions between them in order to advance our understanding of the multifaceted processes.

We believe that fruitful areas for future research center on *the temporal markers of the firms' strategists* who should almost by definition play an important role in strategic change. Besides the CEO, those typically include the chief strategy officers (CSOs) (Breene, Nunes, & Shill, 2007; Menz & Scheef, 2014), strategic planners (Whittington, Yakis-Douglas, Ahn, & Cailluet, 2017), and heads of corporate functions (Campbell, Kunisch, & Müller-Stewens, 2012; Kunisch, Müller-Stewens, & Campbell, 2014; Menz, 2012). For example, while Menz and Scheef (2014) show that firms increasingly often use the position of a CSO and reveal several strategy-related factors that predict the likelihood of CSO presence in firms' TMT, little is known about how these people influence the propensity and outcomes of strategic change. In a related study, Whittington et al. (2017) presented the results of a longitudinal analysis of

the changing job characteristics of strategic planners and revealed that "the secular increase in environmental turbulence is negatively associated with forecasting (temporal range), economics and analysis (processes) and centralization (organizational location), especially when compared with marketing" (p. 1).

As noted earlier, some studies have already analyzed the roles of other parties than the CEO and the TMT. These include studies of boards (e.g., Golden & Zajac, 2001; Goodstein, Gautam, & Boeker, 1994; Haynes & Hillman, 2010; Johnson et al., 1993; Oehmichen et al., 2017; Triana et al., 2014; Westphal & Fredrickson, 2001), middle managers (e.g., Balogun, Bartunek, & Do, 2015; Huy et al., 2014; Rouleau, 2005), employees (e.g., Sonenshein, 2009; Sonenshein & Dholakia, 2012), and management consultants (e.g., Ginsberg & Abrahamson, 1991; Greenwood, Suddaby, & Hinings, 2002). These studies have contributed to a better understanding about strategic change and a more realistic picture of the roles of the CEOs and TMTs in strategic change.

Notwithstanding these works, various opportunities for future research with respect to these and other internal actors exists. For example, who are the crucial actors (whether formal change agents or not) and what are their dominant temporal markers? When and how and why do internal actors resist strategic change in relation to different understandings of temporal markers? As a study by Balogun et al. (2015) suggested, several senior managers who later rejected strategic change were open to it at first until they saw how poorly the change process was being carried out. Jones and Van de Ven (2016) recently showed that resistance to change grew increasingly stronger over the course of a 3-year change effort in a set of health-care clinics, though it could be mitigated by supportive leadership. Temporal dimensions of receptivity to and/or resistance to change have rarely been explored, but as these studies show, they may play important roles in change.

As we have indicated, middle managers are likely to play a crucial role in strategic change, especially how they convey strategic change and try to convince others to accept the change (Rouleau, 2005; Rouleau & Balogun, 2011) and with respect to implementation (cf. Floyd & Wooldridge, 1992; Wooldridge et al., 2008). However, there is much more we need to learn in regard to their temporal perceptions and behaviors. For example, exploration into future temporal focus and temporal depth might help scholars to understand why some

TABLE 4
Pathways for Future Research

Pathways	Illustrative Research Questions
(1) Temporality	• How do the conceptualization and measurement of time-related constructs affect the occurrences and consequences of strategic change? How can appropriate time windows for strategic change be determined? What roles do different time lags play? How do the applied time windows affect studies' findings? How does the length of the time windows influence the course of strategic change?
	• How does strategic change behavior vary with "subjective" and "objective" time constructs? How do different time perceptions affect multiple changes?
	• How do organizations initiate, implement, and complete strategic changes in different eras (e.g., in times of fast technological innovation or disruptive political struggles)?
	• How do firms facing varying circumstances initiate, implement, and complete strategic change (e.g., during turnaround situations with time pressures or in stable phases)? When do turnaround firms and high performers differ in their strategic change behavior? How does strategic change behavior differ over the organizational life cycle?
(2) Actors	• What are the temporal capabilities of change agents, and how do they affect strategic change and its outcomes? How does a change agent's temporal focus influence his or her strategic change decisions? How do middle managers' time perceptions influence implementation and success of strategic change?
	• How should internal change agents make use of temporal markers in leading change? Who are crucial actors other than strategists and what are their temporal markers? What are the particularly important roles of middle managers in strategic change?
	• Who are the multiple external actors who play crucial roles in strategic change? What are important temporal markers for each set of external actors?
(3) Emotionality	• What are roles of emotions throughout strategic change processes? For example, what types of emotions are likely prevalent at different times during change, depending in part on perception? What types of emotions are prevalent at different times for middle managers, or for other change recipients?
	• When and how do particular types of emotions influence decisions about strategic change? What types of emotion are more likely to foster or impede what types of strategic change?
	• How do change leader actions affect change recipients' emotions and actions, and how is this impacted by the time period of change?
(4) Tools and Practices	• What roles do tools and practices play in the temporal management of strategic change? When and how do actors use what kind of tools over time? Which kind of tools and practices are more suited in which situations? Which kind of tools are less effective or even detrimental to change?
	• How are strategic change capabilities developed over time? How are they maintained, and do they have a tendency to deteriorate over time?
	• How can strategic changes be timed most effectively? What tools can help managers coordinate sequences of strategic changes in relation to other events and changes? How do managers temporally prioritize and allocate their resources, including time, during change initiatives?
(5) Complexity	• What is the polyphonous nature of strategic change? What are other types of events likely to be occurring during strategic change that might affect its course? How might the frequency and rhythm of multiple strategic changes be interrelated?
	• What is the optimal timing of particular changes within a complex sequence of overall change? Which factors determine regular and irregular change rhythms? How much nonlinearity is found in effective sequences of strategic change?
	• What role does temporal consistency play? What are the best temporal distances between changes (to maintain momentum)? What is the greatest amount of change that an organization can handle in any given period? How should change be punctuated with stability?
	• What types of processes unfold during strategic change(s)? To what extent do they include discrete phases as opposed to process flows? What are ways that strategic change is reversed or uncompleted? What are the multiple temporal dynamics associated with change processes?
(6) Tensions	• What types of contradictions foster and impede successful strategic change?
	• What are the paradoxes that characterize strategic change at different times?
	• How does the paradox of intertemporal choice play out? In which situations?
	• How do temporal ambidexterity and ambitemporality foster and impede the success of strategic change over time?

middle managers prefer quick implementation and immediate outcomes (short-term oriented), while others focus on approaches that are sustainable and pay off in the long run (long-term oriented) (e.g., Das, 1987; Eyal, Liberman, Trope, & Walther, 2004; Huy, 2001; Liberman & Trope, 1998), and to value both of these. The same can be said of the other temporal dimensions. In particular, middle managers may

exhibit variance in preferred change interventions that could significantly impact time duration and change success of the work units in which they act as change agents. Middle managers who prefer to use a coercive, commanding approach for any change as they assume this approach is faster could experience short-term success—insofar as they change something concrete including laying off personnel or cutting cost—but could produce deteriorating performance of their work unit in the longer term. In contrast, middle managers whose preferred change interventions tilt toward a softer, socializing approach may be criticized by top executives as slow in producing results, but viewed in the longer term may achieve change success faster and more sustainably. Obviously, all these outcomes also depend on the content and context of change.

In addition to the internal actors, we see ample opportunities with respect to the temporal markers of external actors. Those include, but are not limited to, shareholders, analysts, media, (environmental) activists, and governments. For example, while the influence of activists on corporations can be significant (cf. Mellahi, Frynas, Sun, & Siegel, 2016), we still know very little about the roles of activists in strategic change, and even less about the influence of these activists' temporal markers. There is also initial evidence that the firms' analysts and media coverage may play an important role with respect to strategic change (Bednar et al., 2013; Litov, Moreton, & Zenger, 2012). In a recent study, Bednar et al. (2013: 910) argued that "the evaluations of firms by outside constituents may influence the decision making of executives." and indeed found that negative media coverage increases the extent of strategic change. We need to shed more light on the roles of these actors and other external actors if we want to advance a more comprehensive understanding of strategic change. Further, it is likely that external actors' temporal markers are also guided by emotion, although this has been explored even less than the roles of emotion in internal organizational actors.

Pathway 3: Emotionality

Consistent with the need to further explore the roles of various actors, one factor that has not been explored as much as it should be is emotion. Strategic change processes are laden with emotion, in part because of the uncertain, prospective, yet highly risky and consequential nature of major change

(Huy, 2002). To put it simply, strategic change is not solely cognitive. Cognition is intertwined with emotion, both at an individual and organizational level (Vuori & Huy, 2016); emotions direct people's attention to the particular event that triggers the emotion and facilitate actions that address that particular triggering event. Thus, without appreciating the roles evolving emotions play it is impossible to fully understand the temporal components of strategic change.

That is, the impetus for strategic change is often emotional, as may be illustrated by disruptive events we discussed above that often lead to such change. In addition, early emotional reactions to change may affect later actions taken. For example, early emotional reactions may sometimes cause people to prefer small short-term benefits over large long-term benefits (e.g., Phelps, Lempert, & Sokol-Hessner, 2014) or to take actions that avoid short-term harm but cause harmful long-term consequences (e.g., Kahneman, 2011: Part IV).

Because of the prospective orientation of strategic change, future-oriented emotions such as hope and fear are particularly likely to arise early on in change. Negative emotions will be likely to command more attention than positive ones (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001). Initial emotional reactions might be fleeting, such as the fear triggered by immediate anxiety about losing one's valued job or serious harm to a cherished organizational identity (Huy, 2011). However emotional states that recur consistently over time are likely to have a systematic effect on the success of strategic change (Vuori & Huy, 2016).

Sanchez-Burks and Huy (2009) show that there are temporal shifts in shared emotional experiences among organizational members during strategic change. The capacity of change leaders to recognize and address these emotional shifts, a capacity that the authors refer to as change leaders' emotional apertures, plays a substantial role in the success of strategic change. In addition, Vuori and Huy (2016), in a longitudinal study of how Nokia lost "the smartphone battle" found that a good part of the reason was that middle managers' increasing time pressure for high performance, increasingly tight deadlines, shared fears of superiors' sanctions coupled with low fear of external competitors due to competitive secrecy, led them to act in ways that harmed their company's work rather than led to productive strategic change. Thus, it is crucial that future research on strategic change take into account the types of emotions associated with different temporal markers,

how they evolve over time, and how particular change agents' actions affect them. It is also crucial that future research extend to take into account the emotional responses of change recipients to organizational change (Oreg, Bartunek, Lee, & Do, In press) and how these are likely to evolve over time (Balogun et al., 2015). These likely will have impacts on the course of strategic change.

Pathway 4: Tools and Practices

Our review also revealed a lack of knowledge about the actual tools and practices change agents use in strategic change, and in particular how they influence the setting and management of deadlines, which in turn influence perceived time pressure. Although some studies have provided initial insights (e.g., Boppel, Kunisch, & Birkinshaw, 2014; Boppel, Kunisch, Keil, & Lechner, 2013; Dencker, 2009; Jarzabkowski, 2003; Kuwada, 1998), compared to other related phenomena such as mergers and acquisitions (M&A), we know comparably little about how tools and practices influence the processual dynamics in strategic change. We thus see ample opportunities for future research. We propose three directions: two general ones and a specific one related to time.

Broadly, we need to learn more about the tools and practices actors use with respect to the initiation, implementation, and communication of strategic change, as well as who makes use of each of these tools. How does the use of tools (e.g., project management, scheduling change activities, change outcomes and deadline management, each of which is temporally based) influence the thinking, emotions, and behaviors of various groups of actors who are engaged in strategic change? How does the frequency and time intervals between evaluation periods influence the speed and quality of actions and learning from interim change outcomes? What are the contingent uses and situational effectiveness of the various time-based tools and practices, in regard to decision-making and decision evaluation during strategic change?

In particular, tools and practices related to time management in strategic change need deeper investigation. As time is an important and scarce resource—especially when experiencing a fast-changing external environment—we can expect that it must be actively managed during strategic change. In fact, time management forces "change agents to display temporal capability skills to effectively sequence, time, pace, and combine various interventions" (Huy, 2001: 601).

Thus far, scholars know relatively little about how managers link time with resource-allocation decisions, even though this is an important managerial challenge. How do change agents allocate their resources, including time, to various change initiatives (Crossan, Cunha, Vera, & Cunha, 2005)? How do they temporally prioritize various strategic change initiatives and associated actions for each initiative? How do firms internally synchronize and coordinate numerous change efforts?

From a temporal perspective, these tasks entail several managerial challenges. The timing of each change is crucial because it often should be coordinated with others. How can changes be timed most effectively? As changes can differ in duration and pace, managers must simultaneously coordinate them all. Therefore, how can management coordinate changes that occur at different paces? When implementing an entire change program, the total number of change initiatives is likely to be high. What is the greatest amount of change that an organization can handle in any given period and what tools can best help it be accomplished? Moreover, is there an optimal amount of change for sustainable performance? Other possible research questions include the following: How do executives use particular tools to construct time to manage strategic change? Do they operate on deadlines? On tight deadlines? On tasks? What are their time horizons and how are these expressed? The exploration of these questions is central to our understanding of how firms manage time to adapt and prosper in dynamic environments.

There is also evidence that firms increasingly use temporary structures such as dedicated change officers and change programs (Boppel et al., 2013, 2014) to initiate and implement strategic change. However, we know little about when and why firms chose them and which are more or less effective. As a basis for this discussion, Orlikowski and Yates (2002: 685) suggested that firms operate out of more or less explicit shared "temporal structures" that people enact in their ongoing activities, including scheduled meetings, project deadlines, financial reporting periods, and so forth. However, these can be changed over time, especially when there are strategic reasons for doing so, as Bluedorn and Denhardt (1988) showed with regard to school schedules in Missouri being adapted to new meanings of summer vacation aimed at promoting tourism. In fact, strategic change often involves shifts in temporal structures, whether organization members are aware of it or not.

Obviously, strategic change is beneficial to the extent that it can fosters constructive learning and

new knowledge, which are themselves the outcomes of time-based processes. When executives engage in strategic change, they tend to repeat changes in order to build on their experience. As noted above, for example, Boeker (1997b) found that change agents are likely to enter markets in which their former firms were active. In so doing, they become committed to routines and standardized change procedures. Individuals, but also firms, are influenced by their history, change experience, age, and resources (accumulated in the past). How does the use of various time-based tools and practices increase the quality and speed of learning of change agents and enable them to accumulate novel and useful knowledge?

Pathway 5: Complexity

Our review also revealed that we need to learn much more about the multidimensional and complex nature of strategic change. As noted, much of the existing work has focused on one temporal construct of (clock time) and implicitly assumed the linearity of time as the sole temporal dimension of interest. We thus encourage scholars to relax assumptions of linearity, to emphasize the processual and polyphonic nature of strategic change or, more likely many changes at once and focus on the multiple interactions strategic necessarily includes.

First, our review has revealed that much of the extant research assumes, either implicitly or explicitly, that strategic change is a linear process that unfolds through initiation, implementation, and completion (Hinings & Greenwood, 1988). Future studies should question this assumption by focusing on how various critical manifestations of strategic change unfold over time and whether these actually unfold in a linear way.

For example, as Albert (2013), Amis et al. (2004), Bluedorn (2002), Langley (1999), and others have described, sequence refers simply to a temporal ordering of events. As we have noted above, this temporal ordering is not necessarily linear at all. Hinings and Greenwood (1988) demonstrated considerable cycling back and forth in a series of strategic changes. Denis et al. (1996: 673) presented a case study of strategic change in a public hospital under conditions of great ambiguity. They traced the change over time, and found that it proceeded in a cyclical pattern, with periods of substantive change alternating with periods of political realignment. Mantere et al. (2012) went so far as to show that strategic change might be reversed. They explored how, after a merger was

canceled, managers tried (unsuccessfully) to return to their organization's premerger strategy.

In addition, a sequence might include phases or stages, but need not do that. There are some stage models of change (e.g., Isabella, 1990) that are well recognized. However, as Langley and Truax (1994: 621) note, "phase-type process models in which an organization is assumed to pass in a unitary way through a series of stages have been criticized for their excessive simplicity and their neglect of social and political phenomena." Moreover, a sequence might not even be solely one stream of events. It may well include "parallel streams of activity that may converge or diverge over time" (cf. Langley & Truax, 1994: 621), as scholars illustrated with regard to the Minnesota Innovation research program (Schroeder, Van de Ven, Scudder, & Polley, 1989; see our discussion of polyphony below). However, as we have noted here, there is much more to sequences of change than has typically been acknowledged in studies of strategic change.

As part of this examination, scholars should explore change reversals and uncompleted strategic change (Dyck, 1997; Mantere et al., 2012). As we noted above, an illustrative study of change reversal was conducted by Mantere et al. (2012), who observe an organization's failure to return to the widely accepted premerger strategy after a merger is cancelled. This triggers interesting questions for future research. When can strategic change be reversed? What types of strategic change are subject to reversals? How do firms reverse strategic change? What capacities enable or constrain change reversals? What are the consequences? As our knowledge in this area is scant, we would welcome more in-depth case studies. These are examples of exciting but underexplored topics in strategic change research.

Second, in our review—following the model set by most strategic change research—we have sometimes talked as if there might be a single strategic change. Even when we have talked about multiple strategic changes, and acknowledged the likelihood that some events are entrained to each other, or discussed how change might be entrained to environmental forces, we have kept them relatively separate. However, this is all too often an illusion. Strategic change never happens singly or in a vacuum. There are always other events going on at the same time, and these play off the strategic change. For example, in their study of a major restructuring of a multinational company, Balogun et al. (2015) found that while European senior management was carrying out one set of activities,

the (soon to be no longer) senior management team in the United Kingdom were carrying out another set of strategic activities that had been mandated by their superiors. However, these sets of initiatives did not coordinate well at all, to the detriment of both. This is not atypical. In particular, it is not atypical for change recipients to be enacting their own sets of events with their own pace at a time a strategic change is introduced, and how the two sets of events interact with one another has considerable impact on the success of change.

In other words, relying solely on any one temporal marker might be overly simplistic because various temporal markers—such as sequence, punctuation, rhythm, and pace—likely interact with one another. For example, as a high frequency of change may harm performance, firms tend to cluster changes to reduce disruptions (Amburgey et al., 1993; Hoskisson & Galbraith, 1985; Keck & Tushman, 1993). Further, any focal strategic change is only one of multiple changes going on simultaneously inside and outside the organization. These changes are likely to be interdependent and interlinked. Therefore, any one strategic change may be negatively affected if the combinations of temporal markers associated with multiple events are not explicitly recognized and addressed.

To understand strategic change, it is thus necessary to appreciate polyphony. As Bartunek and Woodman (2015: 170–171) noted, "[f]rom an organizational perspective, polyphony refers to the fact that there are often multiple sets of sequencing, timing, pacing, and rhythm in existence at once, and these are interdependent and entrained to each other (Ancona & Chong, 1996; Bluedorn, 2002). That is, two or more sets of activity cycles (Ballard, 2009) depend on each other to be accomplished successfully."

To fully map strategic changes, it is necessary to consider diverse temporal markers experienced by each entity involved in the change and to see how they play against each other. Is their playing against each other equivalent to a harmonious improvisational jazz session (Barrett, 2012)? Or is it discordant and conflictual? Taking this more holistic perspective would be very helpful in understanding the temporal dynamics of strategic change more deeply.

We suggest that future research combine multiple temporal markers in order to account for the complexities inherent in strategic change. Indeed, firms need to find the right balance between the timing, frequency, sequence, pace, and rhythm of strategic change (e.g., Zhang & Rajagopalan, 2010). This balance depends, in part, on the other strategic changes with which the focal change is interdependent. For instance, Klarner and Raisch (2013) focus on the frequency and rhythm of repeated strategic changes, but emphasize their distinct, albeit complementary, effects on performance. Kiss and Barr (2015) demonstrated that when rapid strategic action is required, firms that spend less time making strategic decisions and more time determining how best to implement them will be more successful.

One possible way to study combinations of temporal markers is for scholars to make better use of their data access and collection. In other words, whenever researchers collect data on a specific temporal marker, they can study others as well. For instance, data collected to measure the frequency of strategic change can also be used to examine the pace or rhythm of change. As the overall number of changes is counted to measure the frequency of strategic change, scholars can examine time spans between multiple change events in order to understand the rhythm of strategic change. Another fruitful method would be to divide the overall number of changes by the period (in years) because the average number of changes per year could reflect the overall pace of change. Yet another would be to imagine a strategic change (or a set of them) as a musical score that depicts all of these temporal dimensions, as in the example provided by Albert and Bartunek (2017). Therefore, considering strategic change research on the basis of a multitemporal marker approach can reveal rich and useful insights.

Third, studying the interactions of actions, content, and context of change jointly over time is crucial to develop an adequate understanding of the progression of strategic change and its outcomes. This point was made forcefully by Pettigrew's book length (1985) study of strategic changes at Imperial Chemical Industries and his (1987) paper providing a conceptual analysis of these changes. As Pettigrew (1987: 654) notes as one illustration of such interactions, leadership of strategic change is both "context sensitive and time sensitive." Actions taken might be more proper at some times during change (e.g., particular windows of opportunity) than others.

To illustrate, Huy (2001) proposed that starting large-scale strategic change with a commanding, coercive approach is likely to be accepted in firms that traditionally accept hierarchical authority and when change agents' power is concentrated, and is done in a short time. This authoritarian approach has to be followed with softer socializing approaches

to repair the social fabric of the organization. In contrast, in firms that have little slack resources or dispersed power structures, starting strategic change with soft socializing and teaching approaches and ending with commanding likely constitutes a better temporal order of change interventions than starting with commanding. These are examples of hypotheses that can be investigated in future research.

Pathway 6: Tensions

By its very nature, strategic change includes tensions—contradictions, dialectics, and paradoxes (Fairhurst et al., 2016; Putnam, Fairhurst, & Banghart, 2016; Schad, Lewis, Raisch, & Smith, 2016). The tensions may be between groups involved in change (Denis et al., 2001), between different views of the best approaches, and about when to take particular actions. For example, strategic change scholars have long noted and studied potential tensions including change vs. stability and renewal vs. disruption (Rajagopalan & Spreitzer, 1997). Some of these tensions are paradoxical, in that they embody contractions whose conflicting elements are simultaneously crucial for the organization to go on. However, the temporal dimensions of the tensions directly inherent in strategic change have rarely been addressed. In other words, there are ample opportunities for future research with respect to such temporal tensions and paradoxes (Poole & van de Ven, 1989; Smith & Lewis, 2011).

Time itself, as we have treated it, is paradoxical. Reinecke and Ansari (2017: 402) comment on the "seeming paradox that time seems to be constant, external, and objective but is often experienced as fluid, internal, and subjective. While a clock depicts objective clock time, we rarely experience time uniformly." Hernes (2014) and Tsoukas and Chia (2002), among others, argue that what we might interpret as discrete events is actually all temporal flow and indeterminacy, and we socially construct its events, typically after they have occurred. They are not "real" in themselves (cf. Bergson, 1912; Mead, 1932).

In addition, we have discussed strategic changes that seem to work well in the short run but not in the long run (Amburgey et al., 1993; Barkema & Schijven, 2008). Differences between short- and long-term outcomes have been characterized as the paradox of intertemporal choice (Laverty, 1996; Reinecke & Ansari, 2017). This paradox is particularly important, because one of the central temporal tensions in strategic change has to do with short-term vs. long-term success. But perhaps one does not need to be cast against the other.

Other paradoxes of temporality associated with strategic change have to do with temporal ambidexterity and ambitemporality. Andriopoulos and Lewis (2009) and Tushman and O'Reilly (1996) have described ambidexterity as a characteristic that can enable temporal separation between the short- and long-term aims, between exploitation and exploration when necessary (Poole & van de Ven, 1989). Slawinski and Bansal (2015: 544) built on this to define temporal ambidexterity, which refers to firms' attempts to balance their short- and long-term needs.

Reinecke and Ansari (2015) develop the notion of ambitemporality, which refers to mechanisms that help to enable an organization that is connecting temporally separate domains to embrace both of them as plural temporalities. They suggested two ways this could be accomplished. One is temporal reflexivity (Orlikowski & Yates, 2002), which involves reflecting on and questioning underlying temporal assumptions. The second involves parties recognizing that apparently separate (short and long term) goals may be mutually interdependent, and thus enabling an organization to hold multiple temporal domains at once. Such recognition enables at least a potential synthesis and transcendence of temporal paradoxical poles (Papachroni, Heracleous, & Paroutis, 2015). All of these reflect ways that temporal dimensions often contain paradoxical elements in ways that future research can explore. An important topic for such research will be the ability of organizations to hold multiple sides of temporal differences as opposed to casting one against the other.

CONCLUSION

To conclude, our review has demonstrated how temporal dimensions, whether explicitly recognized or not, are completely interwoven with strategic change. In fact, such change cannot exist without them. Further, we have shown distinctions between clock-based, so called "objective" time indices, and alternative indices such as event based and life cycle approaches to the temporal dimensions of organizations. We have also described roles that temporal dimensions play in the events associated with strategic change, as well as how temporal characteristics of the actors who lead change affect its progression. Finally, we have made evident that the assumption often taken-for granted by researchers that one strategic change may unfold at a time is likely unfounded

in the vast majority of instances. Our review begins to open up how much is still unknown about the roles of time in strategic change.

Based on our review, we have suggested several pathways forward for research aimed at advancing our understanding of the processual dynamics of strategic change. Specifically, we have proposed that future strategic change studies should focus on temporality, change agents and recipients, emotionality, tools and practices, complexity, and tensions. Each of these pathways offers abundant opportunity for new exploration and insights that will be valuable to strategic change and its temporal dimensions, and also to a wide range of other organizational actions that take place over time. We hope our review will stimulate future research which will build more explicitly and more comprehensively on diverse temporal dimensions to challenge prevalent assumptions and develop an enriched understanding of the dynamic nature of strategic change.

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APPENDIX

Exemplary Conceptualizations and Definitions of Strategic Change

Study (Year)	Conceptualizations/Definitions
Greiner and Bhambri (1989)	"Strategic change involves a shifting interplay between deliberate and emergent processes that receive their relative emphasis under certain environmental and organizational conditions, leading radically or gradually to major changes in strategy (e.g., mission, product/market mix), and/or organization (e.g., structure, systems, culture, people), and which result in a realignment between the firm and its environment." (p. 68)
Goodstein and Boeker (1991)	"Following Ginsberg (1988), we adopted a definition of strategic change that emphasizes changes in product and service domains." (p. 307)
Gioia and Chittipeddi (1991)	"In general terms, change involves an attempt to alter the current way of thinking and acting by the organization's membership. More specifically, *strategic* change involves an attempt to change current modes of cognition and action to enable the organization to take advantage of important opportunities or to cope with consequential environmental threats." (p. 433)
Wiersema and Bantel (1992)	"Corporate strategic change, defined as absolute change in [product] diversification level [. . .]." (p. 91)
Gioia et al. (1994)	"Strategic change involves either a redefinition of organizational mission and purpose or a substantial shift in overall priorities and goals to reflect new emphases or direction." (p. 364)
Boeker (1997a)	"Strategic change was operationally defined as the absolute percentage of annual change in degree of diversification across the 20 product-markets." (p. 159)
Rajagopalan and Spreitzer (1997)	"Strategic change can be defined as a difference in the form, quality, or state over time (Van de Ven & Poole, 1995) in an organization's alignment with its external environment. An organization's alignment with its external environment is defined as the 'fundamental pattern of present and planned resource deployments and environmental interactions that indicates how the organization will achieve its objectives' (Hofer & Schendel, 1978: 25). Changes in this alignment encompass (a) changes in the *content* of a firm's strategy as defined by its scope, resource deployments, competitive advantages, and synergy (Hofer & Schendel, 1978) and (b) changes in external environment and organization brought about to initiate and implement changes in the *content* of strategy." (p. 49)
Carpenter (2000)	"Strategic change—viewed as variation in firm strategy and deviation from industry strategic norms [. . .]." (p. 1179) "Building on Mintzberg's (1978) definition of strategy as a pattern of managerial decisions, I emphasize two important aspects of strategic change: strategic variation and strategic deviation." (p. 1181)
Kraatz and Zajac (2001)	"Strategic change has been recognized as an important phenomenon because it represents the means through which organizations maintain co-alignment with shifting competitive, technological, and social environments which occasionally pose threats to their continued survival and effectiveness." (p. 632)
Fiss and Zajac (2006)	"The topic of strategic change, defined as an alteration in an organization's alignment with its external environment (Rajagopalan & Spreitzer, 1996; Van de Ven & Poole, 1995), [. . .]." (p. 1173) "Strategic change is increasingly seen as not only a shift in structures and processes, but also as a cognitive organizational reorientation involving 'a redefinition of the organization's mission and purpose or a substantial shift in overall priorities and goals'." (p. 1173)
Haynes and Hillman (2010)	"We adopt Carpenter's development of strategic change to include two aspects: strategic variation, or a change in the 'pattern of a firm's resource commitments over time, relative to its past pattern,' and strategic deviation, a shift away from the 'firm's resource commitments from industry norms of competition' (Carpenter, 2000: 1182)." (p. 1149)
Zhang and Rajagopalan (2010)	"We conceptualize strategic change as the variation over time in a firm's pattern of resource allocation in key strategic dimensions that goes beyond industry-wide changes in these dimensions." (p. 335)
Mantere et al. (2012)	"Strategic change represents a radical organizational change that is consciously initiated by top managers, creating a shift in key activities or structures that goes beyond incremental changes to preexisting processes (Rajagopalan & Spreitzer, 1997). Following Gioia, Thomas, Clark, and Chittipeddi, we conceptualize strategic change as a process that involves 'either a redefinition of organizational mission or a substantial shift in overall priorities and goals to reflect new emphases or direction' (1994: 364)." (p. 173)