



# **Building understanding in strategy research: The importance of employing consistent terminology and convergent measures**

Strategic Organization

10(2) 187–200

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DOI: 10.1177/1476127012445239

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## **Introduction**

While the strategy discipline has made significant strides in measurement practices since its inception, questions persist regarding the use of different terminology and nonconvergent measures to represent a single construct within our field (see, for example, Cording et al., 2010; Hitt et al., 2004; McKinley, 2007; Suddaby, 2010). In this essay, we emphasize the importance of rectifying these practices to facilitate the cross-disciplinary conversation and systematic building of understanding that has long been a goal of strategy research (Cannella and Paetzold, 1994; Meyer, 1991; Nag et al., 2007). We focus on the utilization of consistent terminology and convergent measurement for three reasons. First, employing different terminology and nonconvergent measurement inhibits the accumulation of knowledge and understanding regarding a phenomenon (McClelland et al., 2010; Oxley et al., 2010; Singh et al., 2003; Suddaby, 2010). What should be a building process to better understanding of a phenomenon can become a hodge-podge of terms and measures that hinders this process. Second, as we detail in our essay, despite the well-recognized perils to knowledge accumulation associated with these practices, they occur in many domains of strategy research. Third, if the field is to continue to build understanding in a cross-disciplinary and systematic fashion, these issues are particularly salient: it is essential that we refer to constructs in a way that fosters conversations across disciplinary and domain boundaries and develop measures that converge on the constructs that we are discussing so that the understanding developed is valid.

Like McKinley (2007: 123), we draw attention to how terminology and measurement issues create ‘barriers to cross-study accumulation of knowledge.’ Our essay diverges in two important ways, however. First, McKinley focuses on ‘de-objectification’ – when scholars ‘attach a variety of different meanings to the same construct’ (2007: 124) – or having different meanings for one term. We concentrate on the inverse – when scholars attach the same meanings but refer to the construct differently – or having one meaning but different terms. As we delineate in greater detail below, this distinction is notable. While de-objectification prevents an unambiguous construct definition, a necessary condition to accumulating knowledge across studies (for a recent discussion, see Oxley et al., 2010), it may not be sufficient if studies define a construct unambiguously but refer to it differently (Suddaby, 2010). Second, and more importantly, although we agree with McKinley in decrying nonconvergence, he calls for standard instrumentation whereas we reject this notion. Rather, we note the utility and necessity of having multiple measures of the same construct and instead advocate employing steps to assess convergence.

While we expect little debate regarding the necessity of employing consistent terminology and convergent measurement, a topical reader within strategy would quickly realize that many domains fall short of this imperative. As such, we first illustrate problems associated with failing to adopt these practices. To do so, we draw upon the overconfidence/hubris literature, which is a growing area of study within strategy and its related disciplines and which faces these specific challenges. Further, our own experiences with different terminology and nonconvergence in this domain have illuminated the problems associated with these practices for us. We believe that drawing attention to these issues can aid others in developing knowledge of their phenomena of interest as it did with us. To assist in this endeavor, after discussing these problems, we offer suggestions that may prevent their continued occurrence.<sup>1</sup>

## Employing consistent terminology

As Pfeffer (1993: 611) notes, ‘fields can scarcely expect to produce knowledge’ without a ‘minimal level of consensus’ regarding the construct being studied. Indeed, scholars focused on the development of both theory (Dubin, 1978; Sutton and Staw, 1995) and measurement (Cook and Campbell, 1979; Schwab, 1980) as well as those spotlighting the interplay of the two (Cording et al., 2010; Oxley et al., 2010) emphasize the importance of establishing construct clarity as foundational to knowledge accumulation. To establish clarity, the construct must be defined unambiguously: we must be clear and precise about what is meant when using a term in reference to a construct (for recent discussions, see McKinley, 2007; Oxley et al., 2010). Further, the construct must be referred to in a consistent fashion (Suddaby, 2010). While an unambiguous definition is essential to construct clarity and to build understanding, the latter point is also important. To illustrate this distinction, consider McKinley’s example of a patient seeking multiple blood pressure readings; even if blood pressure is unambiguously defined and measured in the same way in each reading, patients may not be able to build knowledge if one doctor discusses levels of the unfamiliar ‘arterial hypertension’ rather than the more familiar ‘blood pressure.’

Drawing on an academic example, scholars employ two terms when referring to individuals’ tendency to overestimate their ability: ‘overconfidence’ (Fischhoff et al., 1977; Meehl, 1957; Oskamp, 1965) and ‘hubris’ (Hayward and Hambrick, 1997; Roll, 1986). As definitions in Table 1 demonstrate, ‘overconfidence’ and ‘hubris’ can both be defined unambiguously as the tendency of ‘individuals to overestimate their abilities.’ Despite this unambiguous definition, the fact that scholars utilize different terminology to refer to this tendency presents challenges to building understanding about it. As Suddaby (2010: 352) notes, using different terms in reference to a

**Table 1.** Definitions of 'overconfidence' and 'hubris'.<sup>a</sup>

Study	Definition
<i>Overconfidence</i>	
Oskamp (1965: 262)	Positive difference between expectation and real outcome
Rovenpor (1993: 34)	'Overestimate their abilities to overcome obstacles and achieve desired outcomes'
DeBondt and Thaler (1995: 389)	'Overestimate their abilities'
Camerer and Lovallo (1999: 306)	Overestimate 'their own relative abilities'
Manove and Padilla (1999: 325)	Unrealistic 'about their ability, power, and the outcome of their own actions'
Klayman et al. (1999: 216)	'Confidence people have in their judgments exceeds their accuracy'
Gervais and Odean (2001: 1)	'Overweight the possibility that their success was due to superior ability'
Simon and Houghton (2003: 139)	'Certainty that his or her predictions are correct exceeds the accuracy of those predictions'
Malmendier and Tate (2005: 2662)	'Overestimation of one's own abilities'
Cassar and Gibson (2007: 286)	'Overestimate their own ability'
Brown and Sarma (2007: 361)	'Overestimation of one's own abilities and of outcomes relating to one's own personal situation'
Malmendier and Tate (2008: 22)	'Overestimate their ability'
Grinblatt and Keloharju (2009: 552)	'The tendency to place an irrationally excessive degree of confidence in one's abilities'
<i>Hubris</i>	
Dickie (1984: 102)	'Overweening confidence'
Roll (1986: 200)	'Overbearing presumption' by an individual 'that their valuations are correct'
Hayward and Hambrick (1997: 103)	'Exaggerated self-confidence'
Kroll et al. (2000: 117)	'Exaggerated pride, self-confidence or arrogance'
Hiller and Hambrick (2005: 306)	'Exaggerated self-confidence'
Shefrin (2002: 227)	'Overconfidence about ability'
Baker et al. (2007: 173)	'Overconfident in their own valuation'
Billett and Qian (2008: 1037)	'Overly optimistic opinion of their ability to create value'
Judge et al. (2009: 867)	'Inflated sense of self-confidence'
Aktas et al. (2009: 555)	'Characterized as over-optimism or as overconfidence'
Haleblian et al. (2009: 476)	'Exaggerated self-confidence'

<sup>a</sup>For the sake of clarity, articles that did not clearly define the constructs or in which the constructs were defined in terms of measurement are omitted, as are working papers and additional papers by already listed authors that use similar definitions.

construct prevents clarity, and rather 'produces confusion – confounding effects – that impede the ability of members of a research community to communicate with each other or to accumulate knowledge.' For instance, Haleblan et al. (2009: 476) observe that two 'closely related' articles published a decade apart both find that overconfident/hubristic CEOs 'overestimate their ability to generate returns and as a result overpay for target companies.' The later article, however, fails to mention similarity to the earlier work regarding theory or findings. While this omission is

regrettable, we must consider the fact that the two papers utilize different terminology – the earlier paper labels the construct hubris while the later uses overconfidence.<sup>2</sup> Since it is essential that scholars are able to both build upon earlier works and communicate with each other to systematically build knowledge, as the aforementioned example evidences, they must employ consistent terms in reference to the same construct for this building to occur.

## Employing convergent measures

Measurement in strategy is no easy endeavor. Not only is it difficult to measure complex and unobservable phenomena like those that comprise most strategy constructs (Cording et al., 2010; Godfrey and Hill, 1995; Venkatraman and Grant, 1986), but differences in research questions and designs may necessitate different measures as scholars find ways to assess constructs and isolate relationships. Consequently, many constructs are assessed with multiple measures developed using multiple methods. Having multiple measures of a construct can be beneficial in adding robustness to analyses and overcoming limitations inherent to any one measure (Campbell and Fiske, 1959). However, it can be problematic if the measures are nonconvergent because scholars cannot reliably interpret results across the different measures if the measures do not agree on what they assess. This can lead to more confusion rather than the desired building of knowledge and understanding (Campbell and Fiske, 1959; Churchill, 1979; Edmondson and McManus, 2007; McKinley, 2007).

To illustrate this point, consider the closely related articles referenced earlier. A benefit of the overlap in these studies is that they utilize multiple measures of CEO overconfidence/hubris and produce consistent findings regarding the effect on acquisition premium payments, potentially enhancing analytical robustness, overcoming weaknesses of any single measure, and increasing our confidence that this relationship does indeed exist. Multiple measures should allow us to triangulate measurement and build knowledge in this domain; however, scholars find that seven of eight extant measures of overconfidence/hubris (see Table 2)<sup>3</sup> do not adequately converge (Hill and Kern, 2010).<sup>4</sup> So while an extensive literature has been developing regarding the effects of overconfident/hubristic executives, the fact that the measures are nonconvergent inhibits comparing results across studies (Churchill, 1979; Nunnally, 1978) and further, suggests that some studies may not be measuring the same construct at all. The end result is that our ability to build valid understanding is compromised.

## A wider problem: Surveying the field

Although we illuminate these concerns in one literature stream, many domains of strategy have developed without consistent terminology and convergent measurement. Our guess is that each of us can think of other research streams that suffer from one or both of these concerns, and indeed, querying colleagues produced an intriguing list of literatures, highlighted in Table 3, that underscores the prevalence of these problems.

One might ask why these practices prevail. Some use of different terminology and measurement is natural. First, as domains build, we expect different terminology before arriving at consensus (Hirsch and Levin, 1999; Ronda-Pupo and Guerras-Martin, 2012). Similarly, different methods are necessary to address different questions and overcome data limitations; therefore, diverse measures emerge. Second, scholars have both disciplinary and domain ‘blindness’ that restrict focus and contribute to these differences. For instance, disciplinary blindness between strategy and finance likely contributed to the closely related articles addressing the same relationship using different terms while domain blindness between acquisitions and psychology of judgment scholars help

**Table 2.** Extant measures of overconfidence/hubris.

Measure	Method used to create measure	Example(s) of measure use
Executive language use	Content analysis of the words used in company documents	Rovenpor (1993); Liu et al. (2009)
Media comments	Content analysis of comments made by print media in reference to the individual	Hayward and Hambrick (1997); Brown and Sarma (2007); Malmendier and Tate (2008); Liu et al. (2009); Hribar and Yang (2011)
Recent organizational performance	Organizational performance in prior time periods	Hayward and Hambrick (1997)
Relative compensation	Compensation of focal individual relative to other individuals in the organization	Hayward and Hambrick (1997)
Organizational investment	Comparison of firm investments to industry average	Campbell et al. (2009)
Stock option exercise	Timeliness of stock option exercise	Malmendier and Tate (2005, 2008); Campbell et al. (2009); Liu et al. (2009)
Stock purchases	Individuals' purchase of stock in their company	Malmendier and Tate (2005); Campbell et al. (2009)
Direct inquiry	Individuals' responses to questions	Busenitz and Barney (1997); Li and Tang (2010); Simon and Houghton (2003).

explain the proliferation of different terms. In both instances, scholars focused on work in their discipline/domain, not others. Such blinders also contribute to methodological training and traditions that produce diverse measures.

Other uses of different terminology and measures are at least partially premeditated; scholars select terms and measures to position their papers in a certain way to enhance publication potential, such as fitting a certain journal, drawing certain reviewers, differentiating from existing work, and appearing novel. Indeed, colleagues surveyed cited the discipline's publication norms as drivers of such decisions, including: (a) fetishes for novelty and stylized facts and similar perceptions regarding journal acceptance; (b) promotion policies that necessitate, and reward, such publications; and (c) increasing competition for, and stagnant growth in, publication space (for more insight in this area, see Certo et al., 2010; Hambrick, 2004, 2007; Helfat, 2007). That is, our own customs interfere with our goal of building valid knowledge, and if we are to continue to build our understanding of strategy constructs it is essential that we remedy these problems in future research. To this end, we offer suggestions that can assist in doing so. Some are more easily implemented and we understand that our recommendations are aspirational and that implementation will take time. By drawing attention to concerns associated with employing different terminology and nonconvergent measures for the same construct and proscribing remedies to these practices, we add to the ongoing conversation among strategy scholars aimed at making our field more knowledge enhancing.

## Moving forward

We first highlight remedies that are implementable by individual scholars and widely called for yet remain sparsely employed (Hubbard et al., 1998; McClelland et al., 2010; Mezas and Regnier,

**Table 3.** Strategy research domains in which scholars have highlighted failure to employ consistent terminology and convergent measures.

Domain	Concern <sup>a</sup>	Example(s) highlighting concern
Achievement/intelligence	T; M	Lubinski (2004)
Aspirations	M	Shinkle (2012)
Board accountability	T; M	Huse (2005)
Board composition	M	Daily et al. (1999); Dalton and Dalton (2011)
Board vigilance	T; M	Finkelstein and Hambrick (1996); Finkelstein et al. (2009)
Commitment to the status quo	M	McClelland et al. (2010)
Competitive advantage	T; M	Powell (2001); Newbert (2007)
Corporate social initiatives	T; M	Margolis and Walsh (2003)
Diversification	M	Lubatkin et al. (1993); Robins and Wiersema (2003)
Divestiture	T; M	Brauer (2006); Lee and Madhavan (2010)
Dynamic capabilities	T	Eisenhardt and Martin (2000); Helfat and Peteraf (2009); Helfat and Winter (2011)
Environmental conditions	T; M	Boyd et al. (1993); Castrogiovanni (1991); Sharfman and Dean (1991)
Family business	T	Sharma et al. (1996)
Firm performance	M	Venkatraman and Ramanujam (1986, 1987); Richard et al. (2009)
Human capital	M	Newbert (2007); Pietsch (2007)
Multimarket contact	T; M	Gimeno and Jeong (2001)
Pay disparity/dispersion		Bloom (1999); Shaw et al. (2002); Siegel and Hambrick (2005)
Organizational effectiveness	T; M	Hirsch and Levin (1999)
Organizational routines	T; M	Feldman and Pentland (2003)
Resources	T; M	Armstrong and Shimizu (2007); Priem and Butler (2001)
Slack	T; M	Tan and Peng (2003)
Social capital	T; M	Adler and Kwon (2002); Payne et al. (2011)
Stakeholders	T	Mitchell et al. (1997)
Strategic change	T; M	Carpenter (2000); Rajagopalan and Spreitzer (1997)
Strategic leadership	T; M	Miller and Sardais (2011)
Strategy	T; M	Nag et al. (2007); Ronda-Pupo and Guerras-Martin (2012)
Top management team/group	T; M	Hambrick (1995); Siegel and Hambrick (2005)
Trust	M	Bradach and Eccles (1989); Gulati (1995)

<sup>a</sup>T = terminology; M = measurement. Research domains included in this table were generated from responses to a survey of management scholars.

2007; Pitcher et al., 2000; Singh et al., 2003; Tsang and Kwan, 1999). First, 'a critical component of the literature review of any theoretical manuscript' that is imperative to building understanding is to highlight the historical development of a construct and those similar or related to it (Suddaby,

2010: 350), and scholars could extend their review across disciplinary and domain boundaries to be more comprehensive (Short, 2009). Second, scholars can use methods that incorporate multiple measures of a construct to enhance analytical robustness and cross-validate findings. This includes using factor analyses and structural equation modeling (see Shook et al., 2004 for uses in strategy)<sup>5</sup> and the multitrait-multimethod approach (Campbell and Fiske, 1959). Unlike standardized instrumentation, these methods remain flexible to diverse research questions/designs and are beneficial because they allow scholars to employ ingenuity and creativity while gaining invaluable insights for future research (see McKinley, 2007, for a thorough cost-benefit analysis of standard instrumentation). This can also include more in-depth assessments of convergence of different measures used to assess a construct (for examples, see Hinkin, 1995, 1998). Such practices build understanding by informing us whether measures employed to assess a construct agree, how they are related, and if conclusions can be drawn across the measures so that we know how to move forward. Third, scholars can replicate, and reinterpret findings in instances where measures may not converge, to both confirm that we really know what we think we know and to continue building our understanding.

While these remedies require scholars to take individual responsibility for ensuring consistent terminology and convergent measurement, they may miss the larger point, highlighted in our colleague survey, that these problems are embedded in our field's norms. As such, leaving them up to the sole discretion of individual scholars may be fruitless. Rather, changing our norms is necessary. To some degree, we do what we learn to do: we are trained and incentivized to publish and we learn what editors/reviewers want (or at least, what they accept) based upon what is typically published. In turn, we give editors/reviewers what they want and train doctoral students to do likewise. These norms lead us to do what we do best – we generate 'new' insights well – but hinder building understanding necessary for scientific advancement. To change these norms, we also need to change what we learn to do.

Such changes start with PhD programs. Perhaps at no other time are we more impressionable as scholars than as doctoral students. Doctoral educators can both ensure proficiency in, and reinforce the necessity of, the practices we recommend here. This must be coupled with editorial policy changes so that these practices are reinforced by what we see in journals and, similarly, what we produce as we advance in our careers. As such, we need to alter publishing norms regarding the types of papers accepted – we need to reduce disciplinary and domain blinders and encourage scholars to cross boundaries as well as find a way for research that helps us accumulate knowledge more systematically to reach a wider audience. These remedies require enlarged and/or reallocated journal space that allows for the inclusion of such work. Specifically, additional space must be granted to examining convergence, robustness, and cross-validation of measures.

Since it is natural that divergent terms and measures develop and that scholars may not be privy to them despite their best efforts, enhanced indexing that both links to similar terms and is continuously updated, perhaps by allowing scholars to play a role by linking their research to similar studies on an interactive website, is also needed. The 'Measure Chest' developed by the Research Methods Division of the Academy of Management serves as an example and we envision a similar interactive index that cross-references terms, measures, disciplines, and domains. This will require the cooperation of professional organizations and journals as well as those who maintain indexes. Beyond aiding authors with their research, such a website could improve the dissemination and subsequent citation of scholarly work – providing incentive for scholars to contribute – and trickle down to improve extant search mechanisms such as Web of Knowledge and Google Scholar that rely on citations and keywords. To maximize impact, the website should work in concert with these search mechanisms.

These remedies doubtlessly require additional resources and considerations from departmental, business school, and university administrators. Administrators need to provide resources to help with implementing these initiatives and also adopt practices that reinforce them. If we are to change norms, adjustments to promotion and tenure (P&T) practices should bolster the new norms (for more on this, see Certo et al., 2010). Specifically, the increased rigors we request may require more time to conduct inquiries and in turn lead to lower publication rates that can affect P&T decisions. However, if building understanding is our true aspiration, it is worthwhile to make such adjustments and administrators should empower us to do so by altering P&T processes. After all, as scientists we are interested in knowledge and getting closer to the ‘truth,’ and these steps are necessary for true scientific inquiry.

## Conclusion

The purpose of the foregoing essay has been to underscore the importance of utilizing consistent terminology and convergent measures in reference to a single construct to build understanding. First, utilizing consistent terminology allows for conversations to take place about the construct and facilitates knowledge accumulation. Second, employing convergent measures helps ensure that knowledge regarding the constructs we are researching, and subsequently assessing, is valid. Employing these practices will help strategy researchers engage in cross-disciplinary conversations and more systematically generate knowledge. While part of the onus falls upon individuals to employ these practices, we also must make changes to how we do things to reinforce the importance of these practices for building understanding. After all, while we may never understand everything about our constructs of interest, we can conduct research in a manner that builds a foundation for clearer understanding. Using consistent terminology and convergent measures is a necessary step forward.

## Notes

1. We wish to note that we use this example and others throughout only as illustrations in support of our contentions – not as indictments towards the research stream or those who have conducted research within the stream. Accordingly, when we highlight specific problems we omit names of specific researchers whenever possible and instead only cite research that calls attention to the issues. We realize that strategy research is fraught with difficulty on multiple fronts and scholars are limited in what they can and cannot address in one manuscript. What is more, we wish to fully acknowledge that our own research is far from perfect and faces many limitations – including those that we discuss here.
2. Our intent is not to single out the later authors, but rather, to draw attention to how the use of different terms in reference to a single construct impedes knowledge generation. With this in mind, we wish to note that a topical search for ‘overconfidence’ using Thompson Reuters’ Web of Knowledge failed to identify the earlier article using ‘hubris,’ and further, that several thesauruses, both online and in print, did not list hubris/hubristic as a synonym of overconfidence. Further, cross-disciplinary boundaries may help account for this omission, as the earlier article was published in strategy while the later came from finance (we address this point in greater detail later in the essay). Given these facts, it is understandable that the later paper could be developed using a different term.
3. Some scholars utilize multiple measures as formative indicators of the overconfidence/hubris construct. However, in each case, the authors also utilize each measure as an individual regressor, perhaps in deference to concerns regarding formative measurement (for a recent review, see Edwards, 2011). Although a discussion of the concerns with formative measurement is outside the scope of our essay, since each measure is utilized by scholars as an individual regressor, we highlight them as such here.
4. Using data on all measures except direct inquiry while taking steps to eliminate confounds across measures, Hill and Kern (2010) assess convergence with correlational and factor analyses (Brahma, 2009;



- Lubatkin et al., 1993). They find (a) that only six of the 21 possible bivariate correlations were significant; and (b) a three-factor solution. Since uncorrelated measures do not assess the same construct (Churchill, 1979; Nunnally, 1978) and factor analyses should return a single-factor solution if the measures assess the same construct (Hinkin, 1998), they conclude that extant measures do not adequately converge.
5. Scholars should take caution to ensure that the indicators included in the factor analysis are correctly specified as either formative or reflective. Since some measures rely on formative logic while others rely on reflective logic, a researcher could unintentionally mis-specify a factor-analytic model and thus bias the results (Kline, 2005). Further, researchers interested in utilizing formative measurement should give careful consideration to the viability of this technique and whether it is appropriate for their use. Edwards (2011) offers insight in this regard.

## References

- Adler, P. S. and Kwon, S.-W. (2002) 'Social Capital: Prosepects for a New Concept', *Academy of Management Review* 27(1): 17–40.
- Aktas, N., de Bodt, E. and Roll, R. (2009) 'Learning, Hubris and Corporate Serial Acquisitions', *Journal of Corporate Finance* 15(5): 543–61.
- Armstrong, C. E. and Shimizu, K. (2007) 'A Review of Approaches to Empirical Research on the Resource-based View of the Firm', *Journal of Management* 33(6): 959–86.
- Baker, M., Ruback, R. and Wurgler, J. (2007) 'Behavioral Corporate Finance: A Survey', in B. E. Eckbo (ed.) *Handbook of Corporate Finance: Empirical Corporate Finance*, pp. 145–88. Amsterdam: Elsevier.
- Billett, M. T. and Qian, Y. (2008) 'Are Overconfident CEOs Born or Made? Evidence of Self-attribution Bias from Frequent Acquirers', *Management Science* 54(6): 1037–51.
- Bloom, M. (1999) 'The Performance Effects of Pay Dispersion on Individuals and Organizations', *Academy of Management Journal* 42(1): 25–40.
- Boyd, B., Dess, G. G. and Rasheed, A. M. A. (1993) 'Divergence between Archival and Perceptual Measures of the Environment: Causes and Consequences', *Academy of Management Review* 18(2): 204–26.
- Bradach, J. L. and Eccles, R. G. (1989) 'Markets versus Hierarchies: From Ideal Types to Plural Forms', *Annual Review of Sociology* 15: 97–118.
- Brahma, S. S. (2009) 'Assessment of Construct Validity in Management Research: A Structured Guideline', *Journal of Management Research* 9(2): 59–71.
- Brauer, M. (2006) 'What Have We Acquired and What Should We Acquire in Divestiture Research? A Review and Research Agenda', *Journal of Management* 32(6): 751–85.
- Brown, R. and Sarma, N. (2007) 'CEO Overconfidence, CEO Dominance and Corporate Acquisitions', *Journal of Economics and Business* 59(5): 358–79.
- Busenitz, L. W. and Barney, J. B. (1997) 'Differences between Entrepreneurs and Managers in Large Organizations: Biases and Heuristics in Strategic Decision-making', *Journal of Business Venturing* 12(1): 9–30.
- Camerer, C. and Lovallo, D. (1999) 'Overconfidence and Excess Entry: An Experimental Approach', *American Economic Review* 89(1): 306–18.
- Campbell, D. T. and Fiske, D. W. (1959) 'Convergent and Discriminant Validation by the Multitrait-Multimethod Matrix', *Psychological Bulletin* 56(2): 81–105.
- Campbell, T. C., Johnson, S. A., Rutherford, J. and Stanley, B. W. (2009) 'CEO Confidence and Forced Turnover', Working paper, Texas A&M University, College Station, TX.
- Cannella, A. A. and Paetzold, R. L. (1994) 'Pfeffer's Barriers to the Advance of Organizational Science: A Rejoinder', *Academy of Management Review* 19(2): 331–41.
- Carpenter, M. A. (2000) 'The Price of Change: The Role of CEO Compensation in Strategic Variation and Deviation from Industry Strategy Norms', *Journal of Management* 26(6): 1179–98.
- Cassar, G. and Gibson, B. (2007) 'Forecast Rationality in Small Firms', *Journal of Small Business Management* 45(3): 283–302.
- Castrogiovanni, G. J. (1991) 'Environmental Munificence: A Theoretical Assessment', *Academy of Management Review* 16(3): 542–65.

- Certo, S. T., Sirmon, D. G. and Brymer, R. A. (2010) 'Competition and Scholarly Productivity in Management: Investigating Changes in Scholarship from 1988 to 2008', *Academy of Management Learning and Education* 9(4): 591–606.
- Churchill, G. A. (1979) 'Paradigm for Developing Better Measures of Marketing Constructs', *Journal of Marketing Research* 16(1): 64–73.
- Cook, T. C. and Campbell, D. T. (1979) *Quasi-experimentation: Design and Analysis Issues for Field Settings*. Chicago: Rand McNally.
- Cording, M., Christman, P. and Weigelt, C. (2010) 'Measuring Theoretically Complex Constructs: The Case of Acquisition Performance', *Strategic Organization* 8(1): 11–41.
- Daily, C. M., Johnson, J. L. and Dalton, D. R. (1999) 'On the Measurements of Board Composition: Poor Consistency and a Serious Mismatch of Theory and Operationalization', *Decision Sciences* 30(1): 83–106.
- Dalton, D. R. and Dalton, C. M. (2011) 'Integration of Micro and Macro Studies in Governance Research: CEO Duality, Board Composition, and Financial Performance', *Journal of Management* 37(2): 404–11.
- DeBondt, W. F. M. and Thaler, R. H. (1995) 'Financial Decision-making in Markets and Firms: A Behavioral Perspective', in R. E. A. Jarrow (ed.) *Handbooks in Operations Research and Management*, pp. 385–410. Amsterdam: Elsevier.
- Dickie, M. W. (1984) 'Hesychia and Hybris in Pindar', in D. E. Gerber (ed.) *Greek Poetry and Philosophy: Studies in Honour of Leonard Woodbury*, pp. 83–109. Atlanta, GA: Scholars Press.
- Dubin, R. (1978) *Theory Building*. New York: The Free Press.
- Edmondson, A. C. and McManus, S. E. (2007) 'Methodological Fit in Management Field Research', *Academy of Management Review* 32(4): 1155–79.
- Edwards, J. R. (2011) 'The Fallacy of Formative Measurement', *Organizational Research Methods* 14(2): 370–88.
- Eisenhardt, K. M. and Martin, J. A. (2000) 'What are Dynamic Capabilities and are They a Useful Construct in Strategic Management?', *Strategic Management Journal* 21(10): 1105–21.
- Feldman, M. S. and Pentland, B. T. (2003) 'Reconceptualizing Organizational Routines as a Source of Flexibility and Change', *Administrative Science Quarterly* 48(1): 94–118.
- Finkelstein, S. and Hambrick, D. C. (1996) *Strategic Leadership: Top Executives and their Effects on Organizations*. St. Paul, MN: West.
- Finkelstein, S., Hambrick, D. C. and Cannella, A. A. (2009) *Strategic Leadership: Theory and Research on Executives, Top Management Teams, and Boards*. New York: Oxford University Press.
- Fischhoff, B., Slovic, P. and Lichtenstein, S. (1977) 'Knowing with Certainty: The Appropriateness of Extreme Confidence', *Journal of Experimental Psychology* 3(4): 552–64.
- Gervais, S. and Odean, T. (2001) 'Learning to be Overconfident', *The Review of Financial Studies* 14(1): 1–27.
- Gimeno, J. and Jeong, E. (2001) 'Multimarket Contact: Meaning and Measurement at Multiple Levels of Analysis', in J. A. C. Baum and H. R. Greve (eds) *Multiunit Organization and Multimarket Strategy: Advances in Strategic Management*, Vol. 18, pp. 357–408. Amsterdam: JAI Press.
- Godfrey, P. C. and Hill, C. W. L. (1995) 'The Problem of Unobservables in Strategic Management Research', *Strategic Management Journal* 16(7): 513–33.
- Grinblatt, M. and Keloharju, M. (2009) 'Sensation Seeking, Overconfidence and Trading Activity', *The Journal of Finance* 44(2): 549–78.
- Gulati, R. (1995) 'Does Familiarity Breed Trust? The Implications of Repeated Ties for Contractual Choice in Alliances', *Academy of Management Journal* 38(1): 85–112.
- Haleblian, J., Devers, C. E., McNamara, G., Carpenter, M. A. and Davison, R. B. (2009) 'Taking Stock of What We Know about Mergers and Acquisitions: A Review and Research Agenda', *Journal of Management* 35(3): 469–502.
- Hambrick, D. C. (1995) 'Fragmentation and the Other Problems CEOs Have with their Top Management Team', *California Management Review* 37(3): 110–27.
- Hambrick, D. C. (2004) 'The Disintegration of Strategic Management: It's Time to Consolidate our Gains', *Strategic Organization* 2(1): 91–8.

- Hambrick, D. C. (2007) 'The Field of Management's Devotion to Theory: Too Much of a Good Thing', *Academy of Management Journal* 50(6): 1346–52.
- Hayward, M. L. A. and Hambrick, D. C. (1997) 'Explaining the Premiums Paid for Large Acquisitions: Evidence of CEO Hubris', *Administrative Science Quarterly* 42(1): 103–27.
- Helfat, C. E. (2007) 'Stylized Facts, Empirical Research and Theory Development in Management', *Strategic Organization* 5(2): 185–92.
- Helfat, C. E. and Peteraf, M. A. (2009) 'Understanding Dynamic Capabilities: Progress along a Developmental Path', *Strategic Organization* 7(1): 91–102.
- Helfat, C. E. and Winter, S. G. (2011) 'Untangling Dynamic and Operational Capabilities: Strategy for the (N)ever-changing World', *Strategic Management Journal* 32(11): 1243–50.
- Hill, A. D. and Kern, D. (2010) 'Unobtrusive Measures: Can We Have Confidence in Them?', paper presented at the Strategic Management Society Annual International Conference, Rome, Italy.
- Hiller, N. J. and Hambrick, D. C. (2005) 'Conceptualizing Executive Hubris: The Role of (Hyper-) Core Self-evaluations in Strategic Decision-making', *Strategic Management Journal* 26(4): 297–319.
- Hinkin, T. R. (1995) 'A Review of Scale Development Practices in the Study of Organizations', *Journal of Management* 21(5): 967–88.
- Hinkin, T. R. (1998) 'A Brief Tutorial on the Development of Measures for Use in Survey Questionnaires', *Organizational Research Methods* 1(1): 104–21.
- Hirsch, P. M. and Levin, D. Z. (1999) 'Umbrella Advocates versus Validity Police: A Life-cycle Model', *Organization Science* 10(2): 199–212.
- Hitt, M. A., Boyd, B. K. and Li, D. (2004) 'The State of Strategic Management Research and a Vision of the Future', in D. Ketchen and D. Bergh (eds) *Research Methodology in Strategy and Management*, Vol. 1, pp. 1–31. New York: Elsevier.
- Hribar, P. and Yang, H. (2011) 'CEO Overconfidence and Management Forecasting', Working paper, University of Iowa, Iowa City, IA.
- Hubbard, R., Vetter, D. E. and Little, E. L. (1998) 'Replication in Strategic Management: Scientific Testing for Validity, Generalizability and Usefulness', *Strategic Management Journal* 19(3): 243–54.
- Huse, M. (2005) 'Accountability and Creating Accountability: A Framework for Exploring Behavioral Perspectives of Corporate Governance', *British Journal of Management* 16(S): 65–79.
- Judge, T. A., Piccolo, R. F. and Kosalka, T. (2009) 'The Bright and Dark Sides of Leader Traits: A Review and Theoretical Extension of the Leader Trait Paradigm', *The Leadership Quarterly* 20(6): 855–75.
- Klayman, J., Soll, J. B., Gonzalez-Vallejo, C. and Barlas, S. (1999) 'Overconfidence: It Depends on How, What, and Whom You Ask', *Organizational Behavior and Human Decision Processes* 79(3): 216–47.
- Kline, R. B. (2005). *Principles and Practice of Structural Equation Modeling*. New York: Guilford Press.
- Kroll, M. J., Toombs, L. A. and Wright, P. (2000) 'Napoleon's Tragic March Home from Moscow: Lessons in Hubris', *Academy of Management Executive* 14(1): 117–28.
- Lee, D. D. and Madhavan, R. (2010) 'Divestiture and Firm Performance: A Meta-analysis', *Journal of Management* 36(6): 1345–71.
- Li, J. and Tang, Y. (2010) 'CEO Hubris and Firm Risk Taking in China: The Moderating Role of Managerial Discretion', *Academy of Management Journal* 53(1): 45–68.
- Liu, Y., Taffler, R. and John, K. (2009) 'CEO Value Destruction in M&A Deals and Beyond', Working paper, University of Edinburgh, Edinburgh, UK.
- Lubatkin, M., Merchant, H. and Srinivasan, N. (1993) 'Construct-Validity of Some Unweighted Product Count Diversification Measures', *Strategic Management Journal* 14(6): 433–49.
- Lubinski, D. (2004) 'Introduction to the Special Section on Cognitive Abilities: 100 Years after Spearman's (1904) "General Intelligence," Objectively Determined and Measured', *Journal of Personality and Social Psychology* 86(1): 96–111.
- McClelland, P. L., Liang, X. and Barker, V. L. (2010) 'CEO Commitment to the Status Quo: Replication and Extension using Content Analysis', *Journal of Management* 36(5): 1251–77.
- McKinley, W. (2007) 'Managing Knowledge in Organization Studies through Instrumentation', *Organization* 14(1): 123–46.

- Malmendier, U. and Tate, G. (2005) 'CEO Overconfidence and Corporate Investment', *Journal of Finance* 60(6): 2661–700.
- Malmendier, U. and Tate, G. (2008) 'Who Makes Acquisitions? CEO Overconfidence and the Market's Reaction', *Journal of Financial Economics* 89(1): 20–43.
- Manove, M. and Padilla, A. J. (1999) 'Banking (Conservatively) with Optimists', *Rand Journal of Economics* 30(2): 324–50.
- Margolis, J. D. and Walsh, J. P. (2003) 'Misery Loves Companies: Rethinking Social Initiatives by Business', *Administrative Science Quarterly* 48(2): 268–305.
- Meehl, P. E. (1957) 'When Shall we Use our Heads Instead of the Formula', *Journal of Counseling Psychology* 4(4): 268–73.
- Meyer, A. D. (1991) 'What is Strategy's Distinctive Competence?', *Journal of Management* 17(4): 821–33.
- Mezias, S. J. and Regnier, M. O. (2007) 'Walking the Walk as Well as Talking the Talk: Replication and the Normal Science: Paradigm in Strategic Management Research', *Strategic Organization* 5(3): 283–97.
- Miller, D. and Sardais, C. (2011) 'A Concept of Leadership for the Strategic Organization', *Strategic Organization* 9(2): 174–83.
- Mitchell, R. K., Agle, B. R. and Wood, D. J. (1997) 'Toward a Theory of Stakeholder Identification and Salience: Defining the Principle and of Who and What Really Counts', *Academy of Management Review* 22(4): 853–66.
- Nag, R., Hambrick, D. C. and Chen, M. (2007) 'What is Strategic Management, Really? Inductive Derivation of a Consensus Definition of the Field', *Strategic Management Journal* 28(9): 935–55.
- Newbert, S. L. (2007) 'Empirical Research on the Resource-based View of the Firm: As Assessment and Suggestions for Future Research', *Strategic Management Journal* 28(1): 121–46.
- Nunnally, J. (1978) *Psychometric Theory*. New York: McGraw-Hill.
- Oxley, J. E., Rivkin, J. W. and Ryall, M. D. (2010) 'The Strategy Research Initiative: Recognizing and Encouraging High-quality Research in Strategy', *Strategic Organization* 8(4): 377–86.
- Oskamp, S. (1965) 'Overconfidence in Case-study Judgments', *Journal of Consulting Psychology* 29(3): 261–65.
- Payne, G. T., Moore, C. B., Griffis, S. E. and Autry, C. W. (2011) 'Multilevel Challenges and Opportunities in Social Capital Research', *Journal of Management* 37(2): 491–520.
- Pfeffer, J. (1993) 'Barriers to the Advance of Organizational Science: Paradigm Development as a Dependent Variable', *Academy of Management Review* 18(4): 599–620.
- Pietsch, G. (2007) 'Human Capital Measurement, Ambiguity, and Opportunism: Actors between Menace and Opportunity', *German Journal of Human Resource Research* 21(3): 252–73.
- Pitcher, P., Chreim, S. and Kisfalvi, V. (2000) 'CEO Succession Research: Methodological Bridges over Troubled Waters', *Strategic Management Journal* 21(6): 625–48.
- Powell, T. C. (2001) 'Competitive Advantage: Logical and Philosophical Considerations', *Strategic Management Journal* 22(9): 875–88.
- Priem, R. L. and Butler, J. E. (2001) 'Is the Resource-based "View" a Useful Perspective for Strategic Management Research?', *Academy of Management Review* 26(1): 22–40.
- Rajagopalan, N. and Spreitzer, G. M. (1997) 'Toward a Theory of Strategic Change: A Multi-lens Perspective and Integrative Framework', *Academy of Management Review* 22(1): 48–79.
- Richard, P. J., Devinney, T. M., Yip, G. S. and Johnson, G. (2009) 'Measuring Organizational Performance: Towards Methodological Best Practice', *Journal of Management* 35(3): 718–804.
- Robins, J. A. and Wiersema, M. F. (2003) 'The Measurement of Corporate Portfolio Strategy: Analysis of the Content Validity of Related Diversification Indexes', *Strategic Management Journal* 24(1): 39–59.
- Roll, R. (1986) 'The Hubris Hypothesis of Corporate Takeovers', *Journal of Business* 59(2): 197–216.
- Ronda-Pupo, G. A. and Guerras-Martin, L. A. (2012) 'Dynamics of the Evolution of the Strategy Concept 1962–2008', *Strategic Management Journal* 33(2): 162–8.
- Rovenpor, J. L. (1993) 'The Relationship between Four Personal Characteristics of Chief Executive Officers (CEOs) and Company Merger and Acquisition Activity (MAA)', *Journal of Business and Psychology* 8(1): 27–54.

- Schwab, D. P. (1980) 'Construct Validity in Organization Behavior', in B. M. Staw and L. L. Cummings (eds) *Research in Organizational Behavior*, pp. 3–43. Greenwich, CT: JAI Press.
- Sharfman, M. P. and Dean, J., Jr (1991) 'Conceptualizing and Measuring the Organizational Environment: A Multidimensional Approach', *Journal of Management* 17(4): 681–700.
- Sharma, P., Chrisman, J. J. and Chua, J. H. (1996) *A Review and Annotated Bibliography of Family Business Studies*. Boston, MA: Kluwer Academic Publishers.
- Shaw J. D., Gupta, N. and Delery, J. E. (2002) 'Pay Dispersion and Workforce Performance: Moderating Effects of Incentives and Interdependence', *Strategic Management Journal* 23(6): 491–512.
- Shefrin, H. (2002) *Beyond Greed and Fear: Understanding Behavioral Finance and the Psychology of Investing*. New York: Oxford University Press.
- Shinkle, G. A. (2012) 'Organizational Aspirations, Reference Points, and Goals: Building on the Past and Aiming for the Future', *Journal of Management* 38(1): 415–55.
- Shook, C. L., Ketchen, D. J., Hult, G. T. M. and Kacmar, K. M. (2004) 'An Assessment of the Use of Structural Equation Modeling in Strategic Management Research', *Strategic Management Journal* 25(4): 397–404.
- Short, J. (2009) 'The Art of Writing a Review Article', *Journal of Management* 35(6): 1312–17.
- Siegel, P. and Hambrick, D. C. (2005) 'Pay Disparities within Top Management Groups: Evidence of Harmful Effects on Performance of High-technology Firms', *Organization Science* 16(3): 259–74.
- Simon, M. and Houghton, S. M. (2003) 'The Relationship between Overconfidence and the Introduction of Risky Products: Evidence from a Field Study', *Academy of Management Journal* 46(2): 139–49.
- Singh, K., Ang, S. H. and Leong, S. M. (2003) 'Increasing Replication for Knowledge Accumulation in Strategy Research', *Journal of Management* 29(4): 533–49.
- Suddaby, R. (2010) 'Editor's Comments: Construct Clarity in Theories of Management and Organization', *Academy of Management Journal* 35(3): 346–57.
- Sutton, R. I. and Staw, B. M. (1995) 'What Theory is Not', *Administrative Science Quarterly* 40(3): 474–94.
- Tan, J. and Peng, M. W. (2003) 'Organizational Slack and Firm Performance during Economic Transitions: Two Studies from an Emerging Economy', *Strategic Management Journal* 24(13): 1249–63.
- Tsang, E. W. K. and Kwan, K. M. (1999) 'Replication and Theory Development in Organizational Science: A Critical Realist Perspective', *Academy of Management Review* 24(4): 759–80.
- Venkatraman, N. and Grant, J. H. (1986) 'Construct Measurement in Organizational Strategy Research: A Critique and Proposal', *Academy of Management Review* 11(1): 71–87.
- Venkatraman, N. and Ramanujam, V. (1986) 'Measurement of Business Performance in Strategy Research: A Comparison of Approaches', *Academy of Management Review* 11(4): 801–14.
- Venkatraman, N. and Ramanujam, V. (1987) 'Measurement of Business Economic Performance: An Examination of Method Convergence', *Journal of Management Review* 13(1): 109–22.

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