# Metaphors and Theory Building in Organization Theory: What Determines the Impact of a Metaphor on Theory?*

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**A long-standing stream of organizational research suggests that our ability to theorize and reason about organizations is significantly influenced by metaphorical representations of organizations. This study contributes to this research stream by examining how different metaphors influence theory development and academic thinking about organizations. We asked scholars from UK business schools to rate different metaphors in terms of their impact on theory building. We then examined whether, and to what extent, these metaphors (after they had been selected) had helped in clarifying and advancing their understanding of organizations. The results indicate that the ability of a metaphor to advance and clarify theoretical understandings of organizations is based upon (1) the degree to which that metaphor is seen to capture multiple salient features of organizations and (2) the ease with which the metaphor is understood. We discuss the implications of these results for theorizing and research on organizations.**

Previous research has suggested that metaphors constitute one of the primary ways by which scholars frame and understand the world of organizations (e.g. Cornelissen, 2004, 2005; Morgan, 1980, 1983; Weick, 1989). The best known propagator of this view is Gareth Morgan, who suggested a constructionist perspective on the development of theory and knowledge about organizations. He argued that organizations are ambiguous and complex as they cannot be physically apprehended by the senses (as a physical object can, for example). Therefore, we can only know what an organization is by mapping structure and meanings from other domains, such as machines, politics or evolution,

onto it, with each of these mappings providing different insights and understandings of what an organization is (Morgan, 1980, 1983, 2006). In a similar way, Karl Weick emphasized that metaphorical thinking is central to our theorizing about organizations and that metaphors are the conceptual building blocks of organization theory (OT) (Weick, 1989; see also Cornelissen, 2006c). Weick and Daft (1983, p. 72) pointed to the fundamental role of metaphors by asking scholars to reflect upon whether they see organizations as 'input–output systems, resource allocation systems, collections of humans with needs to be met, growth and survival systems, tools in the hands of goal-setters, coalitions of interest groups, [or] transformation systems', and so on. Their point is that each of these theoretical perspectives on organizations is metaphorical.

Indeed, the role of metaphor within theorizing about organizations has become widely acknowledged (e.g. Alvesson, 1993; Baum and Rowley, 2002; Cornelissen, 2004, 2005; Grant and Oswick,

1996; Inns, 2002; Morgan, 2006; Tsoukas, 1991, 1993). Despite these theoretical arguments, however, it has been less clear what the *actual* impact of metaphors is on our theoretical understanding of organizations, and whether this impact varies across metaphors. On the one hand, many organizational metaphors, such as the machine, have had a lasting impact on OT (Baum and Rowley, 2002). The metaphor of seeing an organization as a machine has been connected to early theories of organization including Taylorism, scientific management and technocratic design and has advanced many design and efficiency principles and constructs (e.g. formal structure) that are still being used by scholars today (Guillén, 1997). On the other hand, there are also metaphors that have had little impact, and have since been ignored by scholars (Mangham, 1996; Tsoukas, 1993). Morgan's metaphor of seeing an organization as a spider-plant (Morgan, 2006) is one such example that whilst creative has not had a lasting impact on OT.

Hence, it is important to explore the ways metaphors have had an impact on our theorizing and theoretical understanding of organizations, as well as what characteristics may influence the magnitude of their impact. We are aware of no studies to date that identify whether there are any discernible differences between different metaphors and their impact on the field. Despite the plethora of theoretical arguments, there is little actual empirical research on metaphors in OT, with the large majority of studies being qualitative discussions of single metaphors such as 'organizational identity' (Cornelissen, 2005; Morgan, 2006). By contrast, this study provides insights into the impact of a whole range of different metaphors within OT. We define impact in terms of the conceptual insights, ideas and constructs that metaphors generate and in terms of the clarification of theory that they lead to. To examine whether this impact is conditioned by a number of metaphor-specific characteristics, we measure variables such as the degree to which a metaphor captures important features (which we label *within-domains similarity*) and the degree to which a metaphor is relatively easy to understand (which we term *comprehensibility*).

The study focuses on the impact of a metaphor within our theorizing about organizations. The genealogy of certain metaphors and the social contexts in which they are developed and selected

(see, for example, Cornelissen, 2006a) is beyond the scope of this study. In other words, when we conceptualize the process of theory construction as the development, selection and retention of metaphors (Weick, 1989), our focus is on what happens after the selection stage. We are not addressing the question of *why* certain metaphors are imagined and selected, which has been dealt with elsewhere (Cornelissen, 2006b; Cornelissen, Kafouros and Lock, 2005; Mangham, 1996; Weick, 1989). Instead, we investigate what a metaphor brings to theorizing about organizations once it has been selected.

## Theoretical background

A metaphor can be defined as a mapping of entities, structures and relations from one domain (called the 'source') onto a different domain (referred to as the 'target') (Lakoff, 1993; Morgan, 2006). This study follows Lakoff's (1993) definition of metaphor as referring to 'a cross-domain mapping in the conceptual system' (Lakoff, 1993, p. 203). As such, a metaphor is more than just a figure of speech or rhetorical trope, as it is 'a salient and pervasive cognitive process that links conceptualization and language' (Fauconnier, 1997, p. 168). As a cognitive process of linking the domain of organizations with some other domain, a metaphor may have a cognitive impact on our theoretical understanding of organizations. Some metaphors may have an impact in the form of 'making the unfamiliar familiar'. That is, they serve as an explicatory tool to organize and clarify our theoretical understanding of organizations (Inns, 2002; Oswick, Keenoy and Grant, 2002). Other metaphors may generate completely new ways of seeing, conceptualizing and understanding organizations that were inconceivable before (Cornelissen, 2004, 2005; Inns, 2002; Tsoukas, 1991, 1993). As such, a metaphor may advance new insights and inferences that were non-existent before. In both cases, metaphors lead to cognitive shifts in our theoretical framing and subsequent understanding of organizations. The cognitive impact, however, is markedly different. Whereas the first kind of metaphors facilitate understanding of an already given, independent interpretation of organizations, the second kind of metaphors

constitute a completely novel understanding of organizations (Schön, 1993).

### The impact of metaphors in OT

What is the impact of metaphors on OT? From the cognition and cognitive linguistics literatures on metaphor, we derive hypotheses about the different kinds of impacts of metaphors within OT. We define the impact of a metaphor as forms of cognitive change in our theoretical framing and understanding of organizations. The kind of cognitive change where a metaphor facilitates learning or leads to conceptual clarification is defined as an 'explicatory' impact, whereas the kind of impact where a metaphor leads to conceptual advances and novel insights and inferences is defined as a 'generative' impact. The generative and explicatory impacts together capture the main cognitive effects of a metaphor within scholars' theoretical framing and understanding of organizations (Weick, 1989).

### Preconditions of explicatory and generative impact

If metaphors differ in their explicatory and generative impact, it follows that it is important for us to understand what determines that impact. We argue that there are certain preconditions that determine whether a metaphor has explicatory or generative consequences. Research on metaphors in the cognitive scientific and linguistic communities has pointed to various characteristics of metaphors that contribute to their effectiveness in providing rich and meaningful imagery (see, for example, Fauconnier and Turner, 1998; Tourangeau and Sternberg, 1981, 1982). Based upon these literatures, we examine three important characteristics that may determine the explicatory and generative impact of a metaphor. These characteristics are the so-called *within-domains similarity*, *between-domains distance* and *comprehensibility* of a metaphor (see Table 1). To analyse the first two characteristics, we follow the domains-interaction model of metaphor (Cornelissen, 2004, 2005). This model makes a fundamental distinction between the target and source concepts that are compared in a metaphor on the one hand and the larger semantic domains (as organizations of knowledge) that these concepts are sourced from on the other. *Within-domains similarity* refers to the

*Table 1. Overview of metaphor characteristics*

| Feature | Definition | Operationalization | References |
|---|---|---|---|
| Within-domains similarity | The source concept captures important features of the target concept | The degree to which the source concept captures multiple salient features of the target concept | Fauconnier and Turner (1998), Tourangeau and Sternberg (1981, 1982) |
| Between-domains distance | The distance between the source and target domains in a metaphor | The degree to which the source comes from a domain distant to 'organization' | Blasko and Connine (1993), Fauconnier and Turner (1998, 2002), Tourangeau and Sternberg (1981, 1982) |
| Comprehensibility | The ease with which a metaphor is understood | The degree to which people can readily understand the metaphorical comparison of a source to a target | Katz (1989, 1992) |

perceived similarity between a source and target concept (for example, between 'organizational improvisation' and 'jazz') and is always measured at the level of singular concepts. *Between-domains distance* (or similarity) refers to the semantic distance (or similarity) between the domains that are accessed by a metaphor. For example, it refers to the distance between 'organizations' and 'performative arts' in the case of the 'organizational improvisation as jazz' metaphor and is measured at an aggregate domain level. To give a further example of this distinction, the metaphors of 'organizational identity' and 'organizational learning' both cue a metaphorical comparison between the concepts of an 'organization' (as an entity) and '(individual) identity' and '(individual) learning' respectively. They also cue a comparison between the larger domains of knowledge of OT and human psychology.

Specifically, *within-domains similarity* means that a metaphorical source concept captures important features of a target concept (Chiappe, Kennedy and Chiappe, 2003; Katz, 1989; Tourangeau and Sternberg, 1981, 1982). For example, consider the metaphor of 'organizational identity' where an organization is seen to have an individual identity or a certain character. This metaphor captures important features of organizations in their role of institutional actors (Whetten and Mackey, 2002). It is built on the fact that stakeholders and employees ascribe identities to organizations, just as people generally do with humans (Gioia, Schultz and Corley, 2000). However, it may not quite capture as many of the important features of 'organization' as the concept of 'machine' does. The latter metaphor reflects a long-standing conceptual mapping between the concepts of 'organization' and 'machine' that can be elaborated in many different ways (through specific instantiations as, for example, 'organizational structure', 'capacity', 'control', 'design'). The mapping itself is based on a perceived similarity in the arrangement and completion of work in organizations on the one hand and the operations of a machine on the other. It involves metaphorical comparisons such as 'actions are automated motions', which likens the carrying out of work-related activities to a series of automated and controlled motions, 'organization is a physical structure' which likens abstract unifying relationships between workers to the physical structure of an object such as a

machine that can be felt or manipulated, 'work is object manipulation', which likens all matters of (managerial, administrative and technical) work to the manipulation of an object (such as moving a switch or pulling a lever) and 'products is output' which likens something that is produced (by people) to an object that moves out of a machine. Understood in this way, the comparison between 'organization' and 'machine' shares more similarities than that between 'organization' and 'identity'. In this sense, the 'organization as machine' metaphor has a higher level of *within-domains similarity* than the 'organizational identity' metaphor. We suggest that it is the *within-domains similarity* of a metaphor that leads to high levels of generative and explicatory impact, the proposition being that when a metaphor features a high level of *within-domains similarity* it captures many features of the target and as such will serve to clarify and/or structure our understanding of it (i.e. an explicatory impact). A high level of *within-domains similarity* may also generate a new understanding of the target concept (i.e. a generative impact). The argument here is that a high level of similarity between the target and source concepts provides a basis for further completion and elaboration of the metaphor and the projection of further features from the source to the target. Such completion and elaboration may then lead to a new emergent metaphorical meaning that provides insights and inferences that were nonexistent before (Cornelissen, 2005). Hence, we propose that, for both explicatory and generative impact, *within-domains similarity* is important.

*P1*: The higher the *within-domains similarity* of a metaphor, the higher the generative and explicatory impact of a metaphor.

*Between-domains distance* refers to the distance between the semantic domains that the target and source concepts are drawn from. It has been argued that the *between-domains distance* must be fairly large for a metaphor to be effective because close distances provide little interaction or surprise (Blasko and Connine, 1993; Fauconnier and Turner, 1998, 2002; Katz, 1989, 1992; Tourangeau and Sternberg, 1981, 1982). Morgan (1980, p. 611) referred to this characteristic by discussing the importance of the 'degree of difference between the subjects involved in the metaphorical process'. The 'degree of difference'

to which Morgan refers seems to occupy a central position somewhere between strong similarity (the almost identical) and strong dissimilarity between the domains that the target and source concepts in a metaphor are drawn from. By juxtaposing three contrasting source concepts and their referent domains – namely a saucepan, a tiger and a man – with a boxer, Morgan (1980, p. 611) presented three different domains for metaphorical projection. From it, he concluded that 'if the two subjects brought together [in metaphor] are perceived to be completely unalike, e.g. a boxer and a saucepan, or are seen as almost identical, e.g. a boxer and a man, the metaphorical process produces either nonsensical or weak imagery'. Morgan (1980, p. 612) concluded from this exercise that 'the most powerful use of metaphor arises in instances in which the differences between the two phenomena are perceived to be significant but not total'. In a similar way, Cornelissen (2004) remarked that the distance between the domains that the target and source concepts of a metaphor are drawn from needs to be high, as only such high distance shocks scholars into conceiving of a subject in a completely new way. Cornelissen (2004) argued that a high level of distance between the domains in a metaphor leads to 'semantic anomaly' or a tension or surprise in the metaphorical comparison. Working through such tensions may then lead to new insights and inferences that were inconceivable before; i.e. the metaphor has a generative impact. Little distance between domains, on the other hand, leads to a metaphorical source offering language and frameworks to 'fill in', rephrase or clarify a target, but without providing any new insights or inferences (Cornelissen, 2004). We hypothesize here that higher levels of *between-domains distance* shock us into a novel perspective of a target and this can lead to new inferences being made. As such, *between-domains distance* is particularly associated with generative effects.

> *P2*: The higher the *between-domains distance* of a metaphor, the higher the generative impact of a metaphor (*between-domains distance* is not associated with an explicatory impact).

We define *comprehensibility* as how easy it is to understand a metaphorical comparison (e.g. Chiappe, Kennedy and Chiappe, 2003; Katz, 1989, 1992; Tourangeau and Sternberg, 1981,

1982). A metaphorical comparison between a target and source concept is said to be highly comprehensible if one can construct an interpretation relatively easily. Certainly, scholars may find some comparisons easier to understand than others. For example, 'organization' as 'soap bubbles' may be more difficult to understand than 'organization' as 'machine' (Tsoukas, 1993). Ease of comprehension may arise because the metaphorical statements are instances of more general metaphoric mappings, such as the well-established mappings between 'organizations' on the one hand and machines, organisms and open systems on the other (Baum and Rowley, 2002; Scott, 1998). However, we maintain that the main factor determining *comprehensibility* is how readily people can understand the metaphorical comparison of a source with a target. We propose that *comprehensibility* consequently leads to high levels of generative and explicatory impacts as it provides a stepping-stone for both. It allows scholars to identify how a source not only clarifies our existing understanding of the target but also advances a new understanding of the target.

> *P3*: The higher the *comprehensibility* of a metaphor, the higher the generative and explicatory impact of a metaphor.

## Method

In the current research, we first examined the degree to which certain metaphors led to cognitive change in the form of an explicatory and/or generative impact. We then investigated the conditions that elicited these kinds of impact. The study focused exclusively on cognitive perceptions of scholars concerning six central metaphors-in-use in OT. The study is grounded in a psycholinguistic (or what is often also referred to as cognitive linguistic) perspective on metaphor as a cognitive process that links cognitive conceptualization with the specific use of language. In line with much other work in psycholinguistics (see, for example, Gibbs, 1996; Lakoff, 1993), our methodological approach is therefore aimed at inferring the cognitive impact of metaphors on the basis of scholars' perceptions of the use of these metaphors in their own

work. Specifically, through a survey we investigated the impacts of six central metaphors-in-use within OT ('organizational improvisation as jazz', 'organizational identity', 'organizational behaviour as theatre', 'organizational learning', 'organization as chaos' and 'organization as evolution') and the preconditions for those impacts.

Participants were management and organization scholars working at business schools in the UK. They were asked to rate those metaphors that they had worked with in their own scholarship and research. The six metaphors that scholars were asked to comment on (in so far as they had worked with them) are also 'conventional' metaphors that had already been selected by the community of OT. That is, each of these six metaphors involves conventionalized metaphorical comparisons which, whilst conventional and commonly used, are still recognized and processed as metaphorical readings. The advantage of asking scholars to provide responses on conventionalized metaphors is that their use has become established and their meanings more uniform, whereas 'novel' metaphors may suggest a wide range of potential meanings over time and through repeated use they become conventional and hence more uniform in their meaning (Bowdle and Gentner, 2005). Hence, we can assume that the readings of these six metaphors are also relatively uniform, which enables us to make comparisons between these metaphors in terms of their impact on OT.

Participants were asked to rate each metaphor that they had worked with on a number of scales that related to the explicatory impact ('conceptual clarification') and the generative impact ('conceptual advance') of a metaphor. Participants were also asked to rate each metaphor on *within-domains similarity*, *between-domains distance* and *comprehensibility*. We then tested the key predictions (P1, P2 and P3) that *within-domains similarity*, *between-domains distance* and *comprehensibility* determine the kind and degree of impact of a metaphor.

The sampling for the study involved a convenience sampling of all scholars in 'strategy', 'human resources', 'organization theory', 'organizational behaviour', 'business and information technology' and 'management' at 102 business schools in the UK that are accredited as members of the Association of Business Schools. The website of each of these schools was accessed and email addresses from scholars working in each of these areas were selected from the site. Emails with a link to the on-line questionnaire were sent out in June 2005. The questionnaire involved a cover page with instructions and questions for each of the metaphors mentioned above. As mentioned, participants were asked to answer the questions only for those metaphors that they themselves had worked with in their research or referred to in their writings. In this way, informed answers were provided, ensuring the validity of the overall results. In total, 250 completed surveys were received (a 9.3% response rate over the total number of 2678 emails sent). The completed responses ranged from 31 for the 'organizational improvisation as jazz' metaphor to 146 for the 'organizational learning' metaphor. This difference in responses between the six metaphors may be explained by the fact that we asked scholars to only complete the questions for those metaphors that they had worked with. The 'organizational improvisation as jazz' metaphor is less often used by our sample of scholars than the 'organizational learning' metaphor.

Table 2 summarizes the responses for all of the six metaphors and the descriptive statistics of the construct measures (seven-point scales) that participants were asked to respond on. The *within-domains similarity*, *comprehensibility*, *between-domains distance*, conceptual clarification and conceptual advance variables were conceptualized as aggregate multidimensional constructs (Edwards, 2001), as their items combined to form the overall construct. The items for each construct measure are listed in the Appendix. Each of the construct measures is reliable according to Cronbach-alpha measurements (Table 2).

We measured the *within-domains similarity*, *between-domains distance* and *comprehensibility* of each metaphor ('organizational improvisation as jazz', 'organizational identity', 'organizational behaviour as theatre', 'organizational learning', 'organization as chaos' and 'organization as evolution') and asked participants to evaluate the impacts of these metaphors in terms of whether they have led to conceptual clarification (an explicatory impact) and/or a conceptual advance (a generative impact). These measurements allowed us to examine the support for propositions P1, P2 and P3. The measure of

Table 2. *Descriptive statistics, reliability coefficients and correlations (N = 439)*

| Variable | Mean | SD | Reliability[a] | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|---|
| 1. Within-domains similarity | 4.7 | 1.9 | 0.71 | – | − 0.34** | 0.61** | 0.46** | 0.54** |
| 2. Between-domains distance | 4.3 | 1.8 | 0.80 | | – | − 0.34** | − 0.14** | − 0.28** |
| 3. Conceptual clarification | 4.7 | 1.6 | 0.77 | | | – | 0.64** | 0.57** |
| 4. Conceptual advance | 4.2 | 1.8 | 0.75 | | | | – | 0.31** |
| 5. Comprehensibility | 5.1 | 1.6 | 0.68 | | | | | – |

[a]Cronbach-alpha internal consistency reliability coefficients.
**p < 0.01.

conceptual clarification (see the Appendix) corresponds to the 'explicatory' impact as conceptualized above. This measure captures whether a metaphor has provided a framework through which a target subject in OT can be organized and clarified. The measure of conceptual advance corresponds to the 'generative' impact as discussed. This measure captures whether a metaphor has supplied any new insights and inferences beyond what was previously known about the target.

### Metaphors-in-use

As mentioned, our study focuses on the impact of metaphors within OT, once these metaphors have been selected and are used in theory formulation and testing. As such, we focus on metaphors-in-use and selected six metaphors that in recent years have come to occupy central positions within organizational theorizing and research: 'organizational improvisation as jazz', 'organizational behaviour as theatre', 'organizational identity', 'organizational learning', 'organization as chaos' and 'organization as evolution'. The most important reason for the selection of these six particular metaphors is that all of them are used within theorizing on organizations and organizational behaviour. All of these metaphors have created new images and theoretical representations of organizations and organizational behaviour, and have been referred to, discussed and examined in writings in the field (see, for example, Baum and Rowley, 2002). As well as being in active use in the field, these six particular metaphors were also chosen as they are sourced from different domains, domains that vary in distance from the referent domain of 'organization'. Jazz and theatre are concepts sourced from performative arts, identity and learning come

from human psychology, and chaos and evolution from biophysics and biology. Although each of these metaphors is used and elaborated on in theory and research, there may be marked differences in the impact of each. As we hypothesized, this may depend partly on the distance between the metaphorical source and the target of organizations and organizational behaviour.

The two metaphors of 'organizational improvisation as jazz' and 'organizational behaviour as theatre' liken organizational behaviour, or rather the behaviour of individuals within organizations, to particular forms of performative arts. 'Organizational improvisation' is likened to 'jazz' on the basis of the 'minimal structure' and related degrees of improvisation (i.e. a continuum that ranges from interpretation via embellishment and variation to improvisation) that are seen to be integral to both 'jazz' and 'improvisational work processes' within organizations (e.g. Kamoche, Cunha and Cunha, 2003; Weick, 1998). Likewise, 'organizational behaviour' and 'theatre' are seen to share a basic notion of performativity (Cornelissen, 2004) with the metaphorical lens of a theatre being used to create an understanding of how organizational members 'enact' and improvise roles, interpret 'scripts', work in 'scenes' and 'acts' towards 'plots', use dramaturgical and rhetorical styles, and address an 'audience' (Mangham and Overington, 1987).

The second set of metaphors, 'organizational identity' and 'organizational learning', liken organizations to organisms, specifically human beings, who can 'learn', think and enact 'identities' just like individual human beings. The metaphor of 'organizational identity' is, as mentioned, premised on the observation that stakeholders and employees ascribe (individual) identities to organizations (and perceive them in

corporeal terms), just as people generally do with humans (Gioia, Schultz and Corley, 2000). The metaphor has been elaborated to suggest that just as individuals have (perceived or real) traits or identity characteristics that uniquely identify them, organizations too (in the perceptions of organizational members as well as in their 'own' language and actions) manifest features that express their 'character' and are therefore 'essential', 'distinct' and 'enduring' (e.g. Albert and Whetten, 1985; Cornelissen, 2005; Gioia, Schultz and Corley, 2000). The 'organizational learning' metaphor elaborates the same primary metaphor of seeing an organization as an organism with the metaphorical notion of 'learning as adaptive behaviour'. This was perhaps most eloquently described in Argyris and Schön's (1978) book, *Organizational Learning*, as an attempt to apply ideas of stimulus–response behaviourism (especially the principles of operant conditioning) to organizational learning. Early work by Hedberg (1981) and Gahmberg (1980) also extended stimulus–response models of individual learning to explain the organizational selection of stimuli and choice of responses. That is, the notion of cognitive change or learning is evidenced by the extent of behavioural change or adaptation within the organization in response to stimuli from the external environment, in line with the metaphorical roots of the organizational learning metaphor in operant conditioning (see, for example, Crossan, Lane and White, 1999; East-erby-Smith, Crossan and Nicolini, 2000).

The final set of two metaphors, 'organization as chaos' and 'organization as evolution', liken organizations and their emergence, form and evolution within organizational fields or industries to biophysical and biological processes of 'chaos' and 'evolution'. The 'chaos' metaphor sees organizations as complex adaptive systems or nonlinear dynamic systems within extended environments such as an industry or organizational field (Eisenhardt and Bhatia, 2002; Thiétart and Forgues, 1995). As complex and dynamic systems, organizations are subject to forces of stability and forces of instability that push them toward chaos. Organizations are metaphorically seen to exhibit the qualitative properties of chaotic systems such as self-organizing networks sustained by importing energy, co-evolution to the edge of chaos (Anderson, 1999; Eisenhardt and Bhatia, 2002),

nonlinear interactions within and between organizations, irreversibility, and system evolution based on recombination (Anderson, 1999; Thiétart and Forgues, 1995). The 'evolution' metaphor on the other hand assumes a more linear process of variation–selection–retention (Campbell, 1960), whereby organizations evolve and take form akin to biological processes of evolutionary adaptation. Organizations, as single organisms, are shuffled as units of selection. Variation generates the raw material from which selection is made, and retention processes preserve the selected variation. The evolutionary model of variation–selection–retention has found its way into various bodies of theorizing including population ecology, evolutionary economics, the resource-based view of the firm and institutional theory (see Durand, 2006, for an overview).

Indeed, given the presence of these six metaphors in the field, we found it relevant to identify and examine their perceived impact on theorizing about organizations and organizational behaviour. The following section describes the main results of the survey and is followed by a more specific discussion of the impact that each of these six metaphors has had according to the scholars who have used them.

## Results

Table 2 provides descriptive statistics and correlations (N = 439).[1] For the entire set of responses, the correlations show significant relationships between the characteristics of a metaphor (*within-domains similarity*, *between-domains distance* and *comprehensibility*) and their effects (in the form of conceptual clarification and conceptual advances) upon scholars' conceptualization and understanding of the world of organizations. However, in order to get meaningful interpretations about the nature of explicatory and generative impacts produced by each metaphor, and to examine the characteristics that influence this, we further disaggregated the effects at the level of individual metaphors.

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[1]The total number of responses reflects the fact that individual scholars may have completed questions relating to more than one of the six metaphors. Each N thus represents a full response on questions relating to one metaphor.

Tables 3, 4 and 5 show the results for each of the paired set of metaphors from different source domains (performative arts, human psychology and biophysics). Again, correlations are significant for the effects generated by metaphors from these different source domains and the metaphor characteristics that predetermine those effects. For all metaphors listed in Tables 3, 4 and 5, *within-domains similarity* is correlated with the main effects conceptual clarification and conceptual advance (P1). This suggests that the metaphor-specific characteristic of *within-domains similarity* is a perceived driver of a metaphor's impact in the form of conceptual clarification or indeed a conceptual advance. In other words,

*within-domains similarity* may provide a framework and vocabulary to categorize and clarify existing interpretations of the world of organizations as well as a novel perspective to model and interpret organizations. In addition, *between-domains distance* is not in a significant or consistent way correlated with the main effects, as hypothesized in P2. As such, *between-domains distance*, and relative differences between such domains as performative arts, human psychology and biophysics/biology, is not a factor of importance for the effects of a metaphor, whether these are explicatory or generative impacts.

The *comprehensibility* of a metaphor is correlated with the main effects of conceptual clar-

Table 3. *Correlations for performative arts (jazz (N = 31) and theatre (N = 43)) and organizing*

| | 1 | | 2 | | 3 | | 4 | | 5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Theatre | Jazz | Theatre | Jazz | Theatre | Jazz | Theatre | Jazz | Theatre | Jazz |
| 1. Within-domains similarity | – | – | − 0.35* | − 0.35 | 0.68** | 0.58** | 0.54** | 0.57** | 0.37* | 0.59** |
| 2. Between-domains distance | | | – | – | − 0.35* | − 0.57 | − 0.16 | − 0.21 | − 0.24 | − 0.25 |
| 3. Conceptual clarification | | | | | – | – | 0.77** | 0.72** | 0.39** | 0.59** |
| 4. Conceptual advance | | | | | | | – | – | 0.39** | 0.36* |
| 5. Comprehensibility | | | | | | | | | – | – |

*p < 0.05.
**p < 0.01.

Table 4. *Correlations for human psychology (identity (N = 89) and learning (N = 146)) and organization*

| | 1 | | 2 | | 3 | | 4 | | 5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Identity | Learning | Identity | Learning | Identity | Learning | Identity | Learning | Identity | Learning |
| 1. Within-domains similarity | – | – | − 0.40** | − 0.38** | 0.53** | 0.63** | 0.42** | 0.53** | 0.60** | 0.58** |
| 2. Between-domains distance | | | – | – | − 0.49** | − 0.38** | − 0.23* | − 0.19* | − 0.32** | − 0.29** |
| 3. Conceptual clarification | | | | | – | – | 0.58** | 0.65** | 0.62** | 0.64** |
| 4. Conceptual advance | | | | | | | – | – | 0.39** | 0.41** |
| 5. Comprehensibility | | | | | | | | | – | – |

*p < 0.05.
**p < 0.01.

Table 5. *Correlations for biophysics (chaos (N = 46) and evolution (N = 84)) and organization*

| | 1 | | 2 | | 3 | | 4 | | 5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Chaos | Evolution | Chaos | Evolution | Chaos | Evolution | Chaos | Evolution | Chaos | Evolution |
| 1. Within-domains similarity | – | – | − 0.29 | 0.31** | 0.61** | 0.69** | 0.36* | 0.52** | 0.41** | 0.57** |
| 2. Between-domains distance | | | – | – | − 0.27 | − 0.31** | − 0.17 | − 0.12 | − 0.18 | − 0.29** |
| 3. Conceptual clarification | | | | | – | – | 0.51** | 0.71** | 0.47** | 0.58** |
| 4. Conceptual advance | | | | | | | – | – | − 0.01 | 0.36** |
| 5. Comprehensibility | | | | | | | | | – | – |

*p < 0.05.
**p < 0.01.

ification and conceptual advance, with the exception of the correlation performed for the chaos metaphor. As such, P3 receives support, although the findings are less robust than those in support of P1. *Comprehensibility* is also quite strongly correlated with the *within-domains similarity* of a metaphor, which provides further, albeit indirect, support for the importance and strength of *within-domains similarity* as a perceived determinant of a metaphor's effects. Finally, the effect of conceptual clarification is significantly correlated with the other effect of a conceptual advance, which may suggest that they are closely related impacts of a metaphor. In other words, drawing a clear distinction between the explicatory and generative impacts of a metaphor may be difficult, as these may be closely related.

In summary, *within-domains similarity* appears as an important perceived determinant of both 'generative' effects (in the form of a conceptual advance) and 'explicatory' effects (by providing conceptual clarification, a framework and vocabulary for talking about organizations). This study provides a first understanding of the impact of metaphors from different source domains, and of the perceived drivers of that impact. In particular, it demonstrates that the satisfaction of the *within-domains similarity* by a metaphor is perceived as important for its impact. Indeed, a high level of *within-domains similarity* may be seen as functional by scholars as it provides them with a shared set of salient features between a target and source concept. Such a shared set of salient features provides a base for comparison and may increase the likelihood that a metaphor is insightful and revelatory of the target concept of organizations within OT.

When we focus more specifically on the six metaphors that featured in our study, we find some differences in the scores for *comprehensibility* and *between-domains distance*, although t-tests do not establish any significant differences. Scores on *between-domains distance* are slightly higher for the 'organization as chaos' and 'organization as evolution' metaphors in comparison with the other four metaphors. The 'organization as chaos' metaphor also scores lower on the *comprehensibility* scale than other metaphors.

All of the six metaphors received moderate to high scores on *within-domains similarity* (ranging from a mean of 3.7 for 'organizational identity' to a mean of 5.5 for 'organizational behaviour as theatre') and on *comprehensibility* (ranging from a mean of 4.4 for 'organization as chaos' to a mean of 5.6 for 'organizational behaviour as theatre'). For each of these metaphors, as mentioned, *within-domains similarity* and *comprehensibility* are significantly correlated with the main effects. Indeed, on this evidence, each of these six metaphors has been of conceptual use within OT, and they are also likely to continue to be used as guiding images in theorizing and research.

## Discussion

In the present research, we set out to study the impact of metaphors within theorizing about organizations. The study started with the assumption that although metaphors play a fundamental role in OT, different metaphors may turn out to have a different impact on OT. We reasoned that those differences in impact may be the result of certain characteristics of metaphors such as the degree to which a metaphor captures important features of organizations and the degree to which a metaphor is relatively easy to understand.

Our data analysis found significant results for the link between the *within-domains similarity* and *comprehensibility* of a metaphor on the one hand and its impact as an explicatory tool to organize and clarify our theoretical understanding of organizations on the other. We also found a significant link between the *within-domains similarity* and *comprehensibility* of a metaphor and its impact of generating or advancing new insights that were non-existent before.

These different kinds of 'explicatory' and 'generative' impact were also strongly correlated with one another. This suggests that they should not be seen as mutually exclusive – as has often been the case in the literature on organizational metaphors (Oswick and Jones, 2006; Oswick, Keenoy and Grant, 2002) – but as closely related. For example, 'organizational identity' has generated a new way of framing and understanding how individuals make sense of the organization that they work for. Instead of using ideas around commitment and trust towards the organization, the metaphor advanced

the idea that individuals conceive of their organization as having an identity, with the related inference that perceptions of an organizational identity guide individuals' sensemaking (e.g. Brickson, 2005; Gioia and Thomas, 1996). At the same time, 'organizational identity' has also provided a new language and framework to organize research on individual and collective sensemaking within organizations (e.g. Gioia, Schultz and Corley, 2000). Hence, as this metaphor illustrates, a metaphor may have both 'explicatory' and 'generative' impacts, and these impacts may be closely related.

What do these findings mean for theory building within OT? One important implication of our findings is that the *within-domains similarity* and *comprehensibility* of a metaphor appear to matter. Metaphors that satisfy these characteristics are seen to have greater explicatory and generative impacts. Weick (1989, p. 529) argued that 'theorists depend on pictures, maps, and metaphors to grasp the object of study' and 'have no choice [in this], but can be more deliberate in the formation of these images and more respectful of representations and efforts to improve them'. It appears that, in scholars' own thinking, the notion of the *within-domains similarity* of a metaphor is central to their assessment of what makes a metaphor meaningful and of value (in an explicatory or generative sense) for theorizing. This would also suggest that when metaphors have little or no *within-domains similarity* (e.g. the metaphor of seeing an 'organization' as 'soap bubbles') (Tsoukas, 1993) they are seen to fall short of being meaningful. Such metaphors may then be perceived as theoretically deficient and as having a limited capacity to generate intelligible theoretical insights and research pathways.

The theoretical contribution is that our study suggests that *within-domains similarity*, and the ability to construct correspondences between the concepts compared in a metaphor, is perceived as an important determinant of the impact of a metaphor and its perceived value for theorizing and research. This finding builds on and complements Morgan's (1983) well-known prescription that a middle range between 'completely unalike' and 'completely identical' concepts in a metaphor produces the greatest insights. Increasingly higher levels of similarity between two concepts may produce greater explicatory and generative im-

pacts. Nevertheless, following Morgan, this may exhibit a curvilinear relationship as this association may break down close to the situation where concepts are very similar or identical.

The findings also complement recent linguistic research by Cornelissen and his colleagues (Cornelissen, 2004, 2005; Cornelissen, Kafouros and Lock, 2005). They established that a combination of *within-domains similarity* and *between-domains distance* is required for apt and effective metaphors. Although the present study uses a different method from Cornelissen, Kafouros and Lock (2005), it similarly identifies the perceived importance of *within-domains similarity* as a primary predeterminant of a metaphor's impact. Contrary to Cornelissen, Kafouros and Lock (2005), this study also suggests that the *between-domains distance* of a metaphor does not need to be particularly high, as a 'close' distance between a domain such as theatre or jazz and organizations may already lead to meaningful and effective metaphorical comparisons. In the section below, we elaborate further on the significance of these results for theorizing in OT but first we briefly discuss the limitations of our study.

## Limitations

The study has several limitations. First, the survey relies upon psychological measures and scholars' perceptions of the impact of a select set of metaphors in OT. This measure may provide an account of the cognitive impact of metaphors on theorizing about organizations. However, no single method provides a comprehensive account of how people understand all kinds of metaphorical language, given all the temporal moments of understanding (comprehension, recognition, interpretation, appreciation and use) and contexts (e.g. face-to-face, group and society) that are discussed by scholars. The method adopted here may explain comprehension and the perceived (cognitive) impact of metaphors, whereas other linguistic or discourse analysis methods may be better at explaining metaphor recognition, appreciation, and actual development and use.

Second, as with all research methods, there are also limitations to the strategy of trying to make generalizations on the basis of a single set of psychological survey data. The primary limitation is one shared by much psychological and linguistic research, namely the problem of pro-

viding only a motivated explanation for the use of metaphors. Further experimental psychological research is therefore worthwhile to corroborate our research findings and in particular for testing and refining our results regarding the predeterminants and impacts of metaphorical images of organizations.

Third, the analysis only focused on scholars' perceptions of six metaphors-in-use, rather than tracing the genealogy of certain metaphors like 'organizational improvisation as jazz' and their appropriation in different schools of thought and within different communities of scholars (see, for example, Cornelissen, 2006a, 2006c; Maasen and Weingart, 2000). As explained earlier, we examined the impact of metaphors once these are selected by scholars. Therefore, questions on the (historical and social) development of metaphors as well as the sociological dynamics involved in their selection and retention remained unexplored. In particular, questions on the metaphorical imagination process (e.g. whether heterogeneity and creativity in thought trials lead to 'better' metaphors) and its link to the selection and use of a metaphor (Cornelissen, 2006c; Weick, 1989) present important avenues for further research.

### Implications

The findings have several implications for scholarship in relation to organizational metaphors and OT more generally. The first implication involves the role and use of metaphor within OT. As a starting point, we assumed that metaphors play an important role as vehicles of theory construction and knowledge generation (Weick, 1989). Indeed, the analysis suggests that metaphors may have both an 'explicatory' impact (where they improve an already existing understanding of organizations) and a 'generative' impact (where a metaphor constitutes a completely novel understanding of organizations). Hence, rather than assuming that metaphors have either an explicatory (Oswick, Keenoy and Grant, 2002) or generative (Cornelissen, 2005) impact, they may have both. Furthermore, the extent to which metaphors have these impacts depends on two characteristics of a metaphor, its *within-domains similarity* and *comprehensibility*.

A second implication involves the development of theorizing on organizations. Previous studies have identified a number of dominant root metaphorical images of organizations that have guided research into conceiving of organizations as, for example, organisms, systems, machines, evolution and so on (Cornelissen, Kafouros and Lock, 2005). On this evidence, the development of OT depends on the framing and inferential power of a range of well-established metaphors. These guide our reasoning and knowledge on organizations. In doing so, they simultaneously enable and constrain our scientific endeavours. Consequently, theoretical advances on organizations are to a large extent dependent upon the inferential power of a range of metaphors, including the six metaphors in our study. The question that follows from this is what determines the impact of metaphors on theoretical development. Our research, complementing the works of Morgan (1980, 1983) and Cornelissen (2004, 2005, 2006c; Cornelissen, Kafouros and Lock, 2005), suggests that the most important characteristics of a metaphor are those of *within-domains similarity* and *comprehensibility* (rather than the *between-domains distance*). As such, we argue that the characteristic of *within-domains similarity* may be important for scholars to consider at the level of a metaphorical image, whether an image is meaningful and has the potential to advance theory by generating novel insights or by clarifying existing interpretations of organizations. Hence, this characteristic of a metaphor may be used more generally by scholars to select and develop new meaningful conceptualizations of organizations and to advance the body of knowledge in the field (rather than using other principles including the *between-domains distance*). In other words, scholars can increase the potential impact of their theoretical constructs by selecting metaphors that capture important and salient features of organizations (*within-domains similarity*). When a metaphor captures multiple salient features, it tends to be more representative and theoretically more insightful of organizations, and can also be more easily completed and elaborated into an emergent metaphorical meaning. Based on such assessments, scholars may then be able to select those metaphors that guide them towards plausible (and away from implausible) paths, that explicate or clarify an organizational subject, generally break new ground, and generate conceptual advances that were inconceivable before.

## Appendix. Measures used to capture constructs

| Construct | Measure used |
| --- | --- |
| Within-domains similarity | To what extent<br>(1) has it been easy to create correspondences between the 'organizational improvisation' and 'jazz' concepts?<br>(2) have you experienced difficulty in seeing any resemblance between the subjects of 'organizational improvisation' and 'jazz'? (reverse coding)<br>(3) do you feel that the 'jazz' concept captures important features of 'organizational improvisation'?<br>(Seven-point scale ranging from 'to a limited extent' to 'to a great extent') |
| Between-domains distance | To what extent<br>(1) do you feel that the entire domains ('organization theory' and 'performative arts') from where the 'organizational improvisation' and 'jazz' concepts are sourced are rather alike? (reverse coding)<br>(2) do you consider these two domains ('organization theory' and 'performative arts') as rather distant in themselves?<br>(3) do you feel that these two domains ('organization theory' and 'performative arts') trigger very different associations?<br>(Seven-point scale ranging from 'to a limited extent' to 'to a great extent') |
| Conceptual clarification | To what extent has this metaphor<br>(1) organized existing knowledge on 'organizational improvisation'?<br>(2) (re)emphasized features of 'organizational improvisation' that were already known?<br>(3) led to conceptual clarification?<br>(4) provided a useful new framework through which the act of 'organizational improvisation' can be understood?<br>(Seven-point scale ranging from 'to a limited extent' to 'to a great extent') |
| Conceptual advance | To what extent has this metaphor<br>(1) led to inferences and testable hypotheses about the subject of 'organizational improvisation'?<br>(2) shown new features of 'organizational improvisation' that were previously unknown?<br>(3) offered new insights of 'organizational improvisation' that were inconceivable before?<br>(Seven-point scale ranging from 'to a limited extent' to 'to a great extent') |
| Comprehensibility | To what extent has this metaphor<br>(1) made plain sense?<br>(2) been easy to comprehend?<br>(Seven-point scale ranging from 'to a limited extent' to 'to a great extent') |

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