Moving Forward: Developing Theoretical Contributions in Management Studies

Joep P. Cornelissen and Rodolphe Durand

VU University Amsterdam and University of Leeds; HEC Paris

ABSTRACT   How do we, as management researchers, develop novel theoretical contributions and, thereby, potentially break new ground in management studies? To address this question, we review previous methodological work on theorizing and advance a typology of the reasoning processes that underlie theoretical contributions and significant advances in management studies. This typology consists of various types of analogical and counterfactual reasoning, ranging from focused thought experiments aimed at prodding existing theory in the direction of alternative assumptions, constructs, and hypotheses to more expansive efforts for inducing new theoretical models and alternative explanations. Applying this typology, we detail the mechanisms behind the formation of novel theoretical contributions and illustrate the currency of our typology through a review of 24 major theoretical breakthroughs in management studies. We conclude the paper by discussing the implications of this typology for our collective efforts in building, elaborating, and expanding theory in management studies.

Keywords: analogy, counterfactuals, management research, theoretical contribution, theory

INTRODUCTION

Over the years, many researchers have attempted to understand the core mechanisms and processes around the creation, refinement, and extension of management theory (e.g., Folger and Turillo, 1999; Sutton and Staw, 1995; Weick, 1989). The latest incarnation of these efforts is the special issue of the *Academy of Management Review* (2011), which is explicitly concerned with stimulating creativity in theorizing as a way of advancing research on management and organizations. Within this recent special issue, the contributions on theory development (e.g., Alvesson and Sandberg, 2011; Boxenbaum and Rouleau, 2011; Tsang and Elsaesser, 2011) also mirror previous contributions (e.g., Corley and Gioia, 2011; Folger and Turillo, 1999; Whetten et al., 2009) in their critique of the current state of management and organization theory. The problem repeatedly highlighted is that the field of management studies, when broadly defined, has been

starved of new, home-grown theories. Many classic theoretical canons such as population ecology, agency theory, transaction cost economics, and institutional theory emerged in the 1970s, but, since then, little real innovation has occurred (e.g., Davis, 2010; Suddaby et al., 2011).

Although delineating the exact boundaries between the domain of management studies and adjacent social scientific disciplines often poses difficulty, the critique more generally has been that current management and organization theory often proceeds by a rather one-sided borrowing of theories from other disciplines, such as economics, sociology, and psychology, which are then applied to areas of management (Agarwal and Hoetker, 2007). The result is a lack of 'indigenous' theory development that might travel to other parts of the social sciences and, as such, may reverse the flow of theory borrowing (Markóczy and Deeds, 2009; Oswick et al., 2011; Whetten et al., 2009). This effect is considered a problem, as it may not only highlight a lack of creativity and independent thinking amongst management researchers but is also more generally seen to affect the status and significance of management studies within the broader social sciences (Birkinshaw et al., 2014).

This criticism has perhaps not surprisingly led to a growing literature on 'tools' aimed at stimulating creativity and theoretical innovation, including, for example, 'disciplined imagination' (Weick, 1989), 'thickening thin abstractions' (Folger and Turillo, 1999), 'contrastive explanations' (Tsang and Elsaesser, 2011), 'problematizing assumptions' (Alvesson and Sandberg, 2011), the 'bricolage of concepts' (Boxenbaum and Rouleau, 2011), the 'combination of scientific logics' (Kilduff et al., 2011), the 'borrowing' and 'blending' of theory and theory fragments (Whetten et al., 2009), and 'top-down inductive theorizing' (Shepherd and Sutcliffe, 2011). These tools share a common focus on significantly advancing theory and breaking new ground, as opposed to 'filling gaps' in a literature that often leads researchers to reiterate and extend rather than challenge the existing knowledge base (Alvesson and Sandberg, 2013). But the obvious question raised is whether all of these tools lead to groundbreaking innovations in theory.

We review these theory development tools and position them as part of a comprehensive typology of how we reason and develop new theory, as management researchers. This typology is informed by writings in the philosophy of science (e.g., Goodman, 1947; Hesse, 1966; Kuhn, 1993), yet also accounts for previously unrecognized forms of reasoning. This typology allows us to achieve two things: first, in terms of describing the processes of theorizing, it presents overall a more precise and parsimonious terminology than the more ambiguous neologisms, process models, and prescriptions that circulate in management studies (e.g., disciplined imagination, a theory of contrastive explanations, a bricolage of theories and concepts, a method of problematizing assumptions). Second, and perhaps more importantly, this typology allows us to compare these models and prescriptions, and, by doing so, we demonstrate that not every approach towards theory development generates the same returns. The scope and utility of these models and prescriptions varies from developing a new base of theoretical assumptions, to causal modelling aimed at developing hypotheses and qualifying causal pathways, to invoking an altogether completely new theoretical framing or broad theoretical perspective.

We furthermore illustrate these differences in scope and utility through an analysis of 24 theories that are broadly recognized and credited for their groundbreaking

contributions to management studies (Smith and Hitt, 2005). The analysis of these theories illustrates that different kinds of management researchers tend to follow different paths towards developing original theory and theoretical contributions. Whereas management researchers at the micro level tend to focus on construct development and causal modelling, researchers at the macro level tend to engage in more comprehensive counterfactual reasoning that recasts our understanding of managerial and organizational phenomena. Our analysis of these 24 theories underscores the general currency of the typology and its ability to inform theory development. We build on these findings and, in the discussion section, highlight specific ways by which management researchers can systematically and creatively apply the modes of reasoning in our typology to develop theoretical contributions. In this way, we aim to equip management researchers with a set of thinking tools to enable them to take concerted steps to advance the theoretical base of management studies.

Before we enter into our review, it is important to highlight at the outset our concern with theoretical contributions. As such, we restrict our focus to theory as commonly defined across schools of thought and paradigms as an analytic structure or system of causal associations that attempts to account for, explain, and predict empirical phenomena (Durand and Vaara, 2009; Sutton and Staw, 1995). We realize, of course, the intimate connection between theory and empirical data. Yet, we do not directly address data in this paper, as our primary focus is to describe how, in their efforts to claim novel theoretical contributions, management researchers conceptually reason in terms of models and constructs in their interaction with data. In general, throughout the paper, we refer to such reasoning processes as theory development, theorizing, or theory creation, and describe how the different reasoning processes in our typology lead to specific forms of theorizing, such as generating and defining new constructs and specifying and elaborating causal relationships and processes.

IMAGINATION, REASONING, AND THEORETICAL CONTRIBUTIONS

Within the broad area of management studies, an extensive literature addresses the use of traditional forms of scientific logic, such as deduction, induction, and abduction (e.g., Mantere and Ketokivi, 2013). Across this literature, these forms of logic have largely been characterized as means of practical reasoning; that is, as processes of argumentation by which we, in our academic texts, proceed from various accepted grounds to asserting various theoretical claims in our efforts to convince a scholarly audience (e.g., Locke and Golden-Biddle, 1997). For some authors, no universally accepted and absolute principles govern such reasoning and the persuasiveness of their resulting arguments (Ketokivi and Mantere, 2010; Mantere and Ketokivi, 2013). Some researchers have instead highlighted the importance of the pragmatic virtues of a deductive, inductive, or abductive argument in context, such as its simplicity (Weick, 1989), coherence (Shepherd and Sutcliffe, 2011), contrast (Boxenbaum and Rouleau, 2011), ability to interest (Alvesson and Sandberg, 2011), or usefulness (Corley and Gioia, 2011).

Whereas prior work in management studies has primarily emphasized the pragmatic reasoning and justification of theoretical arguments in context, the body of literature on science in action and the philosophy of science literature more generally lends credence

to the idea that the basic units for scientists in working with theories are most often not axiomatic systems or formal logic, but conceptual models and representations that they cognitively construct, manipulate, adapt, and evaluate (e.g., Darden, 1991; Hesse, 1966; Morgan and Morrison, 1999; Nersessian, 2008). Histories of the social and natural sciences also show that, when building a theory or when developing an alternative version of it, modelling and imagination often come first, followed by further abstraction to formal expression in logic and axioms of theories (Hesse, 1966; Kuhn, 1993). A model can be defined loosely as a representation of a system showing relationships and inter-actions between variables or constructs. A constructed model is largely conceptual in nature in the sense that it is an imaginary system designed to be a structural, functional, or behavioural analogue of a target phenomenon that researchers seek to explain (Johnson-Laird, 1983; Nersessian, 2008, p. 10).

Embracing the notion that science or research in action involves reasoning and thought processes based on conceptual models of target phenomena complements the focus on the traditional canons of formal logic (Nersessian, 2008; Thagard, 2012). For example, although it may well be possible to re-derive the outcomes of the reasoning associated with creative thought and theoretical innovation by means of logic, that move can usually take place only after the creative work has been completed, which leaves the discovery and creativity process itself a mystery (Goodman, 1947; Hesse, 1966). It is thus helpful, we believe, to distinguish between cognitive reasoning on the one hand and logical forms of reasoning on the other: the first refers to our cognitive processes and inferential work in action, whereas the latter concerns, strictly speaking, rhetoric and forms of logic and justification in the context of academic texts (for similar distinctions, see Boxenbaum and Rouleau, 2011; Ketokivi and Mantere, 2010).

To illustrate this distinction, the logic of abduction is frequently discussed as the logic from which new concepts and hypotheses are derived and, ultimately, how new discov-eries are made (e.g., Nersessian, 2008). Abductive reasoning is a process of generating explanatory hypotheses around 'surprising facts' or 'empirical mysteries' (Alvesson and Kärreman, 2007; Locke et al., 2008). It is considered to be an 'ampliative' form of reasoning as it involves inferring an explanation where the conclusion is not logically entailed in the premises (Mantere and Ketokivi, 2013). As such, it involves creative inference, although the cognitive nature of abductive reasoning's inferential processes remains largely unspecified (Thagard, 2012). This lack in understanding, we argue, points again to the importance of providing an account of creative thought and of the cognitive reasoning processes behind the articulation of novel assumptions, hypotheses, and explanations.

In other words, we believe that a useful, complementary perspective to formal logic is the cognitive reasoning that management researchers use to develop new theory. This complementary focus does not, as mentioned, substitute for formal logic. Instead, con-sistent with writings in the philosophy of science (e.g., Hesse, 1966; Kuhn, 1993), our overall aim is to shift the gaze towards the creative thought processes underpinning theoretical innovation in management research. This distinct but complementary focus, some have argued, may ultimately provide a broader grounding for deduction, induc-tion, and abduction (Hesse, 1966; Hofstadter and Sander, 2013; Nersessian, 2008; Thagard, 2012). However, our aim in this paper is not to draw out this connection or to

detail how particular forms of cognition or intuition may be associated with formal logic. Instead, our aim is more specific: we seek to provide an account of the cognitive processes associated with imagining the basis for novel theoretical contributions to management research.

To achieve this aim, we present a comprehensive typology of the thinking processes associated with theoretical contributions. The typology is based on the premise that developing new, original theoretical contributions rests on either analogical thinking and reasoning, from which new candidate inferences are derived, or counterfactual thinking and reasoning, through which existing theories are challenged and, in turn, rethought and remodelled. We also induce and highlight, as part of our typology, a greater variety in analogical and counterfactual reasoning than previously recognized. As we aim to demonstrate through our typology (Table I), researchers use either analogy or counterfactual reasoning as a heuristic device that nudges them to develop novel and alternative constructs and hypotheses (e.g., Bacharach, 1989; Turner, 1996), as a modelling device to identify and model causal dynamics (e.g., Durand and Vaara, 2009; Gentner and Gentner, 1983), or as a comprehensive means of conceiving an entirely new conceptual scheme, or framework, for interpreting and understanding management and organizations (e.g., Cornelissen, 2005; Morgan, 1980).

In the next section of the paper, we define and illustrate the differences between these so-called heuristic, causal, and constitutive modes of analogical and counterfactual reasoning. The six modes of reasoning that we acknowledge as part of the typology are conceptually distinct, yet are not mutually exclusive. As we will show, researchers in a particular research programme or literature may, as part of their theorizing, shift between the modes of reasoning or even combine them. We furthermore position, as part of the typology, existing models and prescriptions on theoretical innovation in management studies, and we demonstrate the differences between these approaches. We show that most of these models fall short as tools for developing significant or frame-breaking theoretical contributions, and we elaborate, instead, on how researchers may develop such contributions through specific forms of analogical and counterfactual reasoning.

A TYPOLOGY OF WAYS TO CREATE NEW THEORY

Analogical Reasoning

In recent years, one of the central questions that management researchers have grappled with is how new theories come into existence. The answers that have been provided combine an acknowledgment of pragmatic factors around the positioning of a novel theory in a particular literature or community (Locke and Golden-Biddle, 1997) with the observation that new theories are fundamentally conceived through semantic leaps associated with analogical thinking (e.g., Boxenbaum and Rouleau, 2011; Cornelissen, 2005; Okhuysen and Bonardi, 2011; Shepherd and Sutcliffe, 2011; Weick, 1989).

Analogical thinking points to an obvious way in which researchers reason about abstract or complex subjects such as management and organizations (Pinker, 2010). For example, many researchers would themselves notice, or have pointed out to them, a parallel between models and ideas. Such observations may involve a comparison

Table I. An overview of reasoning and theory development

Mode of reasoning	Analogies	Counterfactuals	Typical application	Illustrative references in management studies
Heuristic reasoning	*Heuristic analogy* The extension of ideas and assumptions from other contexts into management studies for the purpose of suggesting new and alternative assumptions	*Spotlight counterfactual* The challenging of default assumptions through contrastive questioning	*Theory building* The development of new constructs in relation to a target phenomenon, possibly through rewriting default assumptions around a target phenomenon in alternative terms	*Heuristic analogy:* Bacharach (1989), Boxenbaum and Rouleau (2011), Shepherd and Sutcliffe (2011), Weick (1989) *Spotlight counterfactual:* Alvesson and Sandberg (2011), Oswick et al. (2011)
Causal reasoning	*Causal analogy* The extension of causal models from other contexts into management studies for the purpose of suggesting new hypotheses and explanations	*Lab-rat counterfactual* The identification of important causal factors and causal patterns through contrastive questioning and testing	*Qualifying theory* The development and refinement of explanations of a target phenomenon by reducing the causal field of factors around a target phenomenon to a more parsimonious set	*Causal analog:* new *Lab-rat counterfactual:* Durand and Vaara (2009), Tsang and Elsaesser (2011)
Constitutive reasoning	*Constitutive analogy* The alignment and integration of management constructs with constructs from other contexts for the purpose of providing an integrated conceptual model with coherence in its base assumptions, default logic, and hypotheses	*Constitutive counterfactual* The alignment and integration of a default theory with an imagined counter-alternative model with attendant assumptions and a causal logic	*Theory expansion* The insertion of a radically new theoretical perspective and vocabulary for advancing our understanding of a target phenomenon	*Constitutive analog:* Cornelissen (2005), Morgan (1980), Okhuysen and Bonardi (2011) *Constitutive counterfactual:* new

between a domain of knowledge that researchers already understand and another target domain that they are not yet able to fully understand or explain, or one they are keen to revise, The comparison in turn may then provide new vocabulary, insights, and inferences (cf., Hallyn, 2000; Hesse, 1966). Analogies, including metaphors, thus principally function as a way of seeing relationships between conceptual frames and of conceptualizing and understanding a particular subject in terms traditionally associated with another subject or domain of knowledge (Gentner et al., 2001; Lakoff and Johnson, 1980, 1999).

The difference between analogies and metaphors is generally one of degree rather than kind (Gentner et al., 2001); metaphors typically involve a more extended reach in terms of the domains of knowledge connoted or directly drawn into the comparison (Cornelissen, 2005). For example, Jensen and Meckling (1976) see an organization as a 'nexus of contracts' and draw an analogy between firms and law, tapping into neighbouring domains of knowledge that are often associated with one another under the rubric of corporate governance. In contrast, seeing organizations through a biological lens as a 'population of organisms' competing for survival (Hannan and Freeman, 1977) correlates the more distant domains of management and biology. The latter comparison, in effect, crosses conventional categories of understanding, which is often considered to be a key characteristic of metaphors (Cornelissen, 2005). In general, such distance plays a role in the theorizing process, in that more distant domains may provoke surprisingly new and revelatory insights and inferences (compared with 'closer' comparisons) – providing the comparison is also seen as apt and fitting to the target subject of management and organizations (Cornelissen, 2005; Cornelissen and Durand, 2012; Dunbar, 1995).

For our present purposes, we refer to analogies as including both analogies and metaphors. Within management studies, the subject of analogies is central to research on creative thinking processes associated with strategic change, entrepreneurship, and innovation (Cornelissen and Clarke, 2010; Gavetti et al., 2005; Grégoire et al., 2010). In contrast, within the context of discussions on management and organizational theory, the subject of analogies has experienced a bit of a chequered history. Their use in theorizing has at times been considered to be controversial, with metaphors in particular being cast as poetic or rhetoric devices rather than as semantic tools for theory building (e.g., Pinder and Bourgeois, 1982). At the same time, the amount of work on the topic in relation to theory is, relatively speaking, limited, and confined to a few articles (e.g., Boxenbaum and Rouleau, 2011; Cornelissen, 2005; Morgan, 1980; Pinder and Bourgeois, 1982). The upshot is that these articles each proclaim a specific (or limited) usage of analogy in theorizing. Thus, in terms of the uses of different kinds of analogies and their respective contributions to theory development, the field has not been served by a full debate and understanding of analogies' various uses.

Types of Analogies in Theorizing

To address this lack, we provide a typology of the uses of types of analogies applied by researchers in altering existing theory or creating new theory. In short, we suggest that researchers may use analogies as a heuristic device, which, as a prod, nudges researchers

to develop novel and alternative constructs and hypotheses (e.g., Bacharach, 1989; Pinder and Bourgeois, 1982); as a device to identify and model causal dynamics (Gentner and Gentner, 1983); or, as an entire conceptual scheme to interpret and understand management and organizations (Cornelissen, 2005; Morgan, 1980). As part of this typology, we also position and compare existing models and prescriptions on theorizing. In doing so, we highlight gaps in our previous understanding of how analogies may foster theory development.

Heuristic analogies are best seen as thought-propelling analogies that catalyse our thinking, and thereby help researchers approach the phenomenon of organizations in a novel way (Pinder and Bourgeois, 1982). The heuristic analogy is seen as only the beginning of an inquiry: it is used in an episodic manner and is largely dispensed with once it has enabled researchers to derive specific constructs or hypotheses (Bacharach, 1989, p. 497). This view of analogy is epitomized in Weick's notion of theory construction as resulting from a disciplined imagination, which suggests that analogies provide temporary scaffolding in the development of new theory (Boxenbaum and Rouleau, 2011; Shepherd and Sutcliffe, 2011; Weick, 1989). When the initial analogy has, in turn, led to the definition of constructs and hypotheses appropriate to the context of management and organizations, it can be dispensed with as though it were 'a ladder to be kicked away once the new theoretical plateau has been reached' (Brown, 1976, p. 174). The typical use of heuristic analogies is to introduce a new set of assumptions as the ground on which to build new theory, such as by introducing a new construct or significantly re-conceptualizing an existing one (Table I). As an illustration, the broad theoretical perspective of sensemaking (Weick, 1995) has evolved on the back of analogical connections with cognitive dissonance theory (Festinger, 1957), to develop the idea of retrospective rationalizations, and with the notion of biological enaction (Varela, 1979), to develop the idea of individual managers constructing and 'enacting' their organizational environments. The theory of sensemaking has since been extended from these specific constructs into a broad theoretical perspective and, following a re-description of terms (e.g., *enaction* being translated as *enactment*), the initial analogical connections are no longer visible or actively in use.

A *causal analogy* involves the abstraction of a causal template derived from the analogical comparison (Gentner and Colhoun, 2010). It typically involves a partial analogy between conceptual representations and an explicit attempt at deriving a causal structure (Gentner and Gentner, 1983). Gentner (1983, p. 156), in her structure-mapping theory, explicitly defined analogy as 'an assertion that a relational structure that normally applies in one domain can be applied in another domain'. The emphasis here is not simply on common attributes or counterpart connections but on the relationships between the counterpart connections of two conceptual frames and the underlying causality (Gentner et al., 2001). On this account, the use of an analogy is directly related to systematicity in the causal relationship between entities in the corresponding domains, that is, agents, their activity, and the environments they operate in (Gentner and Wolff, 2000), which, in turn, supports candidate inferences in terms of the common causal schema underlying both domains. Although the causal analogy has not previously been mentioned in theory discussions within management studies, a good illustration of this form of analogical reasoning is the research programme of population ecology. Hannan and Freeman

(1977, p. 933) argued that modelling the development and change of organizations in ecological terms was 'instructive', because, based on a partial analogy, it involved similar causal dynamics as the growth and survival of populations of biological organisms. As shown in this example, causal analogies help qualify theory by introducing, elaborating, or further specifying causal relationships and processes in relation to a managerial or organizational phenomenon (Colquitt and Zapata-Phelan, 2007; Durand and Vaara, 2009).

A *constitutive analogy*, finally, is a 'full' analogy, which both constitutes the basis of a theory and, in turn, provides interpretations and empowers inferences about real-world phenomena and observations (Boyd, 1979; Brown, 2003; Cornelissen, 2005). The computational image of the mind, for example, which initially emerged as an analogical extension of advances in artificial intelligence, has become a fundamental building block in cognitive psychology research and forms the core of the behavioural theory of the firm (e.g., Gavetti, 2012). Indeed, as a result of the strong analogical connection between cognition and computers, the mind can be said to *literally* engage in computation. The human mind and digital computers are, thus, two exemplars of the same system of computation (e.g., Newell and Simon, 1972). In this manner, analogies become entrenched, so that, over time, we take them to be literally true models and descriptions. In fact, a constitutive analogy, despite starting provisionally, may become fully adapted and accommodated to a new context (Boyd, 1979) because it is perceived to capture multiple features and genuine causal patterns in the targeted domain.

The constitutive analogy differs from a causal analogy in that the constitutive variant involves importing large parts, if not the entirety, of a representation of the source domain, including its key vocabulary, base assumptions, and underlying causal structure (Goodman, 1984). A further difference is that the constitutive variant involves a blending, or conceptual integration, of the two conceptual representations being aligned (Cornelissen, 2005; Morgan, 1980; Okhuysen and Bonardi, 2011), whereas the causal variant involves mainly the abstraction and transfer of a causal schema from a 'source' to a 'target' (Fauconnier and Turner, 2002; Gentner and Colhoun, 2010). The causal variant is thus largely an asymmetric comparison, from a source to a target, whereas the constitutive analogy incorporates parts of both frames and adopts, through further completion and elaboration, an emergent structure of its own (Fauconnier and Turner, 2002; Gentner and Colhoun, 2010).

The constitutive analogy, in other words, produces an entirely integrated conceptual representation with coherence in its base assumptions, default logic, and hypotheses. As such, it may substantially expand a literature by overwriting prior theory and by redirecting a literature along a new and different path (Corley and Gioia, 2011). Constitutive analogies characterize efforts to expand theory (Table I), defined as the formulation of a novel theoretical frame or model that provides an integrated set of constructs, relationships, or processes that have not previously been the subject of theorizing (Colquitt and Zapata-Phelan, 2007; Corley and Gioia, 2011). Boyd (1979, p. 361), who initially coined the term *constitutive analogy*, emphasized the generative nature of such analogies, which 'when they are successful [become] the property of the entire scientific community, and variations on them are explored by hundreds of scientific authors without their interactive quality being lost'. Indeed, theories such as the behavioural theory of the firm aptly

demonstrate how a single analogy may be accommodated to the context of organizations and provides a coherent base of theoretical assumptions and a range of analogy-consistent cognitive processes and constructs such as attention, cognitive inertia, learning, and reasoning based on mental models (e.g., Gavetti and Levinthal, 2000).

In sum, existing models on theorizing tend to highlight the role of analogy as a form of heuristic reasoning aimed at deriving a new assumption ground as the basis for construct development. Our typology underscores the importance of causal analogies, which, to date, have not been identified and recognized as contributing to new theorizing, and adds further detail in terms of the role and use of constitutive analogies in theory development.

Counterfactual Reasoning

In addition to recognizing the role of analogical reasoning in the creation of new theory, recent management studies have also emphasized the role of counterfactual reasoning in theory development (e.g., Alvesson and Sandberg, 2011; Durand and Vaara, 2009; Folger and Turillo, 1999; Tsang and Elsaesser, 2011). Counterfactual reasoning involves researchers imagining alternatives to existing theoretical assumptions, constructs, and models of causality through contrastive questioning – asking the typical 'what if' question – as a way of modifying or challenging the existing theoretical base.

Tsang and Elsaesser (2011), for example, highlight how counterfactual reasoning allows a theorist to imagine alternative hypothetical scenarios that serve as foils to a received or orthodox theory (Folger and Turillo, 1999; Tsang and Elsaesser, 2011) and may spur new conceptual development. In the words of Folger and Turillo (1999, p. 745), 'thought experiments thereby zero in on problematic assumptions and help theorists to construct imaginary worlds to draw out implications of new assumptions'. Tsang and Elsaesser (2011) also illustrate how counterfactual reasoning may help to establish causality by contrasting a given theoretical explanation of an actual scenario with a reasonably different imagined explanation in an effort to isolate some causal factors from others and to determine precise causal relations (see also Durand and Vaara, 2009; Pearl, 2000). Counterfactual reasoning, in other words, is a form of reasoning that helps researchers construct alternative theories. Such reasoning still operates on the basis of analogical connections between similar, but in this case, counterfactual, or contrasting, representations (Fauconnier and Sweetser, 1996).

When researchers imagine a counterfactual scenario, they do so by drawing on such basic inputs as previous base explanations and direct empirical observations. Based on these inputs, they then construct a counterfactual world in which previous theory and observations are reordered and rethought of in such a way that it contrasts with the default base explanation of an actual state of affairs or phenomenon (Lewis, 1986). In other words, counterfactual reasoning draws on imagination and contrastive questioning to construct analogically comparable but counterfactual worlds and to specifically direct the researcher's mind to plausible alternative conceptual representations. In such instances, the crucial test in such reasoning is whether the constructed worlds provide plausible alternatives to the default theory, as the target (Lewis, 1973, 1986; Tetlock and Belkin, 1996).

Within management studies, counterfactual reasoning has been discussed only sporadically, in a few studies on creative thinking processes associated with entrepreneurship and innovation (e.g., Baron, 2000; Gaglio, 2004). Similarly, the subject has only recently started to be discussed within the context of management and organizational theory (e.g., Durand and Vaara, 2009). We address this shortcoming by drawing on the work of Turner (1996), who distinguishes between heuristic, or what he labels as 'spotlight' counterfactual reasoning, and causal, or what he terms 'lab-rat' counterfactual reasoning. In addition, and parallel to our discussion of analogies, we also induce and identify a third type, namely the constitutive form of counterfactual reasoning (cf. Goodman, 1947) and specify its role in theory development. Table I summarizes the six types of analogical and counterfactual reasoning that we distinguish and their application to theory development. We now turn to describe the three types of counterfactual reasoning in more detail.

Types of Counterfactual Reasoning in Theorizing

When researchers engage in *spotlight counterfactual reasoning*, they simply ask: what if we think differently about the base assumptions and default explanations? They subsequently construct alternative imagined scenarios and possible worlds, which may incorporate basic variables from a particular literature or default theory but, as a consequence of inserting a different set of base assumptions or alternative explanations, such scenarios then suggest alternative directions for research. Inserting alternative assumptions and explanations is, as mentioned, based on analogical reasoning, but with such reasoning tuned towards providing an antidote to existing theoretical thought.

The purpose of 'spotlight' counterfactual reasoning is largely to focus on the features of a given theory or literature in such a way that it prompts us to rethink the given theory's underlying assumptions and default logics (Cornelissen and Durand, 2012; Turner, 1996). The counterfactual mirror image that is derived as a result of this process contains a basic structure that is easy to see, and, once it is pointed out, leads us to recognize a potentially different set of assumptions. Alvesson and Sandberg (2011, p. 254), in describing their method of problematizing assumptions, display the basics of spotlight counterfactual reasoning. They illustrate its use with the example of conceiving of leadership as being situationally emergent rather than trait-determined, which 'challenge[s] an in-house assumption of "leadership" '. It is important to stress that spotlight counterfactual reasoning does not typically involve a detailed elaboration of possible emergent inferences and typically stops short of specifying antecedents, consequents, and principles of causal connection (Turner, 1996). Instead, its primary purpose is simply to spotlight base assumptions or ideas in the pre-existing domain of a local theory or literature (Turner, 1996), to stimulate reflectivity, and to see the potential (but only the potential) for changing conceptual frames (Cornelissen and Durand, 2012). This primary focus does mean, however, that for spotlight counterfactual reasoning to have any contribution to theory building, it needs to connect critical reflection (Alvesson and Sandberg, 2011; Oswick et al., 2011) to either the development of novel constructs or the significant revision of existing constructs (Cornelissen and Durand, 2012). As Bacharach (1989, pp. 497–98) argued some time ago, thought experiments of this kind 'must go

beyond description and be a useful heuristic device' in that they 'are not theories but may well serve as precursors to theories, and should be judged on that basis'.

The *lab-rat form of counterfactual reasoning* consists of a researcher contrasting a given actual scenario with a reasonably different imagined scenario of causal patterns and associations (Turner, 1996). The purpose of doing so is to exploit the carefully controlled structure of similarities and differences between the actual and imagined situation to determine patterns of causality and the plausibility of rival explanations (Pearl, 2000). Tsang and Elsaesser (2011) illustrate how counterfactual reasoning was central to the creation and development of transaction cost economics. In this kind of counterfactual reasoning, a researcher first attempts to isolate important causal factors and then imagines a comparable analogue to essentially carve out alternative theoretical representations and to 'test' alternative causal conjectures, similar to controlled manipulations in a lab (Turner, 1996, 2001). As such, the thought experiment helps to define the background set of factors, or, in Mackie's (1974) terms, the 'causal field', where some factors are common to the prior and the contrastive causal model, to help identify possible causal candidates and rule out others. In other words, the process is one of manipulating the existing causal model into an analogically related but strikingly different counterfactual model, whilst holding constant everything else prior to the antecedent, so that complexity and ambiguity will not arise in attributing causal relationships. In this way, the contrasting between causal models is used to sharpen and define the effect to be explained (Mandel, 2005). This approach is essentially the one advocated by Durand and Vaara (2009) to identify more precisely patterns of causality in the context of attributing competitive advantage. Causal counterfactual reasoning, in other words, plays an important role in qualifying theory by helping researchers to flesh out and elaborate alternative and potentially more explanatory causal pathways (Colquitt and Zapata-Phelan, 2007).

Constitutive counterfactual reasoning emerges from Goodman's (1947) early and largely forgotten work on counterfactual reasoning. Goodman (1947) established that when, through counterfactual reasoning, researchers reframe a particular subject, those frames, which act as conceptual organizing devices in thought, are accompanied by a default conceptual structure, including base assumptions regarding certain classes of subjects and the contingencies typically involved in such cases. Fauconnier and Turner (2002, p. 32) similarly argue that researchers' use of counterfactual reasoning to focus on minimal modification of a given set of theoretical assumptions or causal relationships is only a special case. They note that comprehensive forms of counterfactual reasoning are not only common but also productive. As they suggest, 'counterfactual scenarios are assembled mentally not by taking full representations of the world and making discrete, finite, known changes to deliver full possible worlds but, instead, by conceptual integration, which can compose schematic blends that suit the conceptual purposes at hand' (Fauconnier and Turner, 2002, p. 218). When using constitutive counterfactual reasoning, whatever theory previously existed is wholly supplanted by a new conceptual frame that provides a different conceptual organization, as well as fundamentally different guiding assumptions and causal explanations regarding the phenomenon in question.

Constitutive counterfactual reasoning essentially involves a complex blending of a proposed and prior theoretical frame, whereby the combination of contrasts and similarities, together with additional assumptions, is simulated and elaborated into an

emergent conceptual representation and inferences. An example of constitutive counterfactual reasoning is prospect theory within research on strategic and behavioural decision-making (Kahneman and Tversky, 1979). The theory emerged as a challenge to economic utility models by proposing that individual agents subjectively frame in their minds an outcome or transaction relative to a reference point (e.g., around losses and gains relative to a situation), whereas in classic utility models, an individual focuses strictly on maximizing wealth. The proposed theory brought with it attendant psychological assumptions regarding the subjective nature of decision-making, including the roles played by framing, irrationality, and heuristic mental shortcuts. Constitutive counterfactual reasoning, as in this example, expands theory in a completely new direction. In a single stroke, it grounds a master frame with a new and logically related set of assumptions, constructs, and causal inferences. Corley and Gioia (2011, p. 19), in their review of highly cited and award-winning papers in the *Academy of Management Review*, noted that these papers' contributions did not stem so much from introducing new constructs 'but much more often by offering a novel approach to integrating prior thought and research into some model or framework that constituted a different way of understanding some phenomenon'. The underlying process, we argue, is based on constitutive counterfactual reasoning, which, in an integrated manner, rewrites and recasts received thought.

In summary, existing work on counterfactual reasoning in management studies tends to highlight their use as part of heuristic reasoning and as a basis for causal modelling. We have added further detail on these kinds of counterfactual reasoning and have highlighted important differences in the scope and utility of counterfactual reasoning for theory development. In addition, constitutive counterfactual reasoning, which has not been mentioned in prior work, presents an important thinking tool that researchers can use to break new theoretical ground.

PUTTING THE TYPOLOGY IN PERSPECTIVE: A REVIEW AND CONTENT ANALYSIS OF MANAGEMENT THEORIES

The overall argument that we have been elaborating is that theoretical contributions emerge on the back of analogical or counterfactual reasoning. This broad conjecture is consistent with recent work in the cognitive science of science (e.g., Thagard, 2012), but its evidence within management studies has been restricted to a few examples (e.g., Boxenbaum and Rouleau, 2011). In this section of the paper, we therefore aim to provide a more thorough evaluation of our typology by assessing whether it accounts for well-documented cases of original theories in management research. The premise is that making any generalizations about the cognitive mechanisms behind theoretical contributions first requires a more systematic look at a larger number of examples.

Sample and Data

Accordingly, we conducted a content analysis of the management theories described in the edited volume *Great Minds in Management* (Smith and Hitt, 2005). The editors of the volume are reputable researchers who selected 24 of the most original and impactful

management theories. They interviewed leading researchers who were either the initiators of these theories or had been intimately involved in their development. The volume's chapters detail the researchers' reflections on their experiences with the processes of theory development (Smith and Hitt, 2005, pp. 2–3). In terms of content analysis, the sampling of chapters in this volume brings three main advantages. The first advantage is that each chapter details the development of a particular theory, from its original inception to its current state, thereby providing an insightful overview of the skeletal structure of each theory. The second advantage is that the authors of each chapter preface the theory with a biographical account of how they arrived at their original ideas, thereby providing insight into each author's cognitive reasoning in support of their development of an original theoretical contribution. The third and final advantage is that the management theories documented in the volume were not chosen by us and, thus, were not biased by any motivation to confirm rather than refute our typology. Yet, the volume undeniably includes a large collection of some of the most significant theories and theoretical advances in the field, from institutional and resource dependence theories to theories on psychological contracts and on fairness and trust.

Coding and Analysis

The analysis of the 24 chapters was done by two evaluators, who independently read each chapter. One of the evaluators is one of the co-authors; the other, an experienced researcher who was otherwise not directly involved in this research. Both used the typology of Table I (as separate categories) for the coding, and they independently classified 22 of the 24 cases in the same categories. The remaining two cases of initial disagreement were then discussed, and, in both instances, agreement was reached on the type of reasoning that best described the theory development. The initial disagreement of these two cases (upper echelons theory and organizational sensemaking theory) triggered a more fundamental insight; namely, that the initial development of a new construct (on the back of a heuristic analogy) may, over time, evolve into a broader theoretical perspective. We will return to this point in the results section below.

Table II lists the 24 theories and the reasoning processes associated with the inception of each theory. We also looked for patterns in our classification. Specifically, we compared the prevalence of particular modes of reasoning across levels of analysis. We report these observations in Table III and discuss our interpretations of these patterns in the text. This comparative analysis also provided further insights on the use of each mode of reasoning, which added further depth to our typology and its role within developing original theoretical contributions.

General Results

The primary result of our categorization is that it demonstrates that our typology has currency in documenting and explaining original theoretical contributions. The classification of these theories and their inception also provides a much more fine-grained picture of the nature and variety of the analogical and counterfactual reasoning that motivate such contributions.

Table II. Applying the typology: content analysis of reasoning modes behind landmark contributions to management studies (from Smith and Hitt, 2005)

Theory	Basis for conceptual change	Type of reasoning
Theories of individuals in organizations (micro level)		
Social cognitive theory (Bandura)	Discontent with behaviourist stimulus-response theories that were discordant with evidence that people learn through observations and social modelling	*Lab-rat counterfactual*: counterfactual challenging of behaviourist causal models with empirical observations subsequently scaled up into an alternative model and theoretical principles
Image theory (Beach and Mitchell)	Inadequacy of expectancy theory (ET) and subjective expected utility (SEU) theory in explaining decision-making in social and organizational contexts	*Constitutive counterfactual*: counterfactual challenging of assumptions of the gambling analogy that forms the conceptual base of ET and SEU; retained the normative focus on the maximization of expected values but added psychological assumptions around biases and organizational factors
Referent cognitions theory (Folger)	Discontent with purely outcome-focused accounts of justice and fairness that underappreciated 'how' events transpire beyond their tangible outcomes or benefits	*Lab-rat counterfactual*: counterfactual argument of neglect elaborated with procedural factors around justice and fairness, and the role of subjective impressions and accountability pressures affecting justice and fairness
Personal initiative theory (Frese)	Critique of the assumption that individuals accept the work as it is defined for them and have little influence on the work situation (beyond the given assignment)	*Constitutive counterfactual*: counterfactual challenging of 'reactive' assumptions into a more pro-active idea and model of individuals as pro-active, persistent, and self-starting (able to initiate action without direction from others)
Upper echelons theory (Hambrick)	Little direct work on executive decision-making despite their empirical significance; author's interests in the behavioural theory of the firm and cognitive psychology	*Heuristic analogy*: analogy applying theories of information processing, bounded rationality, and selective perceptions, which are extended to the strategic situation and personalities of high-level executives
Goal setting theory (Locke and Latham)	Central focus on a single dependent variable of goal setting (as the explanandum) and its link to performance	*Causal counterfactual*: causal modelling whereby competing explanations are sourced or developed and then contrasted and empirically explored. The central focus on goal setting forms a basis for developing causal pathways around antecedents, mediators, and moderators
Job characteristics theory (Oldham and Hackman)	Little direct work on how the properties of organizational tasks affect people's work attitudes and behaviour	*Causal analogy*: theoretical integration of existing work on motivational properties of jobs, expectancy theory of work motivation, and psychological states associated with work and work outcomes

Table II. *Continued*

Theory	Basis for conceptual change	Type of reasoning
Employee commitment theory (Porter, Steers, and Mowday)	Fragmented body of work on commitment and identity in organizations; mostly written from macro and sociological angles	*Constitutive counterfactual*: counterfactual reasoning around default sociological assumptions, leading to the suggestion that organizational commitment concerns both a psychological attitude held by members of the organization and a deeper and more intensive attribute than simple passive loyalty
Psychological contract theory (Rousseau)	Author's interest in employment relationships; some early work on psychological contracts not yet formalized and integrated	*Heuristic analogy*: premise of a perceived mutual agreement between employers and employees drawn from the legal literature on legislation and contracts. In the first instance Rousseau (2005) did not yet develop 'a content model specifying postulates or underlying causal mechanisms' (p. 200) but inferred the basic construct of a psychological 'contract'
Escalation of commitment theory (Staw)	Empirical observations of commitment in politics and organizations with escalating tendencies	*Heuristic analogy*: initial borrowing of cognitive dissonance theory, which provides the basic inference that individuals will continue investing in a losing course of action to avoid admitting a mistake. The analogical inference formed the basis for conceptualizing psychological, social, organizational, and contextual determinants of (escalating) commitment
Expectancy theory (Vroom)	Separate motivation and expectancy theories that disconnected the individual from the (work) environment	*Heuristic analogy*: Initial analogical borrowing of Lewin's concept of force, considering the choices made by an individual as the result of a field of forces in the environment and impacting on the individual. The analogical inference formed the basis for conceptualizing behaviour as a function of person and organizational environment
Organizational-level theories (meso level)		
Organizational learning theory (Argyris)	Preoccupation with linear models of learning whereby the actions taken are affected by feedback rather than by the broader values or principles governing action	*Heuristic analogy*: ideas borrowed from cybernetics, which, when extended, emphasize the ability of individuals to question and reflect upon information from the environment, rather than simply adjust themselves in a linear, determined way

Table II. *Continued*

Theory	Basis for conceptual change	Type of reasoning
Resource-based theory (Barney)	Author's fascination with inequality and advantages between individuals and firms; emerging contributions on firm-level resources and strategies that countered institutional economics	*Causal analogy*: theoretical integration and extension of ideas on resource-based logic in firm strategy, including contemporary and historical contributions
Organizational effectiveness theory (Cameron)	Author's interest in organizational effectiveness as key dependent variable; existence of competing explanations and theoretical perspectives	*Causal analogy*: theoretical integration of various contributions on effectiveness leading to an integration of five models into a contingent framework and typology of competing values
Managerial and organizational cognition theory (Huff)	Author's interest in cognition across individual, group, and organizational levels; opportunities for extending and mainstreaming concepts and methods from cognitive psychology	*Heuristic analogy*: analogy with theories of information processing, bounded rationality, and cognition, which are extended to organizational contexts and strategic decision-making scenarios
Organizational configurations theory (Mintzberg)	Need to develop theory on organizational structures that is elegant, exhaustive, and of direct use to managers	*Heuristic analogy*: use of evolutionary and design thinking to stipulate configurations of organizational structures. The analogical inference formed the basis for a typology, which was then refined through empirical observations
Organizational knowledge creation theory (Nonaka)	Discontent with a linear contingency view of organizations as information-processing systems	*Constitutive counterfactual*: an unease with linear information processing models leads to the extension of principles (e.g., explicit versus tactic knowledge) from phenomenology to fundamentally reframe a theory of organizations as knowledge creation systems
Organizational sensemaking theory (Weick)	Discontent with linear models of cognition and behaviour that disconnect the two	*Heuristic analogy*: sourcing of ideas on cognitive dissonance and enaction from psychology and biology respectively. These analogical inferences provided a basis for the key constructs of post-hoc rationalization and organizational enactment
Theories of organizations in their environments (macro level)		
Stakeholder theory (Freeman)	Lack of consideration of values and norms in economics-based strategy theories and models; limited description of organizational environment	*Constitutive counterfactual*: the idea that managers take stakeholders, not industry, as the basic units of analysis in their thinking and decision-making. The basic counterfactual inference forms the core of the theory

Table II. *Continued*

Theory	Basis for conceptual change	Type of reasoning
Resource dependence theory (Pfeffer)	Inadequacy of rational choice and adaptation theories of organizational effectiveness that emphasize the unconstrained choices of managers	*Constitutive counterfactual*: based on the assumption that an organization is an open (rather than closed) system, the inference that the focus should be on inter-dependencies between organizations and their environments over resources and power
Cognitive institutional theory (Scott)	Inadequacy of rational theories of organizations that under-emphasize the socially constructed nature of both organizations and the fields within which they are positioned	*Constitutive counterfactual*: based on assumptions sourced from work on social construction and 'social fields', the inference that the focus should be on the way in which organizational behaviour and associated resources are anchored in rules, conventions, and culturally constructed and shared schemas
Transaction cost economics (Williamson)	Inadequacy of neo-classic economic accounts of firm and market organization	*Constitutive counterfactual*: the idea that, rather than functioning solely as price mechanisms in markets, firms are also active in coordinating production. This basic inference provided a basis for conceptualizing alternative coordination mechanisms of production, which in turn led to the integration of related ideas from law, economics, and organization theory
Evolutionary economics (Winter)	Inadequacy of explanations about firm behaviour and performance in neo-classic economic theory on profit maximization	*Constitutive counterfactual*: the idea that, rather than assume a fixed role for firms in markets, profit maximization could be modelled with a more realistic sense of managerial behaviour and its impact over time. This inference led to the sourcing of ideas on bounded rationality and routines from the Carnegie school and general evolutionary principles of fitness and adaptation from biology
Phenomenological institutional theory (Zucker and Darby)	Inadequacy of rational theories of organizations that under-emphasized the socially constructed nature of organizations and the fields within they are positioned	*Constitutive counterfactual*: based on assumptions sourced from work on social construction and phenomenology, the inference that the focus should be on the process of institutionalization with institutional structure being constrained by existing institutions and leading to a sedimentation over time

Table II highlights the distinct ways in which analogies can be used as theory building tools, and with such uses varying in terms of the scope and aims of the analogy. It points to the extent to which an analogy is simply used as a heuristic device – as a mirror image to reflect on current assumptions or as a prod towards the development of new constructs and hypotheses – or is imported and integrated as a causal template into the very fabric of management and organizational theory.

The heuristic type of analogical reasoning is prevalent in 8 of the 24 theories across the micro and meso levels of analysis demonstrating its usage. The heuristic analogy, as illustrated by the theory of psychological contracts, sensemaking, and upper echelons theory, focuses at least initially on importing new assumptions into management research and by largely promoting (on the back of an analogical argument) novel theoretical assumptions as a basis for novel constructs. The analogy that sparked the original insight is not always mentioned as part of this promotion and often quickly disappears from view (Agarwal and Hoetker, 2007). The key challenge of building new theory is for this application to generate additional and emergent constructs and explanations that lead it to become an increasingly independent and distinctly managerial or organizational theory (Whetten, 1989). This is essentially what happened in the case of psychological contracts, sensemaking, and upper echelons theory, which evolved from specific constructs to broader theoretical perspectives that subsume a greater variety of constructs around a set of consistent theoretical assumptions.

An important observation in this respect is the way in which incipient empirical observations (e.g., regarding escalating commitment or executive decision-making at the top of an organization) triggered the analogical transfer of assumptions, concepts, and explanatory principles from other literatures and fields that, in essence, formed a basis or stepping stone to flesh out a new theory. Furthermore, besides the triggering role of empirical observations, it is striking how many of these theoretical contributions emerged because of authors' personal interests in a broad range of topics and literatures. This observation highlights the crucial role of personal biography and of systematic forms of reading and reasoning across theories and literatures, often in an intentional and purposive way rather than what is sometimes assumed to be the result of a random variation in ad hoc thought trials (Weick, 1989).

Compared with heuristic analogies, causal analogies are far less prevalent, with its usage demonstrated in only three management theories. These three theories (resource-based theory, organizational effectiveness theory, and job characteristics theory) involve the alignment of causal schemas and constructs from closely associated domains of knowledge in organizational behaviour and organizational economics. The resulting synthesis (Okhuysen and Bonardi, 2011) provides an integrative theory, or theoretical perspective, with an enlarged frame of reference and a novel set of causal inferences. What is striking, however, is that all three cases involve near analogies (Dunbar, 1995) between closely associated domains of knowledge, whereas theories in other categories indicate relatively more distant analogies that borrow ideas and causal schemas from, for example, cognitive psychology, cybernetics, and law. At the same time, even these other source domains are not far from the home turf of management studies. One explanation for these 'near' analogies may be that they demonstrate the pervasive influence of economics, psychology, and sociology, as the backdrop for much of the theorizing in the

Table III. Patterns of reasoning modes across theories and levels of analysis (from Table II)

	Micro theories	*Meso theories*	*Macro theories*
Heuristic reasoning (analogy/counterfactual)	4 (4/0)	4 (4/0)	0
Causal reasoning (analogy/counterfactual)	4 (1/3)	2 (2/0)	0
Constitutive reasoning (analogy/counterfactual)	3 (3/0)	1 (1/0)	6 (6/0)
Analogies	5	6	0
Counterfactuals	6	1	6

field (Agarwal and Hoetker, 2007); so, our search for new ideas is, in turn, constrained and confined to certain domains of knowledge (Okhuysen and Bonardi, 2011).

The constitutive analogy is absent from the list, which may be surprising, in light of the historical role of this mode of reasoning within the management studies, such as the groundbreaking analogies with mechanical and electrical engineering that formed the basis of scientific management and the behavioural theory of the firm. Yet, the absence of the constitutive analogy can be explained by the proliferation of theories in management studies, which, to some extent, forces researchers to draw on analogies in a counterfactual manner so that they mark the contrast and difference by comparisons with prior work (e.g., Boxenbaum and Rouleau, 2011; Locke and Golden-Biddle, 1997; Mantere and Ketokivi, 2013) and 'present existing theories as inadequate in some way or another' (Boxenbaum and Rouleau, 2011, p. 286). A significant number of theories (10 out of 24) are based on constitutive counterfactual reasoning, lending credence to this interpretation and more generally signalling that the existing theoretical landscape represents an important basis for triggering and enabling a particular form of reasoning. For example, strongly held but limited default assumptions form a key target for a form of constitutive counterfactual reasoning that not only inserts a new set of assumptions but also elaborates a new set of explanatory mechanisms. At the macro level of analysis, for example, all six theories emerged on the back of critiques of classic theoretical frameworks that had privileged markets or rational agency (see Table II).

On the other hand, if the apparent questions in a literature or community are not at the level of underlying assumptions but involve the direction of causality or the nature of explanatory mechanisms, they may trigger lab-rat counterfactual reasoning. Two theories (social cognitive theory and referent cognitions theory) exemplify these triggering conditions and this mode of reasoning. What is striking, however, is that in both cases counterfactual reasoning had a broad scope and entailed a reconsideration of an entire causal field (Mackie, 1974). This effect contrasts with today's perhaps more common usage of counterfactual reasoning to specify, for a given theory, ever more detailed causal interaction models. Perhaps because of their broader scope, social cognitive theory, and referent cognitions theory evolved from causal models into separate theories in their own right.

Another significant observation is the absence in the list of spotlight counterfactual reasoning, which is even more remarkable given the recent promotion of this type of reasoning within management studies (e.g., Alvesson and Sandberg, 2011; Oswick et al.,

2011). The reason for this absence may be straightforward. Spotlight-counterfactual reasoning, in general, has little concern with clearly specifying antecedents, consequents, and principles of causal connection; with demonstrating consistency with basic observations or established theoretical principles; or even with configuring and elaborating a coherent set of probable theoretical explanations (Turner, 1996). A researcher may in fact ignore any emerging candidate inferences that are inconsequential for the basic heuristic function of a spotlight counterfactual to suggest novel theoretical assumptions that present an interesting turn away from any previously held assumptions (see, e.g., Alvesson and Sandberg, 2011; Oswick et al., 2011; Weick, 1989). The key point is that spotlight counterfactual reasoning suggests a change in theoretical assumptions and offers a prod in a certain direction, but as Cornelissen and Durand (2012, p. 153) remark, 'by themselves, spotlight counterfactuals are merely a potential starting point for reconsidering theory and research in a particular domain, and the question of whether an interesting thought or reflection translates into progressive theory with explanatory value is far from certain'.

What may be required, therefore, for significant theoretical contributions is a conjoint focus on elaborating alternative causal dynamics and candidate explanations that contrast with default theory. The importance of this assertion is drawn out by the already mentioned significant use of constitutive counterfactuals in theory building that pairs alternative assumptions with an elaboration of constructs and causal or propositional models. Freeman, for example, not only suggested shifting assumptions from stockholders to stakeholders in managerial decision-making but also elaborated on the descriptive and normative implications (Freeman, 2005). Furthermore, compared with spotlight counterfactuals, all eight examples of heuristic reasoning in Table II involve analogies, which may again signify the importance for theory building of not only introducing new or revised assumptions but also drawing on an analogy to another field or domain of knowledge to generate new constructs and causal inferences.

Whilst all six types of reasoning can in principle be used across various levels of analysis, it is noteworthy that heuristic and causal forms of reasoning are prominent in research at the micro level, whereas constitutive counterfactuals, in particular, feature in theoretical contributions at the macro level (Table II). Table III summarizes the type of reasoning in each of the 24 theories and across levels of analysis. One explanation for these patterns may be that, at the micro level, researchers are generally focused on elaborating and refining causal pathways when theoretical assumptions, as axioms, have initially been set and defined. However, they may then, in the course of a research programme, come to question the overall premise or guiding assumptions of a theory, or may seek to expand or revise the assumed causal relationships regarding a particular phenomenon. A significant observation at this level is that causal analogies, despite having been previously ignored as a theory-building tool, are central to significant theoretical advances, such as the resource-based theory of the firm and organizational effectiveness theory.

At the macro level, the predominant use of constitutive counterfactuals may, as mentioned, be in part a historical reflection, with many of these theories emerging on the back of critiques of neo-classical economics and models of rational agency. It may furthermore be apt that theoretical innovation at this level happens through constitutive

reasoning, given that the level of analysis necessitates that researchers work from a comprehensive image that details organizational dynamics in a macro context.

Whilst good reasons may exist for the patterns observed in Table III, we believe that further opportunities may open up for researchers when they leverage the variety of these modes of reasoning, as theorizing tools, across levels of analysis. We discuss these opportunities in the following section and draw out the broader implications of our typology for management researchers.

DISCUSSION: PATHWAYS TO THEORETICAL CONTRIBUTIONS

In the present paper, we conceptualize and detail the basic modes of reasoning that underpin the formation of theoretical contributions within management studies. We also illustrate the centrality of these reasoning processes with an analysis of 24 original theories in management studies. This analysis draws out the practical utility of our typology, which in effect provides researchers with a set of theorizing tools to develop original theoretical contributions.

The first practical recommendation, therefore, is for researchers to become familiar with the typology and to directly use each of the basic modes of reasoning to scope a theoretical contribution within a particular literature. For example, researchers can use heuristic analogies to revise old constructs or define new ones (Weick, 1989). Alternatively, if they are interested in questions of causality concerning a particular phenomenon, they can effectively use lab-rat counterfactuals to tease out plausible reconfigurations of causal relationships (Durand and Vaara, 2009; Tsang and Elsaesser, 2011). Yet another option is to use constitutive counterfactual reasoning to consider alternative all-encompassing theoretical frames that reorder observations, revise explanations, and redirect inquiry around a particular phenomenon (Corley and Gioia, 2011).

Besides employing a particular mode of reasoning within a particular literature, we also encourage researchers to use the typology creatively to further their knowledge in a particular literature. As highlighted by Table III, routinized conventions sometimes surround the use of a particular type of reasoning in a particular literature or research tradition. Spotlight counterfactuals, for example, are core to critical management studies (CMS) as a way of questioning the default assumptions in the mainstream management literature. The downside of this critical tradition, however, is that it is not sufficiently attentive to issues of causality but may be confined to a rhetorical exercise of simply pointing to the potential of an alternative framing (Cornelissen and Durand, 2012). Another illustration of these kinds of conventions is the use of lab-rat counterfactuals of a very narrow scope within deductive quantitative research in strategic management, international business, and organizational behaviour. In such research, the basic assumptions of a theoretical framework that researchers work with are 'given' and not actively considered. Instead, they focus unoriginally on the implications of the framework, which are elaborated in the form of alternative hypotheses.

However, what these instances indicate, we believe, is that there is mileage in moving across the types of reasoning within our typology. This approach may involve researchers effectively shifting between various forms of reasoning, or combining them, with the purpose of advancing management and organizational theory. To illustrate this point,

one of the significant observations in our content analysis of the 24 theories selected by Smith and Hitt (2005) was the absence of spotlight counterfactuals (Table III). Yet, we did find examples of heuristic analogies, such as organizational sensemaking, which initially started as thought experiments around specific constructs but gradually evolved and expanded into full blown theories. We believe this effect signals a trajectory whereby a heuristically derived set of constructs is subsequently extended with a specification of causal relationships and processes linking such constructs. Importantly, this means that an initial heuristic analogy around constructs can be combined with a causal analogy around relationships and processes (thus, moving vertically down our typology). This theoretical elaboration may then go hand in hand with empirical observations, which, in turn, help to ground and further refine the emerging theoretical model. The model may thus gradually evolve into an integrated theory that explains relationships, touches on neighbouring concepts or broader social phenomena, and consists of a set of logically interconnected arguments (Colquitt and Zapata-Phelan, 2007). We label this process one of 'scaling up', as it starts with a focus on rethinking the base theoretical assumptions about a phenomenon, closely followed by a definition of key constructs and the specifying of causal explanations linking these constructs. This process builds on, and incorporates, heuristic thought experiments, but importantly it does not stop there. Instead, researchers combine modes of heuristic and causal reasoning to flesh out an alternative and full-blown theorization.

Whilst the 'scaling up' trajectory focuses on movements that connect reasoning at the level of constructs and causality, we also think lateral moves may be germane to theoretical progress. To put this notion in perspective, Hillman (2009, p. 7) recently criticized theory-driven quantitative strategic management research that may lead to 'too narrow a focus' in relation to a particular phenomenon, and which is likely to 'result in more incremental advancements rather than large-scale improvements in understanding'. In particular, Hillman mentioned her own area of research on corporate governance, where streams of research following agency and resource dependence theories have been running in parallel for decades, but with very little comparison or integration between them. Hillman (2009) hints at the potential of comparing and contrasting the causal models of existing theories on the same subject. This approach involves analogically comparing causal models (Okhuysen and Bonardi, 2011), where a counterfactual emphasis, in turn, helps researchers to zoom in on, and select between, plausible reconfigurations of causal relationships as alternative 'possible worlds' of theoretical explanation (Tetlock and Belkin, 1996). The advantage of systematically comparing and contrasting alternative models of causality is that doing so may lead to an integrated model with a greater scope and predictive ability. Analogically comparing and contrasting alternative causal models also ensures that the entire 'causal field' around a phenomenon (Mackie, 1974) is surveyed and explored through various alternative theorizations.

A further advantage is that comparing alternative causal models inevitably leads researchers to reflect on the viability of the underlying assumptions associated with each model. As such, rather than leaving assumptions out of sight, the comparison provokes reflection on the assumptions and boundary conditions of the emerging synthesis. A good example is the recent study by Ehrnrooth and Björkman (2012) who compare and contrast alternative causal models on the link between investments in human resources

management (HRM) and employee performance and work intensification. A worthy feature of their study is their comparison of causal models associated with both 'positive' and more 'critical' traditions on this relationship, which in turn leads them to posit a more 'integrative' model that 'counteract[s] simplistic win–win versus win–lose assumptions and arguments in the HRM context' (Ehrnrooth and Björkman, 2012, p. 1130). Yet, studies of this kind are very few, and many researchers within HRM and elsewhere continue to operate from within the confines of a particular theory. However, we believe management studies can reap real benefits when researchers manoeuvre between alternative causal schemas and thus between theories, rather than using counterfactual reasoning to specify a given theory and causal schema into ever-more detailed causal interaction models (see also Whetten, 1989).

Finally, another possibility for building theories concerns the application of certain forms of reasoning to unusual levels of analysis. One possibility is for researchers at a micro level to employ constitutive counterfactuals, and for research at the macro level to experiment with heuristic and causal analogies and counterfactuals. At the very least, such experimentation would generate novel ways of thinking and may offer novel candidate inferences compared to the conventional ways of thinking.

These moves across our typology illustrate the power and potential of shifting between, or combining, forms of analogical and counterfactual reasoning, in an effort to advance theory. Whilst our intention with this paper has been more practical in providing tools to researchers, further research could elaborate on this point. Studies may, for example, look at which forms of reasoning, and at which junctures in the development of a literature or field, are most conducive to theoretical advances and knowledge progress. Such research could also explore antecedent and mediating conditions that affect the forms of reasoning in a particular literature, such as the training and background of researchers, the maturity of the field, the formation of schools of thought, or the ability to freely exchange ideas.

Concluding Comments

Our review also has a wider bearing on the organization and institutionalization of management studies, as a research community (see also, e.g., Corley and Gioia, 2011). As part of our review and discussion, we have already stressed the importance of understanding the basic forms of reasoning that underpin theorizing and form the basis for theory contributions, over and beyond a mere concern with novelty and with ways of rhetorically positioning work in such a way as to claim a novel contribution (Alvesson and Sandberg, 2011; Boxenbaum and Rouleau, 2011; Locke and Golden-Biddle, 1997; Oswick et al., 2011). This implies, among other things, a flexibility in shifting between theories and a more inter- or trans-disciplinary perspective between literatures and literature streams (Hillman, 2009) in order to stimulate creative leaps across contexts and, where possible, to add theory and knowledge up into a more coherent and progressive body of knowledge.

At the same time, we realize that the induction and socialization of researchers into the established domains of business and management research or the fundamental disciplines that nurture them (economics, sociology, and psychology) may erect barriers

between literatures and fields, such as strategy, organizational behaviour, international business, entrepreneurship, management, and organizational theory to name a few. The result is a high degree of specialization, which hampers creativity and can, as such, obstruct the development of progressive theory within and across fields (e.g., Cheng et al., 2009; Hillman, 2009). The irony is that, concomitant with an increasing legitimacy for specific disciplines or fields (Hambrick and Chen, 2008), each discipline or field also tends to become more insulated from outside influences, thus limiting the flow of new ideas and significantly increasing the chances of similar or even equivalent theories.

As such, we believe that there is value in an inter- or trans-disciplinary perspective, rather than reaffirming or strengthening the boundaries between disciplines and sub-fields in management studies, or even between the 'indigenous' discipline of management and organization theory and other disciplines in the humanities and social sciences (Oswick et al., 2011). What our review and content analysis teaches us is that great advances and frame-breaking contributions were made by men and women who were free to combine ideas from different disciplines, such as, for example, law, physics, and the biological sciences, and to relate these ideas, in turn, to our understanding of management and organizations. Such lateral thinking is likely to be enabled by the social networks and institutional conditions within which researchers work. But, more to the point, each of these researchers also embodied the creative and active use of the types of reasoning that, we have illustrated, are at the heart of theoretical breakthroughs in our discipline. By the same token, we hope that future generations of management researchers will make good use of the typology in their research in order to break new ground and to advance our theoretical understanding of management and organizations. It is literally only through analogical and counterfactual reasoning that we can move forward.

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