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A Temporal Perspective of Merger and Acquisition and Strategic Alliance Initiatives: Review and Future Direction

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The incorporation of a temporal perspective in merger and acquisition (M&A) and alliance research has gained increasing popularity. Since a temporal perspective focuses on the management of time and its consequences, it contributes a unique value proposition to the M&A and alliance stream of research. Over the past 30 years researchers have explored a wide variety of topics and methodological approaches. As a result, research evidence has progressed in a somewhat fragmented manner where its cumulative impact is difficult to discern. The purpose of this review is to systematically assess the underlying logic and contributions of a temporal lens for the M&A and alliance literature as well as identify core temporal constructs, mechanisms, relationships, and promising research directions. The authors' review of 144 published articles not only catalogs the state of the art and accumulated knowledge but also identifies critical hurdles that need to be addressed to chart future research directions.

Keywords: *mergers and acquisitions; strategic alliance; temporal perspective*

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Over the past decade, the incorporation of a temporal perspective in merger and acquisition (M&A) and alliance research has gained increasing popularity. Scholars have studied questions related to accelerating or slowing down postacquisition integration (Homburg & Bucerius, 2006), preemptive acquisitions (Carow, Heron, & Saxton, 2004), the impact of M&A or alliance experience on performance (Haleblian & Finkelstein, 1999), and M&As and alliances as learning tools and races (Hamel, 1991). More recently, researchers have begun to explore the pacing and rhythm of acquisitions (Laamanen & Keil, 2008) and the sequence patterns of M&As and alliances (Shi & Prescott, 2011) under the assumption that corporate performance increasingly hinges on the effective management of acquisition programs and alliance portfolios (Kale & Singh, 2009). One common thread among this diverse set of M&A and alliance research is a shared orientation of assessing temporal-related constructs to describe and explain key organizational outcomes. That is, research has adopted a "temporal perspective" with the aim of enriching our understanding of how *managing time* can create a source of competitive advantage and survival within the context of M&A and alliance initiatives (Prescott & Shi, 2008). While a growing number of scholars question the underlying competitive advantage logic of engaging in M&As and alliances given their poor track record and high failure rate (King, Dalton, Daily, & Covin, 2004; Lavie & Miller, 2008), we think a temporal perspective provides the potential to enrich our understanding of how firms should and do effectively manage these strategic initiatives.[1]

M&As and alliances are externally oriented corporate development efforts with the goal of achieving economies of scale, scope, market share, prestige, survival, and other outcomes essential to temporary or sustained competitive advantage. During this decade, both corporate initiatives have achieved unprecedented growth. For example, in the United States the value of M&A deals has grown from $676 billion at the beginning of 2001 to $2.4 trillion in 2010 (Thomson Reuters, 2011). Given that both activities are time-consuming and time is a scarce, valuable, and nonimitable resource (Carlstein, 1982), how firms leverage time in conducting and coordinating M&A and alliance initiatives is a critical issue.

Since a temporal perspective focuses on the management of time and its consequences, it contributes a unique value proposition to the M&A and alliance stream of research. Thus, it is not surprising that researchers have explored a wide variety of temporal topics and methodological approaches. As a result, research evidence has progressed in a somewhat fragmented manner where its cumulative impact is difficult to discern. The purpose of this review is to systematically assess the underlying logic, accumulated knowledge, and contributions of the temporal perspective of M&As and alliances as well as identify core temporal constructs, mechanisms, and promising research directions. We center on empirical M&A and alliance research where temporal mechanisms and constructs have either been implicitly inferred or explicitly identified as a unit of analysis in a study's theory or methods. We benefit from and build on temporal research in management to provide a unique contribution to the M&A and alliance literature (e.g., Bluedorn & Denhardt, 1988; Butler, 1995; McGrath & Rotchford, 1983).

Our focus on M&As and alliances enriches our understanding of the role of time for two fundamental corporate initiatives. This is an important issue since strategy scholars often view time as a hidden and unrecognized dimension of strategy (Das, 1991) that has the potential to create competitive advantage (P. S. Davis, Dibrell, & Janz, 2002). Our temporal lens is directed toward the organizational theory/macro level (i.e., M&As and alliances as

the phenomenon of interest), although we include relevant studies at the micro level. The approach is complementary to prior temporal review articles that have focused on the micro level (Bluedorn & Denhardt, 1988; Butler, 1995; McGrath & Rotchford, 1983) while recognizing that the management of time for M&A and alliances is a multilevel phenomenon.

Based on our assessment of 144 articles, we developed the following overall summary. The prototypical temporal M&A and alliance study employs a *cross-sectional design* to examine how *past* alliance/acquisition *learning and experience* serve as *proxies* for organizational processes (e.g., knowledge, trust) that affect *present* learning, organizational structure, the probability of new alliances/acquisitions, or market-based *outcome*s while assuming *objective clock time* and that the timing of an alliance/acquisition *event is unpredictable*. We strongly recommend that future research be oriented toward establishing the construct validity of temporal constructs, measuring time directly whenever possible, redirecting research toward second-order time constructs involving the complex nature of change and assessing to what degree firms temporally manage acquisition and alliance programs.

Method

Article Selection Criteria

We draw on prior temporal studies that underpin the role of time in the field of management (Bluedorn & Denhardt, 1988; Butler, 1995; George & Jones, 2000) to establish a boundary condition, on one hand, but also to leverage time-based research in the broader "management" domain (Ancona, Okhuysen, & Perlow, 2001; Bluedorn, 2002; Bluedorn & Denhardt, 1988) to the more specialized M&A and alliance research stream.

We classify extant research based on seven temporal roles established in social science research (Bluedorn, 2002; Butler, 1995; Moore, 1963). The temporal roles are (a) "when," (b) "how frequent," (c) "how fast or what speed," (d) "experience," (e) "learning," (f) "what order or sequence," and (g) "what rhythm." These temporal roles provide an organizing framework for categorizing research because they focus on how organizations manage time as a critical resource (Doob, 1971) and from a more general sense are linked to temporal aspects of decision making (Bluedorn & Denhardt, 1988). A study can address multiple temporal roles.

We first classified each selected study into its temporal role and then evaluated each study on six criteria as a way to identify insights, gaps, areas of commonality, and differences within and across the temporal roles. The criteria developed from the time-based literature are (a) temporal constructs (Bluedorn & Denhardt, 1988), (b) assumptions of time (Ancona, Okhuysen, & Perlow, 2001), (c) temporal referent point (Mosakowski & Earley, 2000), (d) temporal study design, (e) single versus multiple M&A and alliance initiatives (Shi & Prescott, 2011), and (f) temporal influence on organizational outcomes. From a managerial perspective, the six criteria are central for understanding how and why time matters in making informed and high-quality M&A and alliance decisions.

We included published articles that satisfy two criteria. First, we searched for M&A and alliance articles that adopted a temporal perspective (relevance criterion). Specifically, we used keywords related to the seven temporal roles such as *experience*, *learning*, *first mover*

advantage, *pace*,[2] *frequency*, *speed*, and *rhythm*. Second, we searched for management-related M&A and alliance articles in four theoretical domains: organizational theory/strategy, economics, sociology, and social psychology. We searched for articles in 18 academic referred journals (see Table 1) across a wide variety of fields, including strategy, management, international business, and entrepreneurship from 1983 to the present. In our search, the first article related to time appeared in 1983. We used the reference section of the articles to identify articles published before 1983 and to identify other articles that were not revealed in our electronic search. We included studies that examine the antecedents, mediators, moderators, and outcomes of temporal related constructs. Table 1 summarizes the chronological trends across journals and the overall frequency of articles for the seven temporal roles by journal. In total we identified 144 articles.

Seven Temporal Roles

A temporal role is the function attributed to time-related constructs. Since the first step in our evaluation process involves the classification of each article into a temporal role, we briefly overview each temporal role.

The *when* role includes studies that explore preemptive acquisitions (Carow et al., 2004), early movers in acquisition waves (McNamara, Haleblian, & Dykes, 2008), and entry timing (Miller & Folta, 2002). In the alliance literature, scholars frame first movers as a key component of a firm's strategic profile and correlate it with alliance partner characteristics (Oxley & Sampson, 2004).

The *frequency* role focuses on multiple acquisitions (Laamanen & Keil, 2008), the temporal distance among multiple acquisitions (Hayward, 2002), and the pace or frequency of one cycle of repeated activities (Standifer & Bluedorn, 2006). Scholars have examined both the antecedents (Amburgey & Miner, 1992; Standifer & Bluedorn, 2006) and performance implications (Laamanen & Keil, 2008) of repetitive acquisitions and/or alliances.

The *speed* role investigates the impact of speed of integration on postmerger performance (Cording, Christmann, & King, 2008; Graebner, 2004; Homburg & Bucerius, 2006; Inkpen, Sundaram, & Rockwood, 2000; Ranft & Lord, 2002; Schweizer, 2005) and the antecedents of the speed of new alliance initiatives (Al-Laham, Amburgey, & Bates, 2008; Haspeslagh & Jemison, 1991).

The *experience* role explores the impact of acquisition experience or duration on firm performance (Haleblian & Finkelstein, 1999) and how prior alliance experience affects alliance-related outcomes such as alliance capability (Heimeriks & Duysters, 2007), alliance performance (Hoang & Rothaermel, 2005), and alliance governance (Reuer, Zollo, & Singh, 2002).

The *learning* role explores questions involving intra- and interpartner learning. The temporal element is embedded in contexts where it takes time to learn, build trust, and acquire knowledge (Doz, 1996; Kale, Singh, & Perlmutter, 2000) and where competitive-cooperative relationships among partners coevolve over time (Hamel, 1991; Inkpen & Currall, 2004; Khanna, Gulati, & Nohria, 1998). This perspective explores learning mechanisms under different experience patterns, such as the impact of heterogeneity of experience on learning (Zollo & Winter, 2002). While the learning role is related to the experience role, its focus on

Table 1
Chronological and Temporal Role Trends in the Acquisition and Alliance Literature

Chronological Trend	Strategy		Management							International Business			Entrepreneurship		Others[a]	
Year	*SMJ*	*SO*	*AMJ*	*AMR*	*ASQ*	*JMS*	*JOM*	*OS*	*Ostu*	*JIBS*	*JIM*	*MIR*	*EPT*	*JBV*	Other	Total
1983				1												1
1984	1															1
1985	1															1
1989	1															1
1991	1									1						2
1992	1															1
1993						1										1
1994			2					1		1						4
1995						1										1
1996	3				1	1		1		1						7
1997	1		2					1								4
1998	4					1		6								11
1999	2				1					2						5
2000	7		1			1										9
2001	1		1					1	1							4
2002	5				1	1		2	1							10
2003						2				1		1				4
2004	4					1	1	4		3						13
2005	2		2					1	1			2	1		1	10
2006	1		1			3	2				1			1	2	11
2007	2	1				2		1		2		1				9
2008	5	1	5			6		1		1					1	19
2009	3					2		2		1					1	9

(continued)

Table 1 (continued)

Chronological Trend	Strategy		Management							International Business			Entrepreneurship		Others[a]		
Year	*SMJ*	*SO*	*AMJ*	*AMR*	*ASQ*	*JMS*	*JOM*	*OS*	*Ostu*	*JIBS*	*JIM*	*MIR*	*EPT*	*JBV*	Other	Total	
2010	1					1				2						4	
2011			1			1										2	
Grand total	46	2	15	1	3	24	3	21	3	15	1	4	1	1	5	144	

Temporal Category	Strategy		Management							International Business			Entrepreneurship		Others[a]	Grand Total	
	SMJ	*SO*	*AMJ*	*AMR*	*ASQ*	*JMS*	*JOM*	*OS*	*Ostu*	*JIBS*	*JIM*	*MIR*	*EPT*	*JBV*	Other	*n*	%
Category 1: When	2		3				1								1	7	5.0
Category 2: How frequent	3									1					1	5	3.5
Category 3: How fast or what speed	2		2					1							1	6	4.0
Category 4: Experience	20	2	10	1	3	6	2	7		9	1	2		1		64	44.5
Category 5: Learning	17					17		13	3	4		2	1		1	58	40.0
Category 6: What order or sequence						1				1						2	1.5
Category 7: What rhythm, cycles, spirals	1														1	2	1.5
Grand total	46	2	15	1	3	24	3	21	3	15	1	4	1	1	5	144	100.0

Note: *SMJ = Strategic Management Journal*; *SO = Strategic Organization*; *AMJ = Academy of Management Journal*; *AMR = Academy of Management Review*; *ASQ = Administrative Science Quarterly*; *JMS = Journal of Management Studies*; *JOM = Journal of Management*; *OS = Organization Science*; *Ostu = Organization Studies*; *JIBS = Journal of International Business Studies*; *JIM = Journal of International Management*; *MIR = Management International Review*; *EPT = Entrepreneurship Theory and Practice*; *JBV = Journal of Business Venturing*.

a. Others include *Journal of Management Issues*, *British Journal of Management*, *Journal of Marketing*, and *Human Relations*.

Table 2
Definitions for Temporal Roles

Category	Definition
When	Explores preemptive acquisition, early movers in acquisition waves, and the issue of entry timing from the real option perspective
How frequent	Frequency of multiple acquisitions, the temporal distance among multiple acquisitions, and the pace/rate or frequency of one cycle of repeated activities
How fast or what speed	Speed of integration for postmerger integration and the antecedents of the speed of new acquisition/alliance initiatives
Experience	Acquisition experience—firm performance relationship and how prior alliance experience affects alliance-related outcomes such as alliance capability, alliance performance, and alliance governance
Learning	Intra- and interpartner learning; the temporal element is reflected in the context where it takes time to learn, build trust, and acquire knowledge, or where competitive-cooperative relationships among partners coevolve over time
What order or sequence	Emphasizes the sequence of decisions within a single acquisition/alliance, emphasizes sequence as a context, or examines the value of order for M&A and alliance decisions for creating competitive advantage
What rhythm, cycles, spirals	The degree of variability or repetitive cycles in acquisition and alliance initiatives

process issues warrants separate attention. The process perspective has been explicitly addressed in Hamel's (1991) study, where he suggests that process is often more important than structure in determining learning outcomes. When there are asymmetries in the learning goals, processes, and outcomes of partners, they can alter the relative bargaining power between partners. In addition, a firm can have experience but not learn as in blind variation or learn without experience as in vicarious learning (Bresman, 2010).

The *sequence* role emphasizes the sequence of decisions within a single alliance (Tallman & Shenkar, 1994) or acquisition. Recently, Shi and Prescott (2011) extended this line of research by empirically identifying a typology of distinctive sequence patterns in firms' acquisition and alliance initiatives. The central focus of this role is to either study sequence as a context or examine the impact of order in M&A and alliance decisions on organizational outcomes.

The *rhythm* role examines acquisition programs and alliance portfolios from a perspective that emphasizes degree of variability (Vermeulen & Barkema, 2002) in acquisition and alliance initiatives and its implications. For example, high variability is an indicator that firms concentrate their deals or alliances within a specific period (Laamanen & Keil, 2008; Shi & Prescott, 2007). Table 2 summarizes our definitions for each temporal role.

Evaluation Criteria for the Temporal Articles

Having classified an article into a temporal role, we then evaluated it based on six criteria. For our 144 articles, Table 3 summarizes the frequency counts for the temporal roles and temporal evaluation criterion.

Table 3
Temporal Evaluation Criteria and Frequency Counts

Evaluation Criteria	Subcriteria	Frequency Counts[a]
Temporal constructs used in each temporal role[b]	When: Early mover	7
	How frequent: Pace/rate, repetitive momentum, temporal distance	8
	How fast or what speed: Speed of integration, speed to enter new alliance	6
	Experience: Experience^{proxy}, duration	E: 70; D: 7
	Learning: Learning about^{proxy}, learning from^{proxy}, stage, duration	LA: 10; LF: 67; S: 8 D: 2
	What order or sequence: Sequence	2
	What rhythm, cycles, spirals: Rhythm, variability	R: 1; V: 1
Assumptions of time	Whether time is:	
	Clock time?	142
	Cyclical time?	5
	Event time predictable?	1
	Event time unpredictable?	143
	Life cycle?	9
	Whether time is objective or subjective?	O: 142; S: 2
	Whether time is studied directly or as a proxy?	D: 18; P: 108; D&P: 18
Temporal reference point	Past	6
	Present	4
	Future	0
	Past and present	116
	Present and future	10
	Past and future	9
	Past, present and future	5
Temporal study design	Cross-sectional (at specific time span: past, present, future)	81
	Longitudinal (across time spans)	35
	Longitudinal change	9
Single vs. multiple M&A and alliance initiatives	Single alliance	55
	Single acquisition	13
	Multiple alliance/alliance portfolio	44
	Multiple acquisition/acquisition program	29
	Single alliance and single acquisition	1
	Multiple alliances and acquisitions	5
Organizational outcomes	Accounting based performance—alliance/acquisition level	3
	Market based performance—alliance/acquisition level	2
	Subjective measure of performance—alliance/acquisition level	11
	Accounting based performance—firm	8
	Market based performance—firm	22
	Subjective measure of performance—firm	2
	Successful alliance (e.g., stability, reorganization, survival, takeover, license)	16
	Project level success (e.g., new product launch, patent, project IPO)	2
	Learning occur or not (e.g., knowledge transfer)	38
	Learning process (e.g., cooperative vs. competitive, imitation, integrative learning)	14
	The probability of alliance/acquisition	24
	Alliance/partner characteristics (e.g., contractual form, location, industry, trust)	7
	Organizational structure and decision making process	29

a. The total frequency count within each evaluation criterion can exceed the total number of articles reviewed ($N = 144$) since some studies fit multiple evaluation criteria.
b. All are direct measures except those labeled as proxy.

The *temporal constructs* criterion identifies the theoretical constructs used in each temporal role.

The *assumptions of time* evaluation criterion refers to how time is conceptualized and measured. We examine four assumptions of time. First, time can be conceptualized and measured based on a clock or by cycles where events repeat over and over or as a developmental pattern of a life cycle. A second assumption is that time reckoning can be based on events that are either predictable (e.g., acquisition integration follows the closing of the deal) or unpredictable (e.g., M&As are not planned). A third assumption regards whether a study's time constructs are proxies for other constructs of interests (such as equating time with trust or experience) or direct theoretical constructs and empirical measures (such as speed, pace, variability, sequence). The fourth assumption is that time can be either objective or subjective. An objective framing assumes time is homogeneous, uniform, and packaged in measurable units, while a subjective view assumes that the experience of time varies across individual decision makers or contexts.

The *temporal reference point* evaluation criterion refers to the time orientation of decision makers, that is, whether they anchor their decisions with a referent point in the past, present, or future (Mosakowski & Earley, 2000). While some studies adopt a past referent point and view acquisition and alliance decisions as path dependent, evolving and nested within a firm's history (such as the "experience" and "learning" roles), others adopt a present perspective and focus on the status quo of an acquisition or alliance (such as the speed of integration or first movers in an acquisition wave). A study can adopt a combination approach, that is, a past–present, past–future, present–future, or past–present–future perspective.

The *temporal study design* evaluation criterion refers to how the studies are constructed with respect to time. Researchers can collect alliance or acquisition data within a specific period or longitudinally across different periods or track specific changes in the content and processes of alliances and acquisitions at different points in their history. Temporal study design, in our view, is an evaluation of how theoretical constructs are defined, of how the temporal constructs are empirically operationalized, and of the analytical techniques used to test hypotheses.

The *single versus multiple M&A and alliance initiatives* evaluation criterion distinguishes studies based on whether acquisitions and alliances are conceptualized as a single strategic initiative (e.g., sequence of decision making within an alliance) or as multiple and serial repetitions (e.g., strategic momentum, variability, and sequences of acquisitions/alliances). Single alliance and acquisition initiatives usually focus on temporal constructs such as duration, speed, and learning, while multiple activities are related to constructs such as frequency, rhythm, and experience.

The temporal influence on *organizational outcomes* evaluation criterion examines various organizational consequences for a study's temporal hypotheses. Organizational outcomes cover a wide range of indicators including accounting-based, subjective evaluations, learning, and organizational structures, to mention a few. This criterion can also be used to assess whether a study's theoretical temporal role and temporal reference point are congruent with its empirical outcome measurement.

Coding Method

Each article was read by at least one of the authors and assigned to one of the temporal roles. An article could be classified into more than one temporal role based on its theory, constructs, and methods. The articles were then coded based on the six evaluation criteria. As noted in the previous section, for each criterion, there are several subcriteria that are not necessarily mutually exclusive. The subcriteria were identified based on prior time-related articles and on our reading of the 144 identified articles. For example, for the assumption of time criterion, Ancona, Okhuysen, and Perlow (2001) identified several different types of time including clock, cyclical, event, life cycle, and subjective time. They reflect different aspects of time. Since authors usually did not explicitly state their assumption of time, we inferred the classification based on a set of definitions we developed from our reading of the literature. Whenever there was a question regarding a specific coding, a second and sometimes third author read the study and judgment calls were made after a discussion. Our process involved a set of iterative steps with multiple review points and comparisons across the articles.[3]

Key Findings, Theories, and Mechanisms

Major Findings Within the Seven Temporal Roles

We organize our discussion based on the temporal roles. Table 4 contains a summary of the key findings.

"When" role. The major questions that the "when" role explores include the following: When should firms engage in alliances or acquisitions? Do first mover effects associated with partnering with other firms or acquiring targets produce economic value? If so, what are the key contingencies? What are the antecedents of entry timing? This stream of research suggests that "when" to make an alliance or acquisition is an important strategic decision that needs to be managed by alliance and acquisition managers. However, the scarcity of empirical studies ($n = 7$) in this role indicates that strategic scholars have paid limited attention to this line of inquiry. Theoretical arguments are largely built on the Bain/Mason industrial organization framework and more recently on organizational learning. The first mover advantage perspective derived from classic economics prescribes that managers need to move fast to ally with partners and acquire targets to preempt valuable and often limited-in-supply resources. This line of theoretical reasoning often draws on underlying mechanisms such as information asymmetry, switching costs, and preemption. For instance, using 20 years of data from the Securities Data Company database, Carow et al. (2004) found that the combined returns of acquirer and target firms are higher for early movers than for late movers within an acquisition wave. Isobe, Makino, and Montgomery's (2000) research in the emerging markets context indicated that early alliance moves positively affect JV performance. However, they found this relationship largely hinged on several internal and external factors, such as the strategic importance of an investment, parental control of a JV, and the availability of supporting local infrastructure.

Table 4
Summary of the Key Findings by Temporal Role

Category	Key Findings
When	*The probability of alliance/acquisition*
	Firm will seek out alliances with similar strategies, i.e., first mover seeking first mover, low-cost seeking low-cost, and second mover seeking second mover. (Insch & Steensma, 2006)
	Acquisitions are more likely to occur before the passage of the standard when (a) acquirers lacked relevant technical knowledge, (b) target firms possessed relevant technical knowledge, and (c) acquirers had a prior equity investment in the target firm. (Warner et al., 2006)
	The probability of acquisitions rose with attainment discrepancy for below-aspiration firms and fell for above-aspiration firms. (Iyer & Miller, 2008)
	Optimal time for market entry
	Acquisitions should be made in periods of market lows (negative relationship between timing relative to the market cycle and firm performance). (Kusewitt, 1985)
	This article presents an entry timing decision criterion that optimal timing for exercising real options depends on current dividends, possibilities for preemption, and whether the option is simple or compound, proprietary or shared. (Miller & Folta, 2002)
	"Strategic pioneers" within industry merger waves realize higher abnormal returns than other "happenstance" early-mover acquirers. (Carow et al., 2004)
	Performance
	The combined returns of acquirer and target firms are better for early-mover transactions than for later acquisitions within acquisition wave. (Carow et al., 2004)
	Acquisition performance is higher for early movers but lower for acquirers that participate at the height of the acquisition wave. (McNamara et al., 2008)
How frequent	Acquisition rate should be sufficiently high to develop and maintain expertise but not so high that acquisitions cannot be given the attention they require for proper assimilation and integration. (Kusewitt, 1985)
	Prior merger type will reinforce future merger in the same type. (Amburgey & Miner, 1992)
	Firm's foreign and domestic acquisition experience will increase its acquisition rate. (Nadolska & Barkema, 2007)
	A high acquisition rate is negatively related to acquirer performance. Acquisition experience moderates the relationship by weakening the negative effects. (Laamanen & Keil, 2008)
How fast or what speed	Slow acquisition implementation is positively associated with preservation of tacit or socially complex knowledge, the degree of acquired technologies and capabilities, and the autonomy of the acquired firm. Slow acquisition is curvilinearly associated with the transfer of technologies and capabilities to the acquirer. (Ranft & Lord, 2002)
	The speed of integration is positively associated with market-related performance after M&A. (Homburg & Bucerius, 2005)
	Pharmaceutical companies when they acquired biopharmaceutical firms mainly focused on the rapid integration of all non-R&D-related portions of the acquired businesses, while the R&D-related portions retain a high degree of autonomy. (Schweizer, 2005)
	Speed of integration has a strong positive effect on M&A success in the case of low external and high internal relatedness and a strong negative effect in the case of high external and low internal relatedness. (Homburg & Bucerius, 2006)
	Prior alliance experience leads to the development of alliance capabilities that enable firm to enter into new alliances faster. (Al-Laham et al., 2008)
	The faster the integration, the greater the internal reorganization goal achievement. (Cording et al., 2008)
Experience	*Performance*
	Acquiring firms that pursue a strategy of higher activity (experience) in the external acquisition market may outperform acquiring firms that follow less active strategies. (Lubatkin, 1983)

(continued)

Table 4 (continued)

Category	Key Findings
	Organizational performance improved as the number of acquisitions increased. (Fowler & Schmidt, 1989)
	The association of past acquisition experience and acquisition success can be generalized to distress acquisitions. (Bruton et al., 1994)
	Previous collaborative experience alone does not ensure that a firm will benefit from a collaboration. (Simonin, 1997)
	When a firm's current acquisition was dissimilar to its prior acquisitions, acquisition experience had a negative influence on acquisition performance; when a firm's current acquisition was similar to its prior acquisitions, acquisition experience had a positive influence on acquisition performance; when experience across all acquirers was examined, the effect of acquisition experience was U-shaped. (Haleblian & Finkelstein, 1999)
	Each diversity measure of partner experiences (acquisition premiums, acquisition size, network diversity, and network partner size) has independent effects on the premium paid by the focal firm; firms in networks with heterogeneous partner experience pay lower premiums than those in networks with homogeneous partner experience. (Beckman & Haunschild, 2002)
	Experience is necessary but not sufficient for performance; small loses before focal acquisition leads to better performance; nature—moderately similar acquisitions better; timing—not too close and not too distant in time is better for performance. (Hayward, 2002)
	Alliance experience is positively associated with a firm's overall alliance success, especially long-term success based on managerial assessments. (Kale et al., 2002)
	Partner-specific experience, rather than other types of alliance experience, influences the performance of collaborative agreements in the biotechnology industry. (Zollo et al., 2002)
	A previous alliance between an acquirer and a target correlates positively with acquisition performance. (Porrini, 2004)
	Prior general alliance experience has a positive effect on the likelihood of alliance success that decreases as alliance experience increases. (Hoang & Rothaermel, 2005)
	While collaborative benefits are enhanced with prior alliance experience, more extensive experience does not appear to improve outcomes over more limited experience. (Sampson, 2005)
	Firms with greater alliance experience, all else being equal, achieved a greater level of new product development. (Rothaermel & Deeds, 2006)
	Experience is an important antecedent of alliance performance and a firm's entire alliance portfolio. (Heimeriks & Duysters, 2007)
	The use of integrating mechanisms and alliance experience are both important and significant predictors of a firm's alliance portfolio performance, while emphasizing institutionalization of prior experience is likely to negatively affect a firm's alliance performance. (Heimeriks et al., 2007)
	Restructuring positively impacts performance; acquisition intensity and restructuring experience affect balance between acquisition growth and restructuring—learning and experience matters. (Barkema & Schijven, 2008b)
	The liabilities of Alliance Portfolio Internationalization (API) can be mitigated and financial performance can be enhanced if a firm is experienced in managing cross-national alliances and relies on its internal network of foreign subsidiaries when collaborating with foreign partners. (Lavie & Miller, 2008)
	A firm would make better acquisition decisions to the extent that the firm's outside directors had experience with acquisition decisions (a) in the same product markets, (b) with related acquisitions, and (c) with unrelated acquisitions as the acquisitions being pursued by the focal firm. (McDonald et al., 2008)

(continued)

Table 4 (continued)

Category	Key Findings
	Prior experience with the same partners, "partner-specific experience" (PSE), provides greater benefits than "general partnering experience" (GPE), which encompasses all prior alliances with any partner. (Gulati et al., 2009)
	Market complementarity creates value for acquirers only when they have sufficient experience with integrating and managing a target located outside their traditional market, but it may hurt their performance when they do not have such experience. (Kim & Finkelstein, 2009)
	In the context of large, related acquisitions, prior small related acquisition experience is negatively associated with postdeal performance, while prior large related acquisition experience is positively associated with postdeal performance. This relationship is moderated by product dissimilarity, geographic reach dissimilarity, cultural similarity, retention of target top managers, level of integration. (Ellis et al., in press)
	Knowledge and capability
	Tacit specialized knowledge about business and how to negotiate and implement a business combination are keys to successful acquisition of distressed firms. (Bruton et al., 1994)
	A path-dependent cycle of learning is found in which an early choice of exploration elicited positive feedback. (Powell et al., 1996)
	Firms learn from past collaborations by developing skills of collaborative know-how. This collaborative know-how in turn allows firms to achieve greater benefits from collaborations. (Simonin, 1997)
	The measure for firms' capabilities, using their past experience as an indicator, was a significant predictor of new alliance activity by firms. (Gulati, 1999)
	Firms learn to create more value as they accumulate experience in joint venturing, whereas there is no evidence that firms learn to create value as they accumulate experience in licensing; learning effects are stronger in R&D joint ventures than they are in other forms of joint ventures. (Anand & Khanna, 2000)
	Social capital arising from banks' direct and indirect collaborative experiences plays a very important role in alliance formation. (Chung et al., 2000)
	Both overseeing effort and management involvement are significant channels of knowledge acquisition. (Tsang, 2002)
	A joint venturing firm should draw on its relevant experience, and evaluate the extent to which that experience needs to be supplemented by a partner's local knowledge. (Child & Yan, 2003)
	Acquisition capabilities and the acquirer's prior business experience in the host region enhance the ability of an MNE to develop and grow acquired foreign subsidiaries. (Uhlenbruck, 2004)
	More international experience develops organizational capabilities that enable firms to make greater commitments to a foreign investment. (Dikova & Witteloostuijn, 2007)
	Alliance experience changes the way firms learn: firms with little alliance experience make relatively more use of integrating mechanisms in comparison to institutionalizing mechanisms; firms with extensive alliance experience make relatively more use of institutionalizing mechanisms. (Heimeriks et al., 2007)
	Experience and learning might improve focal firm performance, but interactions among competing organizations can create a context in which such internal performance improvements do not translate into competitive advantage. (De Clercq & Dimov, 2008)
	The knowledge gained from a prior alliance helps partners learn about a firm's routines and some information regarding its core technology. (Li et al., 2008)
	The firm's accumulated experience with foreign partners contributes to its general ability to manage an international alliance portfolio. (Lavie & Miller, 2008)
	Experience accumulation worsens, rather than alleviates, the problem connected to a negative impact of subjective assessments of past acquisition experience on the performance of focal acquisition. (Zollo, 2009)

(continued)

Table 4 (continued)

Category	Key Findings
	Firms pursue programs of acquisitions and alliances that are implied by the accumulation of their established capabilities that may have generated strong prior responses. (Arikan & McGahan, 2010)
	Organizational structure and decision making process
	Ex post governance changes are a feature of many collaborations in the biotechnology industry; firms' unique alliance experience trajectories affect the likelihood of such ex post adjustments in these partnerships. (Reuer et al., 2002)
	Top management turnover was higher in firms acquired by non-U.S. firms than in firms acquired by U.S. firms; however, it was lower in firms acquired by non-U.S. firms without prior U.S. FDI experience. (R. Davis & Nair, 2003)
	Firms approach foreign entry as a staged process, taking into account their characteristics, their own prior experience, the experiences of other firms with which they are connected, and the emerging norm in their home-country industry. (Guillen, 2003)
	Cross-organizational roles, and hence serendipitous value, may be more likely to emerge from the first few acquisitions that a buyer conducts than from subsequent deals; acquired managers will be more likely to receive cross-organizational responsibilities if the buyer has conducted few prior acquisitions and has vacancies in its top management team. (Graebner, 2004)
	Probability
	Participants with overcommitment continued to pursue acquisition target over time, even in the face of negative information and clear opportunities for withdrawal. (Haunschild et al., 1994)
	Experience with domestic joint ventures and with international wholly owned subsidiaries contributed to the longevity of international joint ventures (IJVs), but prior experience with international joint ventures did not. (Barkema et al., 1997)
	The possession of any type of experience-based assets did not appear to be sufficient to enhance chances of survival of an acquisition. (Hebert et al., 2005)
	Both acquisition experience and focal acquisition performance positively influenced the likelihood of a firm's making a subsequent acquisition. (Haleblian et al., 2006)
	A firm's cumulative experience in unrelated M&As positively affects its propensity to choose an unrelated M&A. On the other hand, a firm's experience in related M&As negatively affects the likelihood of an unrelated M&A. (Yang & Hyland, 2006)
	Experience can affect firms in one of two ways: (a) increasing the likelihood of entry, but reducing the likelihood of survival if they do enter, or (b) reducing the likelihood of entry, but increasing the likelihood of survival if they do enter. (Thomas et al., 2007)
	Firms that have experienced prior terminations are less likely to have their future alliance terminated. (Pangarkar, 2009)
	The likelihood of new alliance formation is highest within a year from the time a firm engages in an international marketing alliance; cultural distance experience increases the likelihood that a company will engage in a future international marketing alliance. (Yeniyurt et al., 2009)
	In institutionally less distant countries, experience with completed deals increases the likelihood of a focal deal completion. In cases of the focal deal being completed, past experience with deal completion shortens the duration of the intermediary acquisition phase in institutionally more different environments, whereas the effects of such experience are more erratic in institutionally more proximate environments. (Dikova et al., 2010)
	Alliance/acquisition characteristics
	Firms escalate their commitment to a given foreign market over time, shifting from joint venture to whole ownership as they accumulate relevant experience. (Guillen, 2003)
	Firms lacking international and domestic acquisition experience turn to contingent payouts when purchasing targets in high-tech and service industries. (Reuer et al., 2004)

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Table 4 (continued)

Category	Key Findings
	Firms with greater acquisition experience are more inclined to choose acquisitions over alliances and divestitures; firms with greater divestiture experience are more likely to choose divestitures over both alliances and acquisitions; firms with greater alliance experience are more likely to choose alliances over divestitures, yet they are not significantly more likely to choose alliances over acquisitions. (Villalonga & McGahan, 2005)
	The contractual complexity of an alliance will be negatively related to the number of prior alliance between the partners; the contractual complexity of an alliance will be greater for time-bound alliances than for open-ended collaborative relationship. (Reuer & Arino, 2007)
	MNEs have a higher preference for acquisitions compared with greenfield investment in culturally distant countries when they have little international experience. (Slangen & Hennart, 2008)
	Firms' patent portfolios and aggregate partner-specific experience significantly influence equity mode choice at the portfolio level; governance capabilities developed from prior experience have a strong influence on firms' cooperative mode choice. (Aggarwal & Hsu, 2009)
	Equity joint venture experience has stronger effects on speeding up the pace of sequential entries of MNEs than contractual arrangement experience. (Gao & Pan, 2010)
Learning	*Performance*
	Process may be more important than structure in determining learning outcomes. (Hamel, 1991)
	Organizational learning and adaptation as critical processes that moderate partners' diversity's impact on alliance longevity and effectiveness. (Parkhe, 1991)
	Successful alliance projects go through a sequence of learning cycles of learning, reevaluation, and readjustment; learning mediates between initial conditions and outcomes; both initial conditions and learning affect outcomes. (Doz, 1996)
	Knowledge acquisition is positively related to IJV performance. (Lyles & Salk, 1996)
	The longevity of foreign ventures is more strongly and positively related to prior foreign expansion experiences in the case of double layered acculturation (JVs and acquisitions) than in the case of single layered acculturation (Wholly Owned Subsidiaries [WOSs] and start-ups). (Barkema et al., 1996)
	IJV learning is positively related to IJV survival. (Steensma & Lyles, 2000)
	More asymmetric outcomes of link alliances translate into greater changes in the relative market shares of the partner firms, due to unbalanced opportunities for interpartner learning and learning by doing. (Dussauge et al., 2004)
	The degree of codification has a strong and positive influence on acquisition performance. (Zollo & Singh, 2004)
	Alliance function affects firm-level performance through its influence on the alliance learning process, which includes articulation, codification, sharing, and internalization of alliance knowledge. (Kale & Singh, 2007)
	The extent to which performance improvements are partnership exclusive depends on whether the newly gorged capabilities lie entirely within the supplier firm's boundaries, or at the learning dyad level. The resource-based view helps explain the performance gains learning suppliers deploy across average partners; the relational view reveals the additional performance edge that remains exclusive to the learning partnership. (Mesquita et al., 2008)
	Knowledge and capability
	Asymmetries in learning alter the relative bargaining power of partners. (Hamel, 1991)
	Identify strategic positioning and organizational learning are major motives for firms to engage in alliance activities. (Glaister & Buckley, 1996)
	Adaptation mechanisms such as capacity to learn, articulated goals, and structural mechanisms, such as the provision of training, technology, and managerial assistance, are positively related to knowledge acquisitions. (Lyles & Salk, 1996)

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Table 4 (continued)

Category	Key Findings
	Technological knowledge transfer will be enhanced in equity joint venture than contractual alliance. (Mowery et al., 1996)
	Firm's ability to learning from another firm depends on the relative absorptive capability, i.e., the similarity of both firms' (a) knowledge bases, (b) organizational structures and compensation policies, and (c) dominant logics. (Lane & Lubatkin, 1998)
	Knowledge learning in alliance depends on partners' absorptive capacities and the collaborative strategies. (Kumar & Nti, 1998)
	The more tacit, specific, and complex the partner's marketing know-how, the higher the corresponding level of ambiguity in the transfer process. (Simonin, 1999b)
	Knowledge ambiguity is a full mediator of tacitness, complexity, prior experience, and cultural distance on knowledge transfer. Alliance duration is moderated this above relationship. (Simonin, 1999a)
	Learning from experience and learning by doing in the presence of knowledgeable partners become an essential condition for circumventing ambiguity and favoring knowledge transfer. (Simonin, 1999a)
	Link alliances lead to greater levels of learning and capability acquisition than do scale alliance. (Dussauge et al., 2000)
	Proposed a framework that examines the antecedents of knowledge acquisition in alliance. Both accessibility of alliance knowledge and partner knowledge acquisition effectiveness are important for knowledge acquisition. Alliance experience is linked with knowledge relatedness, which further affects partner knowledge acquisition effectiveness. (Inkpen, 2000)
	A learning perspective on alliance complements and extends transaction-cost theory, providing additional explanation of the sources of change, and the specific governance choices being made. Specifically, Toyota's internalization strategy has been viewed as a way to build its absorptive capability when they see the future of automobile hinges on electronics knowledge. (Ahmadjian & Lincoln, 2001)
	Absorptive capability will influence the knowledge learned from the foreign partner that further enhances IJV performance. (Lane et al., 2001)
	Two important prevalent combinations: joint ventures in medium R&D intense industries with reciprocal knowledge flow; technical agreements with reciprocal knowledge flows in high-tech industries. (Reddy et al., 2002)
	Capability building takes place through two broad groups of learning processes: acquisitive learning and learning-by-doing that complement each other. Initial conditions define a trajectory for the learning path. Knowledge management practices influence the pace and direction that the learning processes take within this trajectory. (Keil, 2004)
	There are strong effects of learning to contract that have characteristics more consistent with behavioral and evolutionary theories of organizational learning than with transaction cost theory; the learning effects occurred in directions consistent with those predicted by transaction cost theory; contracts played an important role as repositories of knowledge about how to collaborate and contract in the relationship we studied. (Mayer & Argyres, 2004)
	Learning intent (as a driver) and knowledge ambiguity (as an impediment) emerge as the most significant determinants of knowledge transfer; the effective of partner protectiveness and learning capability on knowledge transfer are moderated by organizational culture toward learning, size of the firm, structural form of the alliance, and the characteristics of alliance partners (competitor or not). (Simonin, 2004)
	Reciprocal commitment, trust, and mutual influence positively relate to learning and knowledge transfer in alliances. (Muthusamy & White, 2005)

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Table 4 (continued)

Category	Key Findings
	Contractual joint ventures replicated part of their HK parent's know-how, which depended on local Chinese managers' learning intent and learning ability; HK partners also learned from managing the JV and local environment; the article also identified collective learning as opposed to competitive learning between KH and Chinese managers, which was largely built on character and process-based trust. (Y. Wang & Nicholas, 2005)
	Tacit knowledge is difficult to transfer; as learning alliance moves from initial condition to evolved conditions and cooperation between the partners strengthens, tacit knowledge transfer will increase; lack of absorptive capacity to exploit the knowledge will lead to competitive learning behavior; social capital between alliance partners facilitates knowledge sharing. (Inkpen & Pien, 2006)
	The types of knowledge and learning required in the management of different types of business net are dependent on the value creation characteristics of the net types; net actors and the nets they form try to match these epistemic conditions in their learning and knowledge utilization. (Moller & Svahn, 2006)
	Compared with other firms, firms engaging in corporate entrepreneurship benefit more from strategic alliances with a complementary fit, that helps them develop first mover advantage, with relation-specific assets, and in which significant tacit knowledge is developed. (Teng, 2007)
	Transfer of tacit versus explicit knowledge has very different trust and risk profiles: explicit knowledge is closely associated with the firms' willingness to take risk; tacit knowledge is intimately related to high trustworthiness; transfer knowledge mediates the effect of trust, willingness to take risk on the success of the alliance. (Becerra et al., 2008)
	Two possible explanations for the knowledge transfer in alliances: one is that the systematic implementation of knowledge transfer mechanisms can overcome the stickiness and causal ambiguity of new knowledge, and the second is that creating successful knowledge transfer should be viewed from a change management perspective in which trial and error learning experiences and experimentation support the transfer outcome. (Inkpen, 2008)
	Recipient learning intent mediates the relationship between knowledge characteristics and knowledge transfer between cross-border alliance partners. (Pérez-Nordtvedt et al., 2008)
	Three types of knowledge (technology, managerial, market) are unevenly distributed and exchanged among alliance partners; in many alliance relations, partners exchange technological knowledge together with market and managerial knowledge. (Sammarra & Biggiero, 2008)
	Knowledge accession does not involve organizational learning. Cost associated with the transfer process is lower and trust is easier to establish than in the case of knowledge acquisition. (Buckley et al., 2009)
	Knowledge tacitness and trust act as two mediating mechanisms in the relationship between partner characteristics and alliance learning. (Nielsen & Nielsen, 2009)
	Firms' technological knowledge depth has a negative relationship with its tendency to enter a research alliance; firms' technological breadth has a positive relationship with its tendency to enter a research alliance. (Zhang & Baden-Fuller, 2010)
	Learning process
	Understand the mode of learning process within the joint ventures as foreign partners endeavor to change the behavior of local managers. Several different learning processes are identified, including nonlearning, forced learning, imitation, received learning, integrative learning, and segmentation. (Child & Markoczy, 1993)
	Four key elements of organizational learning are addressed: the nature of learning experience, the sharing and integration of learning within an organization, the institutionalization of learning, and the relationship between learning and performance; a rigid set of managerial beliefs associated with an unwillingness to cast off or unclear past practices can limit the effectiveness of organization learning. (Inkpen & Crossan, 1995)

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Table 4 (continued)

Category	Key Findings
	Appropriate control mechanisms are need for effective learning to take place in alliance; dissimilar learning needs and capabilities of the partners result in unequal learning rates; such unequal learning sets into motion a continual reconfiguration of the original relationship between the two partners. (Makhija & Ganesh, 1997)
	A framework is proposed to understand the learning dilemma through consideration of trade-offs between how collective learning is developed in alliances and how the joint learning outcomes are divided among the partners. (Larsson et al., 1998)
	Four key processes of knowledge transfer in alliance are identified, i.e., technology sharing, alliance–parent interaction, personnel transfers, and strategic integration; each process provides an avenue for managers to gain exposure to different types of organizational knowledge. (Inkpen & Dinur, 1998)
	Firms facing dynamic tensions between managing hybrid systems and aligning partners' logics of action will adopt two approaches, individual emphasis and collective emphasis approaches. Each approach will lead toward different learning dynamics and scope. (Jones et al., 1998)
	The authors develop a framework to understand the learning dynamics in alliance. They show how tension between cooperation and competition affects the dynamics of learning. Private benefits and common benefits differ in the incentives that they create for investment in learning. (Khanna et al., 1998)
	The authors proposed a framework that views alliances in the context of the adaptation choices of a firm, i.e., alliances coevolve with the firm's strategy, the institutional, organizational, and competitive environment, and the management intent for the alliance. (Koza & Lewin, 1998)
	Partners' assessments cause them to either engage in renegotiation of the terms of the contract or modify their behavior unilaterally, in an attempt to restore balance to the relationship; positive feedback loops are critical in the evolutionary process, relationship quality is both an outcome and a mediating variable, and procedural issues are critical from the start in fostering a climate for positive reinforcement and the building of mutual trust and confidence in the relationship. (Arino & Torre, 1998)
	Relational capital based on mutual trust and interaction at individual level between alliance partners creates a basis for learning and knowledge transfer. It also curbs opportunistic behavior of alliance partners, thus preventing the leakage of critical know-how between them. (Kale et al., 2000)
	Identify two important factors that lead to knowledge sharing, transfer, and new knowledge creation. Two dimensions of collaboration are embeddedness and involvement. (Hardy et al., 2003)
	Develop a framework to understand how partners working under an existing alliance governance structure will organize a new product development project. (Gerwin & Ferris, 2004)
	Develop a framework on how to leverage learning alliances across extra- and intracorporate levels to support both exploration and exploitation of innovation to secure its creation and its implementation. (Harryson et al., 2008)
	Organizational structure and decision making process
	Japanese automotive value chains are characterized by greater interfirm asset cospecialization than U.S. chains. Specifically, greater human asset cospecialization between firms results in superior coordination and learning. (Dyer, 1996)
	The learning motives is relatively more important (than cost sharing motive) in R&D alliance where the partners possess more heterogeneous capabilities; firms that are motivated more by learning to join R&D alliances are likely to increase R&D spending. (Sakakibara, 1997)
	Choice of alliance scope affects the mix of private and common benefits, which in turn affects alliance partners' incentives to invest in learning and how a particular alliance evolves and how firms management multiple alliances. (Khanna, 1998)

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Table 4 (continued)

Category	Key Findings
	Partners are more likely to reorganize or take over link alliances than scale alliances. (Dussauge et al., 2000)
	Firms' life-cycle alliance formation is not linear. Alliance-based learning is vital to biotechnology firms at early stages of their formation, when learning is associated with exploration; at later phases of the life cycle, learning is internally exploited through intrafirm network. (Oliver, 2001)
	Identify the linkage between alliance form and employment–employee relations. (Rubery et al., 2002)
	Experiential learning is a driving force behind much intra- and interorganizational change in the form of transformations between exploitation and exploration. (Holmqvist, 2004)
	In the evolved condition in alliance, both trust and learning will coevolve and jointly determine JV controls. (Inkpen & Currall, 2004)
	Management control is positively related to learning; however, it is also negatively related to partner interaction; partner interaction is positively related to learning; learning intent enhances management control. (Lin, 2005)
	Alliances lead to more explorative learning than acquisition. (Schildt et al., 2005)
What order or sequence	Propose a theoretical model that portrays the sequence of the decision process leading to international cooperative venture (ICV) formation. The sequence includes (a) whether to cooperate or not, (b) contract or equity, and (c) the terms of the relationship. (Tallman & Shenkar, 1994)
	Position of an acquisition in sequence related to its impact on performance. Later in sequence lowers performance. (Barkema & Schijven, 2008b)
	Empirically identify seven different sequence patterns and demonstrate that firm and performance attributes differ across these sequences and depending on the contingent effect of a firm's stage of development. (Shi & Prescott, 2011)
What rhythm, cycles, spirals	The effectiveness of managerial teams can be increased if the team shares a common temporal mental model with regard to the alliance. This shared mental model in terms of the elements of entrainment (e.g., cycle, pace, time orientation) will allow team members to actively assess and better manage entrainment issues that are a crucial component of strategic alliances. (Standifer & Bluedorn, 2006)
	A high variability of the acquisition rate is negatively related to the acquirer's performance. (Laamanen & Keil, 2008)

A real option perspective of the "when" role focuses on the optimal timing of entry or its associated determinants. Related theoretical mechanisms include uncertainty reduction, opportunity for growth, and trade-offs between commitment and flexibility. Alliance and acquisition timing is usually found to be highly related to technological uncertainty, knowledge stocks of both acquirers and targets, and prior relationships with partners or targets (Warner, Fairbank, & Steensma, 2006).

Behavioral theorists tend to agree that first movers enjoy significant benefits in the form of preemption of critical resources. In this vein, they build on theories derived from first mover advantage research. However, the behavioral approach underscores the costs assumed by late movers. Specifically, late movers are motivated to enter into acquisitions based on bandwagon pressures (Abrahamson & Rosenkopf, 1993). Firms following a bandwagon approach make decisions based on social cues rather than comprehensive market information. Consequently, they often make less accurate decisions (McNamara et al., 2008).

"Frequency" role. We identified eight articles in this role indicating that while knowledge accumulation has been slow, the frequency role has gained interest in recent years. The frequency role deals with studies where firms are engaged in building acquisition programs (Laamanen & Keil, 2008; McNamara et al., 2008) or alliance portfolios (Lavie, 2007; Ozcan & Eisenhardt, 2009). Some of the relevant constructs include acquisition rate (Laamanen & Keil, 2008), pace of acquisitions (Nadolska & Barkema, 2007), temporal distance between acquisitions (Hayward, 2002), and repetitive momentum (Amburgey & Miner, 1992).

Two key questions have been examined. The first asks, what are the determinants of firms' frequency of acquisition/alliance activity? The second question centers on the performance implications of acquisition/alliance frequency. Research findings have been inconsistent to date. In a study of U.S. public firms, Laamanen and Keil (2008) found that a high acquisition rate negatively affected the acquirer's performance. Hayward (2002) and Kusewitt (1985), however, found that a firm's acquisition pace should proceed at a moderate level to achieve superior performance.

The organizational learning perspective is the major theoretical lens adopted by scholars to understand the rationale for and outcomes of frequency. Essentially, a firm's acquisition pace influences its development of an acquisition/alliance capability, that is, the ability to identify suitable acquisition targets, negotiate the deal, and manage the integration process (Haspeslagh & Jemison, 1991). The general argument supporting a negative relationship between acquisition pace and performance is 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). On the other hand, scholars who hypothesize an inverted *U*-shaped relationship between acquisition pace and performance question the value of making inferences from older experiences. Since the external environment changes and corporate managers relocate within and across firm boundaries, organizations as well as individuals may simply forget what they have learned in prior acquisitions (Argote, Beckman, & Epple, 1990), especially when the temporal distance between events is long or when the acquisition pace is low.

With respect to the antecedents of acquisition and alliance pace, scholars share a common assumption that prior experience influences the pace of subsequent acquisition and alliance initiatives. Organizational routines, experiential learning, and absorptive capability are the major theoretical mechanisms that underlie the relationship. Nadolska and Barkema (2007), for example, argue that acquisition experience generates experiential knowledge, which over time is institutionalized into organization routines (March, 1991; Nelson & Winter, 1982). The enhanced routines reduce the time required for initiating new acquisitions (including the identification, selection, and evaluation of targets) and postacquisition integration processes (Levitt & March, 1988). This increased efficiency allows companies to conduct more acquisition per year. Similarly, Al-Laham et al. (2008) posited that firms with more alliance experience tend to create a general capability of managing alliances through improved efficiency in partner selection and enhanced learning processes.

"How fast or what speed" role. Researchers adopting this role have mainly addressed how the speed of conducting various activities for a single acquisition affects performance.

The notion of speed needs to be differentiated from pace as described in the frequency role. Pace involves multiple events over a specific period (Laamanen & Keil, 2008). Speed, according to acquisition and alliance scholars, refers to a different concept. Specifically, speed refers to the duration of conducting postintegration processes or more generally the time it takes to conduct any acquisition/alliance process (Homburg & Bucerius, 2005). Therefore, speed in most cases has focused on a single acquisition/alliance, while pace requires multiple acquisition and alliance initiatives. We identified six articles in this role. Both marketing and management scholars have examined this topic, but with a very different focus. Marketing scholars approach the issue from a customer perspective. They suggest that a positive effect of speed of acquisition integration on market-related performance is due to the fact that quick implementation reduces uncertainty faced by customers regarding product offerings, pricing policy, and contact persons (Homburg & Bucerius, 2005). This relationship is found to be contingent on customer orientation, relatedness of the firm's market positioning, relative size of the acquired firms, and market growth. Management scholars, on the other hand, tend to tackle the integration issue from a knowledge-based view where knowledge regarding acquisition integration is socially complex and tacit in nature (Ranft & Lord, 2002). Therefore, a high speed of integration jeopardizes acquisition performance by generating knowledge barriers that prevent shared experience and knowledge transfer. The theoretical mechanisms include knowledge-based processes, synergy realization, and organizational fit.

Researchers have explored the antecedents and process of acquisition integration speed. Haspeslagh and Jemison (1991), for example, found that different levels of postacquisition autonomy and strategic interdependency require different speeds of integration. Schweizer (2005) proposed a hybrid postacquisition integration approach for synchronizing short- and long-term motivations that result in the integration of value chain activities at different speeds. For example, when pharmaceutical firms acquired biotechnology firms, they rapidly integrated supporting and downstream value chain activities while more slowly integrating R&D activities. In a similar vein, Cording et al. (2008) studied the critical role that speed of integration played during internal reorganization.

"Experience" role. Compared to the prior three roles, the experience role has received significantly more attention (77 articles). As such, we discuss the role of acquisition and alliance experience separately and then examine commonalities. While there are a variety of topics related to acquisition experience, we focus on two important research streams. The first examines the relationship between acquisition experience and performance (Barkema & Schijven, 2008a; Meschi & Metais, 2006). This line of research mainly draws on learning curve effects and the organizational learning literature. Although empirical findings regarding the performance implications of acquisition experience has been mixed, including positive (Fowler & Schmidt, 1989; Haleblian, Kim, & Rajagopalan, 2006), negative (Ellis, Reus, Lamont, & Ranft, in press; Kusewitt, 1985), *U*-shaped (Haleblian & Finkelstein, 1999), and nonsignificant relationships (Hayward, 2002; Zollo & Singh, 2004), the plurality of studies found a positive effect of acquisition experience on firm performance. As would be expected when there are mixed results, researchers have examined a variety of contingencies affecting the experience–performance relationship. Some of the important conditions

include whether accumulated acquisition experience is similar or related (Hayward, 2002; Vermeulen & Barkema, 2001), whether managers who possess acquisition experience can effectively transfer knowledge from their experience (Hebert, Very, & Beamish, 2005), whether a focal acquisition is conducted in an institutionally different environment from prior acquisition experience (Dikova, Sahib, & Witteloostuijn, 2010), and whether corporate directors are willing to shape strategic decisions (McDonald, Westphal, & Graebner, 2008). There are few studies that explore the underlying mechanisms of the experience–performance relationship. For instance, Pablo (1994) reasoned that managers with more acquisition experience are likely to seek unique solutions rather than following familiar procedures and criteria when making integration design decisions, which subsequently enhances acquisition performance.

The second stream of research centers on the relationship between acquisition experience and other non-financial-performance-related outcomes such as subsequent acquisitions (Haleblian et al., 2006; Villalonga & McGahan, 2005; Yang & Hyland, 2006), overcommitment (Haunschild, Davis-Blake, & Fichman, 1994), and contingent payout (Reuer, Shenkar, & Ragozzino, 2004).

The relationship between alliance experience and performance has been a central focus in the alliance literature. Prior studies have found the relationship to be positive (Child & Yan, 2003; Lavie & Miller, 2008; Rothaermel & Deeds, 2006; Zollo, Reuer, & Singh, 2002), nonsignificant (Garcia-Canal, Valdes-Lianeza, & Arino, 2003; Merchant & Schendel, 2000), and *U*-shaped (Sampson, 2005). The organizational learning perspective has been the leading theoretical lens. A generally shared view is that firms' accumulated experience in collaborative partnering contributes to a general capability involving the selection and evaluation of partners and the management of strategic alliance processes. Scholars are increasingly adopting a contingent framework. For example, scholars have found that the alliance experience–performance relationship is influenced by the nature of the alliance, that is, whether it is equity or nonequity (Anand & Khanna, 2000), location of the alliance, that is, domestic versus international (Barkema, Shenkar, Vermeulen, & Bell, 1997), and whether experience is partner specific or general alliance experience (Gulati, Lavie, & Singh, 2009; Hoang & Rothaermel, 2005; Zollo et al., 2002). When exploring contingent effects, scholars have leveraged other theories to complement the organizational learning perspective. For example, Zollo et al. (2002), drawing on evolutionary economics, argued that repeated interaction with the same partners facilitates the development of interorganizational routines, or stable patterns of behavior aimed at facilitating interaction and cooperation across the two organizations.

A few scholars have studied the underlying mechanisms of the experience–performance relationship with the aim of explaining how alliance experience affects performance. While studies in this line of inquiry are rare, their focus on mediators is shedding new light on the experience–performance relationship. For instance, research has collectively found that alliance experience helps firms enhance their alliance capability and the creation of a dedicated alliance function, which coordinates and leverages learning to enhance performance (Heimeriks & Duysters, 2007; Heimeriks, Duysters, & Vanhaverbeke, 2007; Kale, Dyer, & Singh, 2002).

While scholars have focused on accounting-related performance outcomes, they have also examined the likelihood of subsequent alliances (Chung, Singh, & Lee, 2000; Gulati, 1999;

Yeniyurt, Townsend, Cavusgil, & Ghauri, 2009), partner selection (Li, Eden, Hitt, & Ireland, 2008), transaction mode (Guillen, 2003; Robertson & Gatignon, 1998), governance choice (Reuer et al., 2002), collaborative know-how (Simonin, 1997), and knowledge transfer (Simonin, 1999b).

"Learning" role. We identified 97 articles focusing on the learning role. The majority of them examine alliances rather than acquisitions as the unit of analysis. This is somewhat surprising because acquisitions provide a platform through which acquirers and targets can learn from each other across various interdependent subactivities such as negotiations, due diligence, and postintegration processes (Barkema & Schijven, 2008a). Alliance scholars conceptualize learning objectives, processes, and outcomes as a more central temporal construct in their stream of research than acquisition scholars.

Rather than emphasizing a direct relationship between alliance experience and performance, studies in the learning role category explore the process of learning and how to gain or acquire knowledge from alliance partners. Key research streams within this role ask the following questions: (a) What are the antecedents of learning or knowledge transfer among alliance partners? and (b) How does learning evolve within an alliance and across multiple alliances over time?

The stream of research focusing on the determinants of learning is quite rich, and the empirical findings are quite consistent. There are several factors that contribute to successful learning or knowledge transfer among alliance partners. These factors, which cut across different levels of analysis, include partner characteristics, interpartner attributes, organizational structure and process, nature of knowledge, and alliance characteristics. Partner characteristics such as absorptive capability (Inkpen, 2000; Inkpen & Pien, 2006; Kumar & Nti, 1998; Lane & Lubatkin, 1998; Mowery, Oxley, & Silverman, 1996), learning intent (Lin, 2005; Pérez-Nordtvedt, Kedia, Datta, & Rasheed, 2008; Simonin, 2004), learning orientation (cooperative vs. competitive; Hamel, 1991; Khanna et al., 1998), experience (Simonin, 1999a), and protectiveness (Simonin, 2004) are significant predictors of whether knowledge can be effectively acquired from the other party. Successful knowledge transfer is also affected by interpartner attributes such as mutual trust (Inkpen & Currall, 2004; Kale et al., 2000; Nielsen & Nielsen, 2009), degree of interaction (Larsson, Bengtsson, Henriksson, & Sparks, 1998), relative knowledge bases (Inkpen, 2000), relationships (Inkpen & Pien, 2006), asset cospecialization (Dyer, 1996), and reciprocal commitment (Muthusamy & White, 2005).

Mechanisms such as organizational structure, process, control, and learning significantly affect the effectiveness of knowledge transfer. For example, collaborative mechanisms in terms of embeddedness and involvement (Hardy, Phillips, & Lawrence, 2003), group-level learning (Inkpen & Crossan, 1995), and structural mechanisms (Inkpen & Crossan, 1995; Kale & Singh, 2007; Lyles & Salk, 1996) are found to influence knowledge sharing, transfer, and new knowledge creation.

The nature of knowledge has been found to be an important and consistent determinant of learning and knowledge transfer. This line of research grounded in the knowledge-based view suggests that knowledge characteristics such as its content (Sammarra & Biggiero, 2008), tacitness (Inkpen & Pien, 2006), complexity (Simonin, 1999b), stickiness, and causal

ambiguity (Inkpen, 2008; Simonin, 2004) create barriers for effective learning in alliances (Nielsen & Nielsen, 2009).

Effective learning is influenced by the characteristics of the alliance per se. For instance, the transfer of technological know-how is enhanced in equity joint ventures as compared to contractual alliances (Mowery et al., 1996). Learning effects are stronger in R&D joint ventures than in other JV forms (Anand & Khanna, 2000). Link alliances where partners contribute different capabilities lead to higher levels of learning and capability acquisition than do scale alliance in which partners contribute similar capabilities (Dussauge, Garrette, & Mitchell, 2000).

The above-mentioned learning and knowledge transfer determinants are often examined in combination. They usually coexist within an alliance. For instance, Pérez-Nordtvedt et al. (2008) found that recipient learning intent mediates the relationship between knowledge characteristics and knowledge transfer between cross-border alliance partners.

How learning evolves and unfolds over time is a second important area of inquiry in the learning role category. Scholars in this camp frame learning within and across strategic alliances as a dynamic and emergent process that contains cyclical feedback loops. The emphasis is on the trajectory and path of learning over an alliance's history or life course. Evolutionary economics, coevolutionary dynamics, and organizational learning are the major theoretical lenses in this research stream. Doz (1996), for example, illustrated that effective alliance learning proceeds through a sequence of learning, reevaluation, and readjustment cycles. The whole process can be understood from a stage and learning trajectory perspective (Inkpen, 2004; Inkpen & Pien, 2006; Keil, 2004).

The evolutionary process of learning approach suggests that learning does not move in one direction along a trajectory. Instead, loops, cycles, reactions, and tensions are the main themes for effective learning to take place. Arino and Torre's (1998) case study on the interaction of two multinational firms shows that positive feedback loops are central to the evolutionary process.

Alliance learning can also be seen in the context of adaptation; that is, the learning strategy within an alliance coevolves with management's intent for the alliance and the firm's strategic, institutional, organizational, and competitive environment (Koza & Lewin, 1998). This coevolutionary view has been applied to learning across multiple alliances as well. According to Oliver (2001), alliance-based learning is vital to biotechnology firms in their formative stage, when learning is associated with exploration.

"Sequence" role. The notion of sequence is an emerging topic in alliance and acquisition research (we identified two articles). While studies in the learning and experience categories sometimes allude to sequence (e.g., Doz, 1996, views alliance learning as a sequence of learning, reevaluation, and readjustment cycles and Barkema & Schijven, 2008b, conceptualize sequence as a dynamic acquisition cycle), our sequence role focuses specifically on studies that frame sequence as an ordered set of initiatives carried out across time (Abbott, 1995; Shi & Iriyama, 2010). In other words, the key questions in this role are, what is a sequence, and how and why does the order of strategic initiatives matter? A historical view of sequential activity is useful for understanding and exploring these questions. Shi and Prescott's (2011) study is an example. Drawing on historical sociology, they conceptualize a sequence as an ordered set of alliance and acquisition choices over a firm's history and

empirically identified seven different sequence patterns. They also found that firm and performance attributes differ across the sequences and are contingent on a firm's stage of development.

"Rhythm" role. While the frequency role examines temporal constructs such as acquisition pace/rate or temporal distance between two strategic initiatives, studies in the rhythm role focus on second-order temporal characteristics (Scherpereel, 2006). A second-order temporal characteristic has at least one of the two attributes: (a) it has one or more functions as an input or (b) it is an output of a function. Using mathematics as an analogy, the derivative in calculus is a second-order characteristics since it maps a function to another function. Rhythm is defined as variability in the frequency of activity over a specified period (Ancona & Chong, 1996). Both theoretical and empirical studies are rare (we found two articles). The social entrainment model is a theoretical lens that accommodates the notion of rhythm. Standifer and Bluedorn (2006), for example, argue that alliance partners manage a variety of activities within an alliance. These activities, according to their view, are rhythmic. Therefore, one important issue for managing alliances is how to synchronize the rhythmic activities between partners. For effective coordination, a firm must manage interconnected rhythmic activities either within or across alliances and acquisitions so as to maintain a consistent relationship with each other. Theoretically, effectively entraining the activities will lead to positive outcomes.

Inventory of Theories and Mechanisms for Acquisition and Alliance Temporal Roles

Hedstrom and Swedberg (1998) noted that researchers would benefit from the creation of an inventory of mechanisms for a particular research domain. In response to this call, we identified the mechanisms and phrases used to explain the proposed relationships among our set of studies' constructs. We decided to use phrases and the actual mechanisms for two reasons. First, many studies were not explicit in their identification of mechanisms but rather implicitly discussed them in the theory or discussion sections. That is, researchers often provided a descriptive explanation of the relationships among a study's constructs. Second, by cataloguing/inventorying the mechanisms by the theories they were coupled with, the mechanisms are placed in a context rather than identified in a generic sense. For example, the learning mechanism is a generic mechanism that is used in a variety of studies covering a wide range of topics. In contrast, by identifying the specific mechanisms used with a particular time role and theory, the inventory is context based. In this way, scholars can more easily identify the mechanism used in their area of research. Table 5 summarizes the major theories, and Table 6 summarizes the mechanisms.

Major Findings for the Evaluation Criteria

Temporal constructs. We identified 16 temporal constructs (Table 3) across the seven temporal roles. The most frequently examined constructs are "experience" (n = 70) and

Table 5
Inventory of Key Theories by Temporal Role

Temporal Role	Theories
When	First mover advantage, real option theory, information asymmetry, behavioral theory, attention-based theory, similarity theory, organizational learning
How frequent	Organizational routines, organizational learning, transfer theory
How fast or what speed	Knowledge-based view, resource-based view, contingency theory
Experience	Organizational learning, experience-based view, knowledge-based view, dynamic capability, behavioral theory and cognitive theory, coevolution, network theory, transaction cost theory, resource-based view
Learning	Organizational learning, absorptive capability, coevolution, behavioral theory and cognitive theory, knowledge-based view, network theory, resource-based view, transaction cost theory, relational view, benefits stream, social exchange theory
What order or sequence	Historical sociology, rational decision making
What rhythm, cycles, spirals	Entrainment theory

"learning from" (n = 67). Rhythm (n = 1) and variability (n = 1) are the least researched constructs. Some constructs refer to the same temporal role but were operationalized in different ways. For instance, acquisition pace and temporal distance between acquisitions are both constructs used to theorize about the frequency role. Acquisition pace was measured by the average number of acquisition that a firm undertook during specific period (Laamanen & Keil, 2008), while temporal distance was measured by the mean number of days between prior acquisitions (Hayward, 2002).

The same construct (e.g., rate) can be measured in different ways and by different temporal units. For instance, Laamanen and Keil (2008) measured acquisition rate by the number of acquisitions that a firm engaged in during the focal and preceding 2 years. Kusewitt (1985) measured the same construct by the number of acquisitions per year. In another study, Al-Laham et al. (2008) measured alliance pace by the discrete probability of a firm initiating an alliance between t and $t + \Delta t$, conditional on the history of the process up to time t.

Some constructs have been operationalized in the same way but refer to different constructs. Duration, for example, is a proxy for alliance capability (Gulati, 1999) and longevity (Barkema et al., 1997; Child & Yan, 2003) in the experience role, while it is conceptualized as age of the alliance in the learning role (Dussauge et al., 2000). It is clear that there is limited consensus regarding definitions of temporal constructs and their operationalization.

Assumptions of time. Consistent with prior management studies on time, an overwhelming number (n = 140 out of 144) adopted a *clock time* assumption, that is, "clock time depicts the continuum as linear-infinitely divisible into objectives, quantifiable units such that the units are homogeneous, uniform, regular, precise, deterministic, and measurable" (Ancona, Okhuysen, et al., 2001: 514). We found that most studies assume that the acquisition/alliance *event is unpredictable* (n = 143). For example, in acquisition research, scholars define acquisition returns based on periods before and after the announcement of one specific acquisition

Table 6
Inventory of Mechanisms by Temporal Role and Theory[a]

Temporal Role	Theories and Mechanisms
When	*First mover advantage* Preempt valuable resources; occupy strategic resource, switching cost, government differential treatment. *Real option theory* Trade off between commitment and flexibility under uncertainty; reduce technical uncertainty and create opportunity for growth. *Information asymmetry* Capitalize on superior information; utilize market misvaluation to create profit. *Behavioral theory and attention-based theory* Motivate organizational search under two key stimuli problems and slack; bid up acquisition price with collective buying pressure. *Similarity theory* Improve operating efficiency (low-cost and second mover), strengthen firm's competitive advantage through government relationship, and avoid conflicts and smooth coordination and cooperation. *Organizational learning* Utilize routines and learning experience; accumulate and digest acquisition experience.
How frequent	*Organizational routines* Stay with inertia. *Organizational learning* Time-compressed activities is not beneficial for build acquisition capabilities. *Transfer theory* Mistakenly generalizing routines and knowledge that have surface similarities will decrease success rate of acquisitions.
How fast or what speed	*Knowledge-based view* The learning ability of a firm is history dependent across a sequence of research alliances; overcome knowledge barrier through shared experiences and trust building; but slowness prevents meaningful realization of synergies. *Resource-based view* The integration of marketing resources is relevant for M&A performance. *Contingency theory* Fit PMI (postmerger integration) speed with internal and external relatedness.
Experience	*Organizational learning* Organizational routines once established are subject to inertial pressures. Firms adjust routines accordingly with performance feedback. When a firm takes actions over time, it develops routines and competency that then become engines for its future actions; firm benefits from learning curve and experience curve; learning curve, competency trap. Learning effects underlying the experience curve create different impacts for firms with various prior experience. The importance of learning increases with the difficulty in specifying the process or knowledge in question. Previous relevant learning eases the acquisition and application of new related knowledge. Prior experiences enhance learning of foreign market. Management learns via experience how to consolidate firms successfully. Domestic joint ventures allow firms to learn about partnering without having to simultaneously handle the vagaries of foreign settings. International wholly owned subsidiaries allow firms to learn how to operate in foreign settings without the complexities of cooperating with a partner. Deliberate learning mechanisms play an important role in capturing, sharing, disseminating, and applying alliance knowledge; learning as an important mechanisms for contract design. Firms internalize the

(continued)

Table 6 (continued)

Temporal Role	Theories and Mechanisms
	learning from their prior terminations, and also look out for partners that have prior termination experience, while avoiding those with poor reputations. Firms gain more knowledge and learn better when they have high level of resource commitment.
	Experience-based view
	Although alliance experience is important, its impact seems to work through the creation of a dedicated structure to coordinate and leverage that experience more effectively. The transfer of an organization's experience from one event to a subsequent event plays a crucial role in determining the probability of acquisition completion. Prior acquisition experience moderates the effects of market complementarity on acquisition performance. Managers probably need experience and/or skills to make successful acquisitions. Experienced firms might be in a better position to evaluate potential targets, assess sellers' claims, and reduce the incentives for misrepresentations. Firms that leverage their experience in cross-national alliances can avoid negative transfer effects and improve their performance. Experienced acquirers, looking beyond integration, design to integration implementation. Experience is only valuable if the lessons of this experience are internalized by the firm and drawn into specific know-how that can be used to guide future actions. Joint ventures help the firm shift to wholly owned operations as it accumulates experience over time. Controlling for the usual contractual costs and risks associated with joint venturing—dissipation of intangible assets and goal conflict between the partners—the potential benefits of joint ventures are expected to decrease as the company acquires experience in the foreign location. Experience in smaller deals developed routines that may not be useful for large deals.
	Knowledge-based view
	Acquisitions broaden firm's knowledge base, break inertia, and foster the development of new knowledge through combinations of existing forms of knowledge. The knowledge transfer for expatriation in cross-border acquisition is a intricate mechanism; MNEs with little international experience are likely to benefit considerably from enlarging knowledge pool by entering culturally distant countries through acquisitions. Firm's prior experience with collaborative partners results in spillover effects that affect choices made at the portfolio level. More partners increase the scope of knowledge the firm can access and offer more solutions to specific problems. JV parents can acquire knowledge from their partner in emerging economies through overseeing and management involvement, both of which are related to experiential and vicarious learning. Overseeing effort has a greater impact on acquired knowledge for experienced than for inexperienced parents.
	Dynamic capability
	Value generated by an acquisition, alliance, or divestiture depends on a firm's specific capabilities, which firms develop through repeated experience with these governance forms. Collaborations create benefits for firms to develop absorptive capacity and skill at managing collaborations, as well as promote the increased awareness of new projects and reputation as a valuable partner. A firm's alliance management capability is built through repeated engagements in alliances over time. Revealing firm's capability depends on simultaneous processes of accumulating capability through successive deals and of disseminating information to investors. Dynamic capabilities enable MNEs to successfully manage the process of establishing competitive subsidiaries. Information benefits widely contributed to external venturing activities confer advantages to CVC investors in markets to acquire technology startups.

(continued)

Table 6 (continued)

Temporal Role	Theories and Mechanisms
	Behavioral theory and cognitive theory Managers are subject to cognitive biases when they make highly important strategic decisions. When overcommitment is present, momentum builds toward completion of the acquisition. Executives create a "construed reality" of a firm's strategic situation based on their experiences, which in turn leads to specific strategic choices. Outside directors' expert knowledge can be usefully applied to enhance the quality of a focal firm's acquisition decisions. Experience accumulation will likely exert a negative effect on performance outcomes unless organizations take specific steps to reduce the occurrence and the effects of superstitious learning. As a socially embedded economic entity in search of satisfactory solutions, a firm will tend to collect information from the external parties with which it regularly interacts. Firm's acquisition behavioral outcome is influenced by its environmental conditions. Boards with expertise related to the industry of the target firm are in a better position to advise the firm and are more likely to be objective and vigilant in monitoring. *Coevolution* Alliance attributes combined with evolutionary process of firms' accumulation of knowledge from previous alliances model the postformation dynamics of collaborative agreements. Learning benefits may be highest within the early years of alliance formation activity. The effect of the alliance portfolio of a company on new alliance formation is `monotonic, implying a decreasing return of international marketing alliances to the focal organization. Partner-specific experience facilitates the development of interorganizational routines, or stable patterns of behavior aimed at the interaction and cooperation across the two organizations. *Network theory* Firms use the experience of their network partners and learn by sampling that experience. A firm's network resources result from its unique historical experience and come about in a unique path-dependent process in which both the frequency of its past ties and also the identity of its partners are critical. Firms build up concrete alliance formation capabilities with experience, which, in turn, enable them to form new alliances with greater ease and greater frequency. *Transaction cost theory* As firms with greater international experience face fewer local knowledge disadvantages, the need for local partner to ease up liabilities of foreignness decreases and the desire for full ownership increase. Transaction cost perspective accounts for the firm's decision to develop technology internally or to establish an external technology alliance. *Resource-based view* Firms select partners that allow them to hold onto their own valuable resources. Dual mechanisms created by cultural-conflict and resource-based models complement each other in deciding TMT turnover. Lack of open positions in cross-organizational responsibilities contributes to the declines in performance after small numbers of prior acquisitions.
Learning	*Organizational learning* Trust, risk taking, learning; knowledge acquisition and accession; different types of learning; learning by doing, interpartner learning, learning race; embeddedness and involvement; exploration and exploitation; tacitness; trust building; experiential learning; systematic implementation of knowledge transfer mechanisms and error learning and experimentation; alliance learning process as mechanisms; competitive versus cooperative; opportunism, asymmetric learning strategy inhibit collective learning, interaction, long-term orientation enhance collective learning; uncertainty reduction, interorganizational learning; control mechanism, learning intent, and partner interaction; adaptation and structural mechanisms; knowledge tacitness; learning differs by stage of life cycle; learning through formal training programs, structured mechanisms such as recognition, verification, and signaling systems between the partners; recipient's learning intent is the underlying mechanism that facilitates

(continued)

Table 6 (continued)

Temporal Role	Theories and Mechanisms
	knowledge transfer; resource-based, incentive-based, and cognitive-based learning ability as facilitator of learning, and knowledge ambiguity as impediment of learning; human resource mechanisms to control employer–employee relation in alliance; learning from others; nonimitable architectural knowledge; character-based trust largely embedded in the shared social identity and cultural background; process-based trust built on a common knowledge of how to work together generated from recurrent ongoing negotiations.
	Absorptive capability
	Knowledge characteristics such as complexity, specificity, and tacitness; foreign partners' support depends on the ability and intention to support; absorptive capability; absorptive capability (trust, training problem, etc.).
	Coevolution
	Coevolution, trust, control, learning, absorptive capability, psychological attachment; learning processes enable organizations to build new capabilities and thus adapt to the demands of a changing environment; inertial forces act as a counterforce effectively limiting the pace of development if not the development of capabilities; learning, adjustment, evaluation; relative absorptive ability to recognize, assimilate, and commercialize knowledge; absorptive capability, knowledge tacit, social capital.
	Behavioral theory and cognitive theory
	Under high uncertainty and tight resource constraints, managers inside firms with rationality more bounded than TCT assumption respond to these contingencies and learn how to address them contractually as the relationship unfolds; cognitive constrain; behavioral and cognitive learning along five dimensions: environment, task, process, skills, and goals. Ontological distinctions in value systems underlying the postulated ideal net types are forming widely different epistemic conditions. The level of determination of the value activities is reflected in the specificity of knowledge structures influencing the relevance of different modes of learning. Trust and adaptive flexibility.
	Network theory
	Network efficiency; asset specificity, opportunism; benefits streams; reciprocity, trust, and power balance; uncertainty; relational governance; governance mode, degree of integration, flexibility, and adaptability to change; resource dependency generate resource gaps.
What order or sequence	Historical sociology, rational decision making
	Inductive study.
What rhythm, cycles, spirals	*Entrainment theory*
	Synchronize alliance activities among alliance partners; irregular rhythm of acquisitions is not helpful in smooth utilizing managerial capacity.

a. For each temporal role, the order of the mechanisms is based on their frequency of use in the studies.

event. This event is unpredictable since the next acquisition, if it occurs, is not assumed to follow in a predictable order.

Almost all research ($n = 142$) adopted an *objective* time assumption, that is, time is based on some external metric such as past events or historical dates (Mosakowski & Earley, 2000) rather than on subjective human interpretation. Viewing time as objective is related to clock and event time since both are defined objectively, based on either specific dates or clock-related events. An example of the subjective assumption of time is provided by Standifer and

Bluedorn's (2006: 918) study of alliance management teams. As they state, "[A]lliance members recognize the subjective temporal interpretation of each organization, given that alliances are made up of at least two entities that are in most other aspects independent of each other."

Most researchers have use time as a *proxy* for other constructs of interests (n = 108). For example, time is a proxy for experience and learning. It usually takes time to learn (Inkpen, 2008) and build mutual trust (Kale et al., 2000) and reciprocal commitment (Muthusamy & White, 2005). In the acquisition literature, acquisition experience is usually measured by the number of acquisitions conducted between a specific period (e.g., from the past up to the time of a focal acquisition). In this vein, time is incorporated as a general background condition (i.e., proxy) against which the number of acquisitions can be counted. Others have directly incorporated time (n = 18) into their theoretical constructs and empirical measures (such as speed and pace). For example, in measuring the pace of acquisitions, Hayward (2002) operationalized temporal distance (pace) by the mean number of days between prior acquisitions. Homburg and Bucerius (2006) measured speed of integration as the length of time needed to complete the integration. When time is directly incorporated in a construct and its measures, it becomes a potential source of competitive advantage that is subject to managerial control (Ancona, Goodman, Lawrence, & Tushman, 2001).

Temporal reference point. Temporal reference point refers to the time orientation of decision makers, that is, whether they anchor their decisions with a referent point in the past, present, or future (Mosakowski & Earley, 2000). A significant majority of articles adopt a "past and present" link (n = 116 out of 144). This is partially a reflection of the experience role where scholars prescribe that corporate managers who have conducted acquisition and alliance initiatives in the past tend to achieve better performance in their current acquisition and alliance activities. In studying the question of rhythm, scholars tend to explore how past patterns of acquisition activity affect the firm's current position (Laamanen & Keil, 2008). Within the strategy domain, it is widely acknowledged that one of the primary goals of strategy is to achieve sustainable competitive advantage. Similarly, for acquisition and alliance researchers and corporate managers, the main purpose of gaining experience in acquisition and alliance activity is to make better informed decisions in the future. However, it is somewhat surprising that only 24 articles (17%) incorporated a future orientation into their theory, constructs, or methods. Amburgey and Miner (1992), for example, developed the notion of repetitive momentum and argued that prior merger patterns reinforce future merger patterns. Shi and Prescott (2011) adopted a past–present–future orientation and studied how patterns of firms' acquisition and alliance histories affect firms' existing resource accumulations and market expectations of future performance.

Temporal study design. We identified three broad temporal study designs, that is, cross-sectional, longitudinal, and longitudinal change. We found that most studies fall within the cross-sectional (n = 81 out of 144) or longitudinal categories (n = 35 out of 144). Cross-sectional designs allow researchers to collect data from a specific period and are used in both regression-based and case-based studies. For instance, to understand key factors that lead to knowledge sharing, transfer, and new knowledge creation, Hardy et al. (2003) collected multiple collaborative cases in one organization within a 2-week period. A longitudinal study

design involves data collections across different periods. For example, in serial acquirer or alliance portfolio research, data are collected over several years or panels. A longitudinal design, therefore, is an approach that accommodates firm-by-year observations. We found 9 studies that adopted a longitudinal change design. These studies tracked the specific processes of alliance and acquisition activity at different points of time and focused on either the changes per se or the process of change over time. For example, Arino and Torre (1998) traced the change patterns of interactions between two multinational firms with the objective of understanding how their learning processes evolved over time.

Single versus multiple M&A and alliance initiatives. This criterion captures whether the studies are conducted based on a single activity or multiple or serial activities. Studies that focus on experience and sequence are examples of multiple strategic initiatives since they require repeated acquisitions or alliances to constitute a firm's experience or sequence of these activities (Shi & Prescott, 2011). Studies that explore temporal construct such as rhythm involve either single or multiple initiatives. For instance, rhythm can be defined based on a series of activities within a single alliance (Standifer & Bluedorn, 2006) or can be conceptualized as multiple acquisitions across a firm's history of acquisition initiatives (Laamanen & Keil, 2008). We found that a single alliance ($n = 55$) and multiple alliances ($n = 44$) are the two most researched areas. Many studies on learning focus on understanding how learning process unfolds within a single alliance. In contrast, the number of studies that employ either a single acquisition ($n = 13$) or multiple acquisitions ($n = 29$) are fewer. Given the fact that acquisition and alliance are two different yet complementary means of corporate strategy, there are surprisingly very few studies that consider both alliance and acquisition simultaneously ($n = 6$). This seems to be in contrast to business reality, where firms engage in acquisition and alliance initiatives simultaneously to address different resource or organizational needs.

Organizational outcomes. We identified 13 different forms of organizational outcomes. While alliance and acquisition researchers are interested in accounting or market-based performance outcomes at both the alliance/acquisition ($n = 5$) and firm ($n = 30$) levels of analysis, they are not the dominant class of outcomes across our set of studies. Learning-related outcomes associated with knowledge transfer ($n = 28$), learning processes (cooperative vs. competitive, integrative learning, imitation; $n = 14$), and organizational structure and decision processes ($n = 29$) are the most prevalent. Subjective measures of success were identified in 13 studies.

Whether an alliance is successful (in terms other than accounting or market-based performance) is an outcome we found in 16 articles studying the stability, reorganization, longevity, and the eventual takeover of an alliance. Predictions related to the probability of an alliance/acquisition event were found in 24 studies. We found 2 articles that examined outcomes at the project level (i.e., new product launch, project IPO). Finally, outcomes related to alliance and partner characteristics (e.g., contractual form, location of alliance, industry of alliance) were the dependent variable in 7 articles.

Observations and Recommendations for Future Research

The prototypical temporal M&A and alliance study employs a *cross-sectional design* to examine how *past* alliance/acquisition *learning and experience* serve as *proxies* for organizational processes (e.g., knowledge, trust) that affect *present* learning, organizational structure, the probability of new alliances/acquisitions, or market-based *outcome*s while assuming *objective clock time* and that the timing of an alliance/acquisition *event is unpredictable*.[4] Learning role studies focus more on learning and organizational structure outcomes, while experience role studies focus on market-based and the probability of new alliances/acquisitions. We use the prototypical study description as a point of departure for our discussion of the state of knowledge and future research directions.

Active Time Management of M&A and Alliance Initiatives

Whether, how, and for which acquisition and alliance activities managers actively manage time is open to debate. On one hand there is a generally accepted belief that the initiation of most acquisitions and alliances is opportunity driven or at least involves a significant reactive or unpredictable component. On the other hand, once an acquisition or alliance is consummated, managers proactively engage in the time management of implementation. This is an interesting observation since most acquisition and alliance temporal studies are not process based or implementation oriented or examine change longitudinally. While there is no inherent contradiction between the temporal management of initiatives and the opportunity-driven approach, we know little about whether firms temporally manage acquisition and alliance programs, how managers link time and resource allocation decisions, and the design of temporal-based coordinating mechanisms.

Given that most large firms have corporate development or alliance management programs unless they operate in an opportunity-driven manner, it would seem that temporal issues would be a topic of frequent discussion and analysis. For example, how do firms internally *synchronize* and coordinate multiple alliances and acquisitions given resource constraints, bounded rationality, temporal styles, and potentially conflicting objectives (Butler, 1995; Standifer & Bluedorn, 2006)? Do firms develop an *entrainment* management capability where they can quickly identify and appropriately respond to the acquisition and alliance time orientation of competitors, governments, and other relevant stakeholders (Ofori-Dankwa & Julian, 2001)? More fundamentally, studies of the role of time in M&A and alliance decision-making processes would shed considerable light on how managers perceive and apply time as a source of competitive advantage.

Since M&A and alliances initiatives are central to the growth and change of firms, they are central to the top management team and leadership literatures (e.g., Carpenter, Geletkanycz, & Sanders, 2004), which should be more fully integrated with time-based research. For example, since significant components of acquisition/alliance–performance relationships are causally ambiguous, managers are likely to develop biases, faulty assumptions, and heuristics regarding the temporal management of M&As and alliances. Yet we know little about this topic. A few other promising research directions include the following: What are the most

effective ways to educate managers regarding a time-based management approach to acquisition and alliance initiatives? Are there particular leadership characteristics and attributes that are associated with a temporal perspective? How does CEO turnover affect a firm's acquisition and alliance temporal strategy?

Direct Conceptualization and Measurement of Time Constructs

Data supporting the crafting of our prototypical study show that an overwhelming majority of our articles (75%) used proxies rather than conceptualizing time and its operationalizations directly. It's time for time to take center stage. In other words, acquisition and alliance researchers have not anchored their research questions directly in the time-based literature. Rather, time has an epiphenomenal conceptualization, and as such time is often equated with the counting of events (number of alliances), and time constructs (such as experience) become proxies for other constructs (such as knowledge or trust). From a construct validity perspective, an epiphenomenal approach requires careful theorizing to ensure that there is a close link between the intended meaning of constructs and their operationalization. It is not clear that the leap of logic used in many studies is adequately established. For example, having multiple experiences in making acquisitions does not necessarily mean that substantive learning has occurred.

In this regard, we examined the references of our 144 articles as an indicator of the degree that the theoretical time-based literature is embedded in our sample. It is interesting and informative that only 2 articles cited at least one of the following management-oriented time-based theoretical articles (Ancona, Goodman, Lawrence, & Tushman, 2001; Ancona, Okhuysen, et al., 2001; Bluedorn & Dernhardt, 1988, 2002; Butler, 1995; Carlstein, 1982; George & Jones, 2000; McGrath & Rotchford, 1983; Mosakowski & Earley, 2000; Ofori-Dankwa & Julian, 2001). We strongly recommend that the theoretical time-based literature be drawn on when conceptualizing M&A and alliance temporal empirical studies. There is a significant opportunity for temporal theorizing in the M&A and alliance streams of research.

Having identified a significant gap in the literature, there are several promising research directions for the direct conceptualization and measurement of time constructs. Directly studying time constructs such as speed, pace, rhythm, and sequence is important because they are subject to management control, and how they are managed can inform us as to their impact on organizational outcomes.

Research on cross-temporal roles. Whenever a researcher designs and collects data related to a particular temporal role, it creates an opportunity to explore research questions related to other temporal roles. For example, a study that measures the frequency of alliances is a direct measure of activity. Directly asking how frequency (activity) is related to performance might be an initial research question. However, depending on how the frequency data are collected, researchers could also examine questions related to speed of activity, temporal distance between activity, and pace of activity among others.

There is ample opportunity to conduct cross-role research. Taking the learning role as an example, many existing learning studies focus on how learning occurs within a specific

alliance or how learning processes unfold over the history of an alliance. At most, a few studies examine how firms' alliance experience affects learning mechanisms, that is, the way firms learn (Finkelstein & Haleblian, 2002; Heimeriks et al., 2007) or learning effectiveness in the form of knowledge acquisition (Inkpen, 2000). In this respect, we use Heimeriks et al.'s (2007) study as an example of how one can incorporate multiple temporal role categories. Heimeriks et al. found that firms with extensive alliance experience make relatively more use of institutionalized learning mechanisms. However, firms' prior alliance experience is developed or accumulated in very different ways. Firm A might have initiated two alliances every year over the past 10 years, while Firm B conducted most of its alliances very recently. In other words, these two firms developed a portfolio of alliances based on different rhythms. In the case of Firm A, knowledge regarding alliance partners and how to manage alliances accumulated incrementally, and the institutionalization process would likely have taken time to refine, modify, and adjust, while in the case of Firm B, knowledge accumulated in a short period and the institutionalization process would likely have focused on major change rather than incremental refinements. Both institutionalization processes are well suited to distinctive external environment, Firm A for stable environments and Firm B for high-velocity environments. Only by looking at the interactions among the experience, learning, and rhythm roles can such a distinction be studied.

Direct measurement of temporal constructs. Our review revealed that the experience and learning roles are the most popular temporal topics. Yet most of the studies have not directly measured either construct (e.g., learning is equated with trust or reciprocal commitment). Part of the reason why proxies have been used is the use of archival data sources such as the SDC database. However, there is more to the story since one can use databases and measure constructs directly. For example, experience is a direct measure of activity or duration of involvement. When researchers equate activity proxies to learning or knowledge, the relationship is tenuous since managers and firms can have experience and not learn or learn without having experience.

Taking a lead from the learning role, researchers in the experience role might ask questions related to the antecedents and outcomes of alliance/acquisition activity or duration. The experience role would also benefit from increased use of surveys and case studies to better understand underlying experience processes and outcomes. For example, while we know that experience affects the pace of future acquisitions, we do not know why or how this finding exists. A common view is that experience enhances a firm's acquisition routines, which reduces the time needed to initiate a new acquisition. If experience increases the acquisition pace, what types of routines are relevant to this enhancement? Existing literature tends to focus on the exploitive side of routines that help to identify and evaluate targets with little emphasis on the explorative side of routines to proactively search for novel types of acquisition targets.

Research on second-order temporal constructs. Since little research has focused on longitudinal change, we encourage researchers to direct attention to second-order temporal constructs, their antecedents, and their impact on firm performance. Second-order temporal constructs involve the complex nature of change (Bartunek & Moch, 1987; Scherpereel, 2006). For instance, first-order temporal constructs include experience, frequency, speed,

and pace, to name a few. The notions of variability and rhythm belong to the category of second-order temporal constructs. A firm's rhythm or variability of alliance and acquisition develops over time. It is indeed emergent, dynamic, incremental, and embedded within a system (Quinn, 1980). For example, it is relatively easy to formulate a fast-paced acquisition strategy (given resource constraints) by simply increasing the number of acquisitions. However, developing an acquisition strategy that entails a semipredictable rhythmic pattern (Shi & Prescott, 2011) is significantly more complex and socially ambiguous. A rhythm approach requires firms to accumulate knowledge regarding when to accelerate and when to slow down their acquisition initiatives. Firms also need to embrace the historical conditions that constrain or facilitate the emergence of a particular acquisition rhythm pattern. In other words, corporate managers who aim to develop an acquisition rhythm pattern not only need to know that time matters but also how and why time matters. While the development of such second-order temporal patterns is difficult and requires consistent managerial attention and resource commitment, once formed it becomes difficult for competitors to imitate.

The same notion might also apply to a single alliance. Standifer and Bluedorn (2006) argued that alliance partners might develop a temporal rhythm within an alliance so that activities for each partner can be coordinated. In this sense, rhythm becomes a temporal coordination mechanism for the involved parties (Ancona & Chong, 1996) as well as other relevant parties (such as logistical teams). Developing such a rhythm requires alliance partners to engage in ongoing interaction so they have the ability to establish the "right" pace at the "right" time, which subsequently helps "proactive planning efforts and timely implementation of key activities" (Standifer & Bluedorn, 2006: 916). Given that the process of achieving such a rhythm is usually conditional on collaborative history, interaction pattern, and the intertwining of subsystems, formulating such a rhythm can become a critical mechanism for sustaining a competitive edge over competitors.

Leverage a subjective time assumption. As with previous reviews of the time literature, we see value in adopting a subjective time assumption to complement the current objective view. Within our set of 144 articles, only 2 employed a subjective assumption. Das (1987), among others, emphasizes that individuals differ in their experience of time. His empirical study revealed that decision makers who have a current time orientation prefer a shorter planning horizon than those who have a future time orientation. In other words, time is essentially in the eye of beholder and varies across individuals and contexts (Durkheim, 1921/1965; Eliade, 1963; Hall, 1983). In addition to a future versus short-term time orientation, individuals also differ with respect to how they interpret experience, pace (Mohammed & Nadkarni, 2011), rhythm, and temporal fit (Shipp & Jansen, 2011). For example, if two corporate managers each conducted 10 acquisitions over the past 5 years, the manager who has a fast-paced mind-set might perceive the 5 years of acquisition experience very differently from the one who has a slow-paced mind-set. Understanding and exploring such a difference based on a subjective view of time can shed new light on decision making for serial acquirers or the developers of alliance portfolios. An interesting extension might be to embrace the role of economy, geography, culture, and institutions in the temporal acquisition and alliance literature and explore how decision makers' time orientations are shaped by their origins of birth, the cultural norms of countries or regions in which they gained managerial experience, and the institution where their firms were founded.

Framing M&A and Alliance Temporal Research

Frames of reference for a field provide an organizing structure. We identify three frames that have the potential to significantly affect temporal research in the M&A and alliance stream of research. While we do not claim these are the only frames, they are the result of our assessment of the literature.

We recommend scholars frame acquisitions and alliances as two interrelated rather than separate strategic initiatives.[5] This combined approach has both theoretical and managerial implications for temporal research. For example, theoretically, different corporate initiatives have their own distinctive pace, cycles, and rhythm (Ancona & Chong, 1996). An important temporal question is whether firms should synchronize acquisitions and alliances along the temporal line given that managerial capacity is subject to time compression diseconomies. In this respect, what are the consequences of a (mis)synchronization of acquisition and alliance activity in terms of performance, capability building, and other outcomes? There are sound reasons to explore these questions. For instance, scholars agree that acquisitions and alliances have a high degree of interdependence. Knowledge from each type of activity can cross-fertilize, spill over to, or reinforce the value of the other (Zollo et al., 2002). L. Wang and Zajac (2007) found that knowledge from prior alliances/acquisitions helps firms in future alliances/acquisitions. Similarly, Zollo and Reuer (2010) argued that alliance capabilities and processes such as due diligence, partner selection, negotiation, and evaluation are quite similar to those of acquisitions. When synchronizing acquisitions and alliances, managers can apply their most recently acquired knowledge of one activity to inform the other.

Our second framing recommendation is that researchers assess and explicitly communicate their temporal research questions and designs with respect to the temporal roles and evaluation criteria summarized in Table 3. The goal of recommending framing studies in terms of the temporal criteria is to achieve congruency between theory and empirics as well as establish boundary conditions and system states (Dubin, 1978). We use Al-Laham et al.'s (2008) study as an example. Their primary research question was to understand how alliance experience affects alliance capability, which further determines the frequency of subsequent alliance formation. In the article, an integrated past–present–future temporal reference point is implied. This is consistent with management scholars' assertion (Butler, 1995: 946) that "time, as we experience it in the present, can only have meaning in relation to our understanding of the past and our vision of the future." This type of logic is well reflected in their study's design where they trace 847 biotechnology alliances from 1973 to 1999 and their outcomes. Instead of using a frequency measure, they used a discrete probability measure, which, as they state (Al-Laham et al., 2008: 351), "summarizes the information on the intervals between successive events . . . by *looking ahead in time* and given the *history of the events* the firm experienced so far."

The above type of logic needs to be consistently followed by scholars when they engage in temporal research. For instance, if a researcher's goal is to understand how the life cycle of firms' acquisition and alliance activity affects their resource endowment and sustainable competitive advantage, a cyclic time assumption needs to be clearly articulated as well as a past–present–future temporal reference point. By doing so, relevant theories and methods can be identified to accommodate temporal subcriteria choices. For example, the

resource-based view of strategy emphasizes the past and future while paying less attention to the present (Mosakowski & Earley, 2000). Therefore, a historical sociology perspective (Abbott, 1998) that stresses how a current position is shaped, constrained, and facilitated by sequential activities over a historical period complements the resource-based view in understanding and exploring how the life course of strategic initiatives influences future initiatives and competitive advantage. This requires that relevant methodologies be debated and compared. For example, the resource-based view might focus on longitudinal change constructs and methods and outcome variables that are future oriented (such as market expectations). Similarly, historical sociology might pay more attention to the sequence of alliance and acquisition initiatives of firms over their life course. Sequence methodologies such as optimal matching techniques (Abbott, 1998) are one approach for generating patterns of acquisition and alliance trajectories and how they affect firms' current and future strategic positions.

Our third recommended frame is a contextual time frame. When time is considered as a contextual background, it is essentially 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). Thus, how an era affects the relationships among temporal constructs and M&A and alliances initiatives warrants study. For example, the role of learning in alliances was relatively ignored until the late 1980s (Hamel, 1991) and has become one of the most researched areas, as illustrated in Table 3. How M&A and alliance initiatives are affected in an era of the rise of BRICS (Brazil, Russia, India, China, South Africa) economies, which have different time orientations than those in North America and Europe, on which most research has been based, is an opportunity-rich research area. Regardless of the research question, applying historical methods as part of the analysis and interpretation of M&A and alliances research would enrich our understanding of the role of time.

Our current era of M&A and alliance research has focused on large public firms. Yet most M&As and alliances are conducted in small private firms. One has to wonder how our knowledge of the temporal aspects of M&A and alliance research would be supplemented or different if researchers had ready access to small private deals. While this may be a difficult research domain in which to collect data, it is likely to have a significant payoff. Our reference to the BRICS countries above is also relevant to this point in a slightly different way since many of the firms in these countries have strong ties or are owned by the government, meaning data are often unavailable or questionable. If the BRICS firms continue their global expansion, they will most likely be involved in increasing numbers of M&A and alliances. How will they temporally manage these initiatives?

Conclusion

Our overall conclusion is that it is an exciting time to be researching temporal questions in the M&A and alliance arena since there is a rich research base and many important and interesting research questions need to be addressed. Our inventory of the theories and

mechanisms used in M&A and alliance temporal research is a resource that future researchers can leverage to explicitly incorporate temporal roles and evaluation criteria as part of their research design choices. Finally, we think that our approach can inform and apply to other streams of research in the fields of strategic management, organization theory, and organizational behavior.

Notes

1. A growing body of research highlights issues such as hubris, empire building (Morck, Shleifer, & Vishny, 1990), and whacky incentives (Sanders & Hambrick, 2007) as alternative explanations for engaging in mergers and acquisitions (M&As) and alliances. While there is considerable merit to these arguments, we assume that M&As and alliances are primarily initiated for the purpose of building, maintaining, and sustaining competitive advantage and secondarily driven by self-interested behavior on the part of managers. The two positions are not mutually exclusive. We thank a thoughtful reviewer for identifying these two positions.

2. Pace and rate are often used interchangeably in the literature, For consistency, we use the term *pace*, except in those cases where the author(s) used the term *rate* in their original article.

3. We devoted considerable time to identifying and discussing the criteria and their definitions. We each coded the same five randomly selected articles and then had extensive discussions to resolve any questions. Across the set of 144 articles, there were five occasions where there was a coding question that resulted in a disagreement among the authors. Discussions among the three authors resolved the disagreements.

4. We developed the prototypical study using two approaches. First, we used the frequency counts from Table 3 to identify commonalities/patterns across the 144 studies. Second, we conducted various cluster analyses using the evaluation criteria for each study. The cluster analysis produced two clusters formed around the learning and experience roles. Our purpose is to summarize in one sentence the preponderance of the temporal-based literature rather than claim definitive empirical results.

5. There is a rich research stream in the international business area that focuses on the role of acquisitions and alliances in international expansion, international entry, and entry modes. In many of these studies, acquisitions and alliances are comingled in their samples. Therefore, they did not fit our criterion of being able to separately identify results relating to acquisitions from those relating to alliances. We do think that the international expansion literature warrants a review. We thank an anonymous reviewer for bringing this point to our attention.

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