BUILDING NOVEL SUPPLY CHAIN THEORY USING "METAPHORICAL IMAGINATION"

VICTORIA STEPHENS
University of South Wales

LEE MATTHEWS
University of Nottingham

JOEP P. CORNELISSEN
Erasmus University Rotterdam

HEFIN ROWLANDS
University of South Wales

In this paper, we explore how supply chain theorists can engage with metaphorical imagination to develop supply chain theory. Our main purpose was to provide additional useful guidance on how scholars can approach the method of metaphoric transfer. To do this, we build on previous work on the metaphoric transfer method and develop the Metaphoric Transfer Pathways framework. The framework offers two novel approaches to working with metaphors that will help theorists to best leverage the theorizing potential of metaphors in their work. We also develop a set of evaluation criteria which can help scholars to choose which approach to metaphoric transfer to adopt and to maximize the productivity of metaphors used within their theorizing efforts. Our paper synthesizes the existing literature on metaphorical imagination in a novel way to provide accessible guidance for those looking to work with metaphor and to maximize their contribution toward developing novel supply chain theory.

INTRODUCTION

There have been a number of calls for the field of supply chain management (SCM) to enter the maturation stage of development and become less dependent on theories borrowed from other fields (Carter, 2011; Carter, Rogers & Choi, 2015; Flynn, 2020; Flynn et al., 2020). To develop indigenous supply chain theories, we will need to reimagine supply chain phenomena and what is currently considered to be a supply chain phenomenon. To do this, we need to step outside of the theories we have traditionally used and, perhaps most challenging of all, question many of our assumptions. For some supply chain scholars,

this will involve rethinking the theorization process itself and to see theory building as a creative, imaginative process (Shoemaker et al., 2004; Weick, 1989).

Working with metaphors has long been valued as a means to stimulate creativity and imagination within the theorizing process, both within the humanities and social sciences generally (Boyd, 1993; Swedberg, 2020) and the field of business and management in particular (Andriessen & Van Den Boom, 2007; Cornelissen, 2005; Morgan, 1997), including the fields of operations management (Foropin & McLachlin, 2013; Garud & Kotha, 1994) and supply chain management (Chen et al., 2013). But, as of yet, there are too few examples of metaphors being explicitly and rigorously

adopted to support supply chain theorization. This may be due to a lack of accessible guidance on how supply chain scholars can identify and maximize the value of metaphors in their theorizing activities.

In this paper, we present metaphorical imagination as a creative methodology that offers supply chain theorists the opportunity to be more consciously and consistently creative in their theorizing activities (Cornelissen & Durand, 2014; Weick, 1989; Weick, 1995). Metaphors have been deemed powerful tools that "propel thoughts" and "catalyze ideas" and thus keep scholarly thoughts moving forward (Cornelissen & Durand, 2014: 1002). There is a long, but rarely acknowledged history of working with metaphors within the field of supply chain management (Foropin & McLachlin, 2013): indeed, the metaphor of a chain is present in the very name of the field. The methodology of metaphorical imagination is a means for supply chain scholars to build on this tradition and increase the productivity of metaphors used within their theorization.

There are a wide variety of methods for working with metaphors (Inns, 2002), but in this paper, we focus on the method of metaphoric transfer (Cornelissen, 2002; Montuschi, 1995), which has previously been used in supply chain management to theorize buyer–supplier relationship dissolution using the metaphor of divorce (Chen et al., 2013). Our paper aimed to build on and extend previous work on the metaphoric transfer process to show how metaphors can contribute toward novel supply chain theorization. We shape our discussion specifically in terms of the idea of a metaphor's productivity, defined as its ability to produce novel insights.

Unfortunately, for supply chain theorists interested in working with metaphor, there is a lack of process-based guidance on how to engage with metaphoric transfer, both in the literature on metaphor in general and in the literature on supply chain theorizing in particular. This is the gap that this paper seeks to address. We do this through the development of the Metaphoric Transfer Pathways framework, which is the main contribution of the paper. This framework builds on Chen et al.'s (2013) supply chain paper on metaphoric transfer by presenting two novel approaches to working with metaphor that will help theorists to best leverage the theorizing potential of metaphors in their work. The two novel approaches are "re-enlivening of dormant or dead metaphors" and "searching for novel metaphors from distant domains," and we provide evaluation criteria that will help supply chain theorists choose which approach metaphoric transfer to adopt. Our paper synthesizes the existing literature on metaphorical imagination in a novel way to provide accessible guidance for those looking to work with metaphor and to maximize their

contribution toward developing novel supply chain theory.

THEORY BUILDING AS "METAPHORICAL IMAGINATION"

Metaphorical imagination is the often messy process through which scholars consciously work with metaphors within their theorization efforts and is based on the process rather than the product view of theorizing (Halldorsson, Hsuan & Kotzab, 2015; Rindova, 2011). It is grounded in an epistemology that sees metaphors as cognitively fundamental because metaphors are central to how we make sense of the world (Alajoutsijarvi, Eriksson, & Tikkanen, 2001; Lakoff & Johnson, 1999; Schon, 1993). The process of metaphorical thinking is often unconscious and lacking in rigor, which is unsatisfactory from the perspective of the supply chain scholar. Thus, the key question for this paper is how we can more effectively work with metaphors to produce novel supply chain theory.

Metaphors are images taken from one domain (the "source" domain) and used in another domain (the "target" domain), with domain defined as a field of thought or activity (Tsoukas, 1993). The value of introducing new metaphors into supply chain theorization relates to the metaphor's ability to generate new insights, and not simply to offer new terminology for existing supply chain phenomena (Cornelissen, Kafouros & Lock, 2005). An example of using metaphor to produce novel insights is Tate et al.'s (2019) recent paper on business ecosystems and biomimicry within the circular economy. They took the metaphor of mycorrhizal (root-fungus) networks within forest ecosystems from the source domain of biology and applied it to the target domain of business ecosystems. In so doing, they produced counter-intuitive conjectures concerning the importance of organizations which have "scavenging" and "decomposing" capabilities within circular industrial supply networks.

In order to be able to maximize the productivity of metaphors in supply chain theorizing, it is important to acknowledge that metaphors have a life cycle. The life cycle of a metaphor consists of the following stages (Van den Bulte, 1994): live, dormant, and dead. A live metaphor is an image that is easily identifiable as a metaphor. Typically, these are new or novel metaphors that have an obvious semantic anomaly, for example, Tate et al.'s (2019) mycorrhizal networks metaphor. By contrast, dead metaphors are those concepts that have become so familiar and are so habitually used in our theoretical vocabulary that they are no longer easily recognized as metaphors, and have become taken for granted as literal terms (Cornelissen,

2002) (e.g., supply chain *transparency)*. Therefore, between live and dead a metaphor can be dormant. A dormant metaphor can either progress toward death over time or, as we will argue, be re-enlivened through conscious reconnection with the original source domain.

Approaches to Metaphoric Transfer: "Searching for Live Metaphors from Distant Domains" and "Re-enlivening Dormant or Dead Metaphors"

Metaphoric transfer is one method of metaphorical imagination that has been used within supply chain scholarship to consciously leverage a metaphor within the theorization process (Chen et al., 2013). Metaphoric transfer is a formal method of theorizing consisting of four activities: transposition, interpretation, correction, and spelling out (Cornelissen, 2002; Montuschi, 1995; Schön, 1965). The identified metaphor is transposed to the new target domain (transposition) where interpretative work is done to produce novel conjectures (interpretation). These conjectures are then corrected through being tested empirically (correction), and finally, the theoretical implications of the metaphor are spelled out to complete the metaphoric transfer process (spelling out). The literature on how to conduct metaphoric transfer is reasonably well developed, but it is less clear how theorists should identify the metaphors to be transposed in the first place. More clarity is also needed on how the metaphoric transfer method can be adapted to theorists working with metaphors that have previously been transposed but have not yet been fully exploited. These are significant gaps in the literature that we will address in the rest of the paper. We start by presenting two novel approaches to metaphoric transfer, "searching for live metaphors from distant domains" and "re-enlivening dormant or dead metaphors."

Searching for Live Metaphors from Distant Domains

Live metaphors are new images that offer novel lenses for theorizing supply chain phenomena. As they represent unconventional representations of supply chain phenomena, live metaphors are useful to supply chain scholars looking to theorize novel and previously unexamined supply chain phenomena or to theorists looking to theorize supply chain phenomena from a novel perspective and see them with fresh eyes. Theorists may be tempted to work with live metaphors that seem to have high levels of verisimilitude to supply chain phenomena as currently theorized (Chen et al., 2013), but these may not be the best source of novel conjectures. Live metaphors are more likely to produce novel theoretical conjectures if they come from distant source domains, that is, domains that are perceived to be conceptually very

different to the target domain (Cornelissen, 2005; Morgan, 1980). We therefore propose that supply chain scholars consciously seek out metaphors from domains which are perceived to be more distant from the field of supply chain management. Distant domains that have been used in supply chain management include the domains of biology, as seen in the work of Tate et al. (2019), theater (Stuart & Tax, 2004), geology (Lamming et al., 2001), and evolutionary biology (Matos & Hall, 2007). We believe these articles should be used as exemplars by theorists looking to work with distant metaphors.

The ideal result is that the new metaphor will become the basis of programmatic supply chain scholarship. However, this requires the metaphor to be accepted by the supply chain community and this can be difficult to achieve. As Ketokivi, Mantere, and Cornelissen (2017: 644) suggest, "most novel analogies never gain currency, … [only a] few become part of the institutional foundation of an entire research program." An example of a metaphor that has gained currency within the supply chain is that of marriage. The metaphor was fundamental to the paradigm shifts within the fields of marketing and purchasing that led to buyer–supplier interactions being theorized using novel (for the time) concepts, such as trust, commitment, and sharing (Ambrose, Marshall & Lynch, 2010; Morgan & Hunt, 1994).

Novel metaphors from distant domains can also support problematization approaches to theorization. A number of recent papers in the *Journal of Supply Chain Management* have argued for supply chain scholars to incorporate problematization within their theorization processes in order to build novel theories (Hardy, Bhakoo & Maguire, 2020; Matthews et al., 2016; Touboulic, McCarthy & Matthews, 2020). Theories are constrained by the assumptions upon which they are based (Bacharach, 1989) and theorists engaged in problematization seek to identify and critically evaluate those assumptions in order to stimulate novel research questions and conceptual approaches (Alvesson & Sandberg, 2011). Problematization requires scholars to adopt a counterstance to their preferred theoretical positions, but this can be a challenging process. Novel metaphors from distant source domains have the potential to help supply chain scholars to create a counterstance by helping them to step outside of their habitual ways of theorizing supply chains.

An example of a live metaphor that has been transferred from a distant domain to the study of supply chains is that of dancing. Wilkinson and Young (1994) believed that the dancing metaphor was better able to capture the mix of cooperation and competition within buyer–supplier interactions than the more commonly used metaphor of marriage. Using the

dancing metaphor, they presented a typology of eight dances that captured differing mixes of cooperative and competitive interactions, such as line dancing (low cooperation, low competition), ballet (high competition, high cooperation), and cha-cha-cha (high cooperation, low competition). Needless to say, the dancing metaphor has not gained saliency within supply chain theorizing, which speaks to the difficulties of gaining community acceptance for a new metaphor within a field, especially if introduced from a distant domain.

This does not mean that such novel metaphors have nothing to contribute toward building novel supply chain theories, however. The dancing metaphor is potentially of use to theorists taking a problematization approach to the theorization of supply chain linkages using the metaphor of marriage. The dancing metaphor helps to expose some of the problematic assumptions that have been smuggled into strategic relationships literature, such as the assumption that all supply chain linkages do (and should) progress toward a mature, stable state of long-term commitment that supposedly characterizes *happy marriages* (Wilkinson & Young, 1994). Ramsay and Caldwell (2004: 81) argued that metaphors of cooperation and partnership in the context of buyer–supplier interactions are imbued with inherently positive connotations which lend them an "unwarranted, intrinsic approval." By providing a counterstance to the relationships metaphor, the dancing metaphor shows the role that novel metaphors can play in problematizing dominant metaphors and creating new assumption grounds for further theorization.

Re-enlivening Dormant or Dead Metaphors

While live metaphors from distant domains may provide the most significant opportunities for developing novel conjectures, the most common type of metaphor that supply chain theorists are likely to work with are dead or dormant metaphors. To increase the productivity of these metaphors for supply chain theorizing, theorists need to make these metaphors live once again, that is, see them as metaphors once again. Theorists will thus require a method of re-enlivening metaphors. Given the difficulty of finding novel metaphors that will gain wide acceptance by scholars within the supply chain community, re-enlivening existing metaphors may be one of the most effective ways in which supply chain scholars can leverage metaphorical imagination within their theorizing activities.

A fruitful approach for re-enlivening metaphors is for supply chain scholars to reconnect with the original source domain from which the metaphor was taken (Schoeneborn, Blaschke, & Kaufmann, 2012).

This involves actively identifying and exploring the source domain for underutilized or newly developed knowledge that may stimulate new, or update existing, supply chain conjectures. To illustrate how re-enlivening metaphor can contribute toward theorization with supply chain management, we present the example of *infidelity*, which has been used to re-enliven the metaphor of interpersonal relationships.

The relationships metaphor has been the basis of programmatic research in supply chain management since the 1990s. Over the decades, it has facilitated the transfer of concepts and theories from the knowledge domains of sociology, interpersonal relationships, and marital studies. But it has been so successful as a metaphor that it has become normalized in the theorization of supply chain linkages, with many supply chain scholars scarcely seeing it as a metaphor. It can thus be characterized as a dormant metaphor.

By re-enlivening the supply chain relationships metaphor through actively reconnecting it with its source domain of interpersonal relationships, new or underexplored supply chain phenomena are highlighted, opening up new pathways for theory development. An example of re-enlivening the interpersonal relationships metaphor is the work done on theorizing buyer–supplier interactions in terms of *infidelity* (Leonidou et al., 2017). Leonidou et al. (2017) drew on the concept of infidelity from the field of marital studies, particularly the work done by social psychologists. In so doing, they were able to conduct empirical work on buyer–supplier interactions based on scales developed for the study of dating (Mattingly et al., 2010), marriages (Atkins & Kessel, 2008), and mate retention (Shackelford, Goetz & Buss, 2005). The empirical work conducted led to new insights about infidelity within supply chains, such as that infidelity can lead to punishment through punitive actions or can be resolved constructively through reassessment measures, which include conflict management and even forgiveness (Leonidou et al., 2017). Through work such as this, the metaphor of interpersonal relationships becomes live once again, and new insights can be produced.

"Searching for novel metaphors from distant domains" and "re-enlivening dormant or dead metaphors" are alternative approaches to the metaphoric transfer process. However, it will be difficult for supply chain scholars who are new to working with metaphor to determine which of the approaches should be taken. The choice of metaphoric transfer approach will ultimately depend on the productivity of the metaphor, that is, its potential for producing novel conjectures. We thus present a set of criteria by which to evaluate the (potential) productivity of a metaphor.

CRITERIA FOR EVALUATING THE PRODUCTIVITY OF METAPHORS

A metaphor is considered productive if it can contribute toward the production of novel conjectures. However, for supply chain scholars who are new to working with metaphors, or scholars who are looking to work with metaphor more rigorously, establishing the productivity of a metaphor will be a challenging process. Drawing on the considerable body of knowledge about the use of metaphors in organization and management theorizing, we articulate a set of three evaluation criteria that can guide supply chain theorists' work with metaphors.

1. Aptness—is the metaphor believable?

The first criterion is that the source metaphor is deemed to be sufficiently apt for the study of the supply chain topic under investigation. Chen et al. (2013) articulated the concept of aptness in terms of three levels of similarity—ontology, analogy, and identity. Ontology is the similarity between the features of the source concept and the supply chain phenomenon being theorized. Analogy concerns the similarity of the relations that exist among the ontological features of both the source and target concepts. Through establishing isomorphism in terms of ontology and analogy, it becomes possible to establish a common identity between the two concepts, which subsequently enables the creation of relevant propositions that apply equally to both domains (Chen et al., 2013). Assuring these similarities can increase the likelihood that the metaphorical insight is meaningful (Cornelissen, 2003) and thus usefully helps the theorist to construct predictions and explanations about supply chain phenomena through the terminology, concepts, and theories accessed through the source domain (Chen et al., 2013). More specifically, Chen et al.'s (2013: 580) demonstration of metaphoric transfer emphasized the formal and systematic process of mapping isomorphisms because it helps to assure the "proper" borrowing and testing of theories which have been sourced from outside the supply chain discipline.

Chen et al. (2013) demonstrate a systematic mapping of equivalences between divorce and strategic buyer–supplier relationship dissolution phenomena. For example, spousal maintenance/alimony maps to breach of contract payments as ontological equivalences. Also, the causal relationship between the relational stress caused by the search for a new partner (a new source of supply, or a new sexual partner) and the act of divorce represents an example of an analogical equivalence. This contrasts with dancing as a metaphor for supply chain linkages, which has insufficient similarity in terms of ontology, analogy, or identity, rendering it less productive for a supply chain theorist (Cornelissen, 2004). This evaluation has seemingly been sanctioned by its limited uptake, and its limited effects on stimulating new investigation in supply chain linkages.

It is a necessary precondition for the construction of theoretical frameworks through metaphorical imagination that the chosen metaphors are deemed sufficiently *apt* in reflecting the empirical world (Cornelissen, 2002). However, the aptness of the metaphor can be considered a necessary but not sufficient condition for a metaphor to be considered productive (Cornelissen, 2003). In addition to being apt, metaphors also must be rich and interesting in order to be productive.

2. Richness—is the source domain theoretically rich?

Closely related to the suggestion that a metaphor must satisfy requirements of isomorphism is the requirement that the theoretical body of knowledge from which the source concept is drawn must be sufficiently established as a rich source of terminology, concepts, and theories that can be used to study supply chain phenomena (Hunt & Menon, 1995). The method of metaphoric transfer is based on the assumption that there is value in leveraging scientific knowledge from other domains (Tsoukas, 1991). Therefore, it is essential that supply chain scholars should identify metaphors that connect the supply chain phenomenon under investigation with a rich conceptual domain that has well-established concepts and theories. The greater the richness of knowledge within the source domain, the more likely it will be to structure, guide, and prompt a significant program of research by the research community (Hunt & Menon, 1995). Specifically, this criterion is characterized in terms of the "number of substantive concepts", as well as "the body of models and theories" that can usefully be translated into the field of supply chain and the study of the supply chain topic (Hunt & Menon, 1995: 85–86).

Importantly, the richness criterion emphasizes the differences between metaphors which may underpin truly programmatic efforts and other metaphors which have been deemed simply literary metaphors (Hunt & Menon, 1995; Chen et al., 2013). Unlike rich metaphors, such as marriage, metaphors such as *chain* (Foropin & McLachlin, 2013; Frohlich & Westbrook, 2001) do not connect the supply chain theorist with a rich body of knowledge that can be leveraged for theorizing supply chain phenomena.

The richness criterion can be illustrated through the example of infidelity. Research and theory regarding marital infidelity represent a rich and established body of knowledge (Blow & Hartnett, 2007; Hertlein, Wetchler & Piercy, 2005; Tsapelas, Fisher & Aron, 2010),

offering numerous frameworks in terms of typologies of infidelity (Hertlein, Wetchler & Piercy, 2005); antecedents of infidelity (Fye & Mims, 2018; Russell, Baker & McNulty, 2013); and recovery and treatment processes to restore relational trust and stability after infidelity has occurred (Fife, Weeks & Stellberg-Filbert, 2013), including forgiveness (Fife, Weeks & Stellberg-Filbert, 2013; Fincham, Hall & Beach, 2006).

Moreover, theoretical explanations for infidelity have drawn from a range of theoretical traditions, some of which resonate with existing theoretical traditions in supply chain literature, for example, social exchange theory (Leonidou et al., 2019) and others which offer novel theoretical lenses to explain and predict incidences of infidelity. For example, Fye and Mims (2018) use the theory of protective factors to explain the avoidance of infidelity in terms of partners' consistent efforts to build and maintain a secure and satisfying emotional attachment, a commitment to sex in marriage, and each partner's individual coping skills. Alternatively, attachment theory has been used to predict a partner's unfaithful behavior in terms of the mental representations that a partner develops of the availability of the other partner, where availability is defined in terms of responsiveness to a partner's need for security, support, and satisfaction (Mikulincer & Shaver, 2003; Russell, Baker & McNulty, 2013).

The first two criteria we have presented are complementary. Together, they emphasize the importance of assuring the similarity of the metaphoric source image and supply chain phenomenon under investigation in order to meaningfully leverage a rich body of knowledge to facilitate supply chain theory development. However, for metaphor to facilitate the development of novel supply chain theory, it must also be perceived to be interesting in some way (Cornelissen, 2005). We thus present interestingness as the third and final criterion.

3. Interestingness—is the metaphor a source of surprising conjectures?

It is widely agreed that a theory needs to be interesting if it is to have an impact upon scholarship within a field and that interestingness is dependent upon the ability of a theory to surprise through the production of counterintuitive conjectures "which deny rather than affirm certain assumptions of their audience" (Davis, 1971: 309). The most productive metaphors will therefore be those that not only satisfy the criteria of aptness and richness, but which are also surprising or counterintuitive in some way (Cornelissen, 2004, 2005, 2006). An exclusive focus on aptness for evaluating the value of metaphor within supply chain theorizing (Chen et al., 2013) can lead us to ignore one of the productive features of a metaphor, which is their dissonance (Oswick,

Fleming & Hanlon, 2011). A defining quality of metaphor is literal falsity. Metaphors are "denotatively false" but (potentially) "connotatively true" (Hunt & Menon, 1995: 88). It is through encountering the ways in which the source domain or subject is ostensibly *not like* the supply chain phenomenon being studied that metaphors encourage scholars to rearrange their view of the target phenomenon, which may lead to new insights (Cornelissen, 2006).

The previously mentioned metaphor of dancing is an example of a metaphor that meets the criterion of literal falsity and therefore has the potential to produce interesting insights within the field of supply chain management. While it has not gained currency for the study of supply chain linkages, Wieland (2020) recently proposed dancing as a metaphor for theorizing transformative approaches to the management of supply chains. The dancing metaphor is used to problematize traditional assumptions about the management of the supply chain which are grounded in the modernist discourse of scientific management that emphasizes planning, control, and optimization. In contrast, the dancing metaphor enables us to focus on the undertheorized transformative processes of improvisation and experimentation within supply chain management. It may be objected that supply chains are not literally dancing but this falsity is precisely the source of its potential interestingness and led to the adoption of novel theoretical lenses. In the case of the Wieland (2020) paper, the dancing metaphor led to the adoption of the lens of panarchy, an evolutionary theory of social–ecological systems that emphasizes adaptation through cycles of renewal (Gunderson & Holling, 2002), which is similarly indebted to the dancing metaphor (Gunderson, 2003).

A metaphor which satisfies the criteria of interestingness can stimulate novel theorization. Interestingness is essential for assuring the productivity of metaphors in developing novel supply chain theory, but we caution that dissimilarity is only really valuable to scholars if the metaphor has sufficient aptness (our first criterion) in the first place (Cornelissen, 2002). The *most* productive metaphors for supply chain theorizing will therefore be those that sufficiently satisfy all three (Cornelissen, 2002; Cornelissen, 2006).

METAPHORIC TRANSFER PATHWAYS WITHIN SUPPLY CHAIN THEORIZATION

In this section, we present an original framework for guiding scholars' approaches to metaphoric transfer. The framework synthesizes the paper's previous discussions to produce a practical guide for supply chain scholars. The Metaphoric Transfer Pathways framework, presented in Figure 1, illustrates the two distinct

FIGURE 1
Metaphoric Transfer Pathways framework [Color figure can be viewed at wileyonlinelibrary.com]
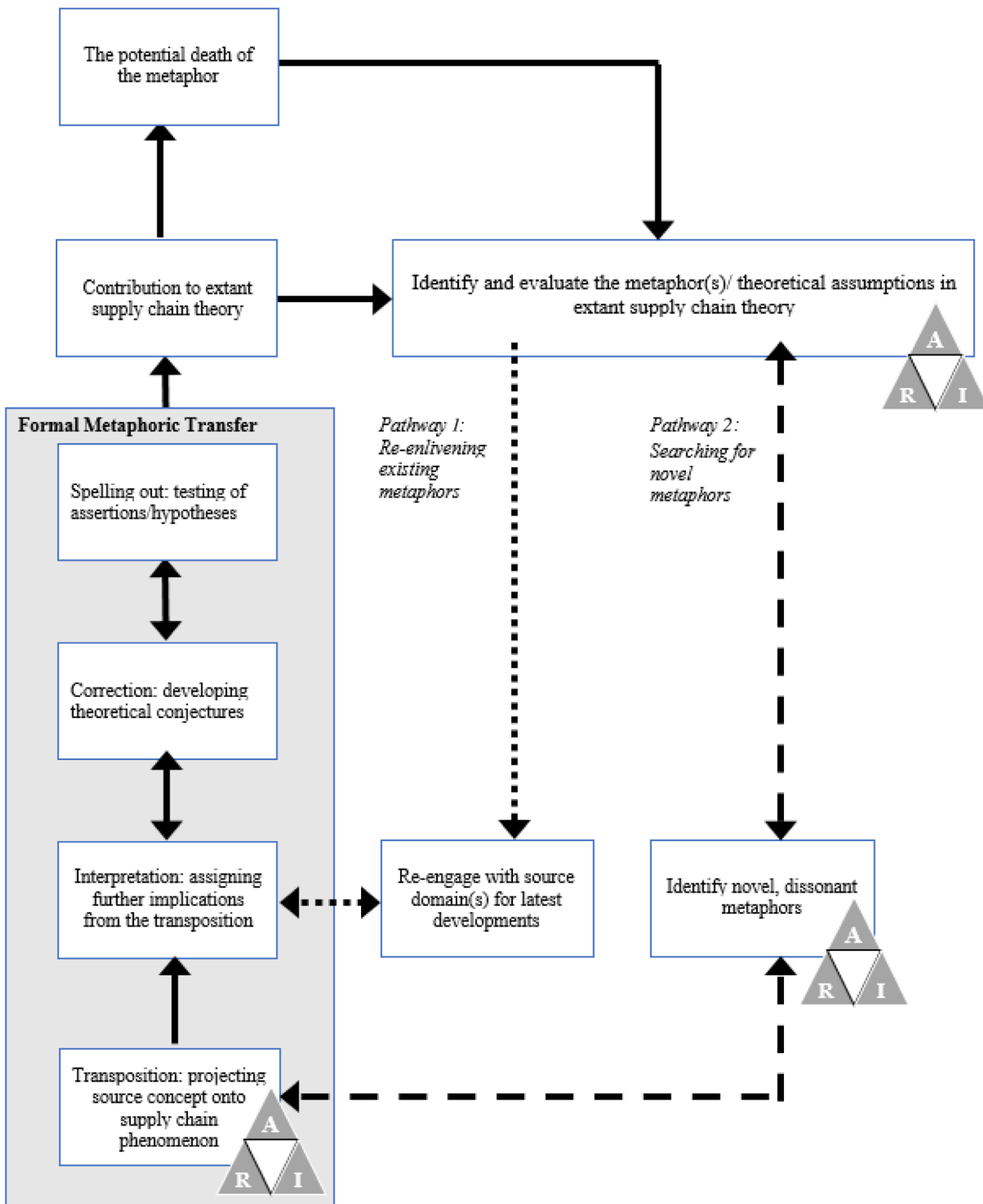
KEY

Evaluation Criteria: A=Aptness. R=Richness

pathways we have presented and shows how our evaluation criteria can be used to inform the theorist's choice of approach to metaphoric transfer. In Figure 1, the use of the evaluation criteria is represented by a triangle. We would like to highlight here that there are several triangles within the figure, which indicates that evaluation is an ongoing process within the method of metaphoric transfer.

Starting Point: Identification and Evaluation of Metaphors within the Topic

A logical starting point is to identify and evaluate the key metaphors and/or theoretical assumptions that inform the supply chain topic under investigation. This can be done at the problem definition and/or literature review stages of the research. The evaluation will use the evaluation criteria of aptness, richness, and interestingness presented in this paper. The initial evaluation of the metaphor will determine which approach is taken toward the metaphoric transfer process. If the metaphor receives a high evaluation on all three criteria (aptness, richness, and interestingness), a logical goal would be to "to re-enliven metaphor" (pathway 1). If the metaphor does not receive a positive evaluation for richness and/or interestingness, the metaphor is not a productive metaphor for novel theorization and the goal should be to "search for novel metaphors" (pathway 2).

Pathway 1: Re-enlivening Metaphor through Reconnection with the Source Domain

The first pathway shows the processes required to re-enliven dormant or dead metaphors through reconnection with the source domain. On the basis of sufficient aptness and interestingness, the key criterion for maximizing productivity is the richness of the source domain for providing well-established and expansive concepts that may highlight or give structure to underexplored facets of the supply chain phenomenon being theorized. The task for the scholar thus becomes a conscious re-engagement with the knowledge of the source domain as a potential source of new theories or conceptual raw material, and ultimately inspiration and creativity in updating and extending existing supply chain theory. If the criterion of richness is not sufficiently justified, the metaphor may still be apt, but its potential for providing the foundation of an extended program of research may be more limited. This method is applicable for dormant metaphors within supply chain theory, or indeed live metaphors that have not been fully explored.

To illustrate how pathway 1 supports theorization, we will consider the topic of supply chain linkages. The first stage is to identify and evaluate the relevant metaphor(s) for this topic. The marriage metaphor would likely be identified as the most important metaphor at this stage as it has influenced the theorization of interfirm linkages in general, and supply chain linkages in particular, for decades. The metaphor then needs to be evaluated using the criteria of aptness, richness, and interestingness.

The likely result of this evaluation would be that the marriage metaphor satisfies the three criteria and is still a valuable metaphor for the purposes of theorizing supply chain linkages, which undoubtedly explains why it has proved to be so enduring as a root metaphor for supply chain scholarship. It is sufficiently apt in identifying buyer–supplier interactions as analogous to marriages and its isomorphism has been substantiated through a substantial body of empirical research. The marriage metaphor is sufficiently rich as it provides access to a rich body of knowledge that continues to evolve within the domain of marital studies and related fields, such as social psychology and sociology. Much of the knowledge in these fields represents an extensive source of untapped and potentially useful knowledge with which to theorize buyer–supplier interactions. Finally, despite the longevity of this metaphor within supply chain scholarship, it continues to be evaluated as interesting as it still has the potential to produce novel conjectures about linkages within the supply chain. The image of buyers and suppliers as marital partners represents sufficient conceptual distance from the supply chain domain to be still be considered counterintuitive and thus produce surprising insights.

Our evaluation suggests that the metaphor of marital relationships for buyer–supplier linkages remains productive and useful, and therefore suggests that a valid approach for supply chain theorizing is to re-enliven the metaphor in the supply chain literature for the benefit of further metaphoric transfer and theorizing activities. This corresponds to the "re-engage with source domain(s) for latest developments" stage within pathway 1. The field of marital studies has developed significantly since the marriage metaphor was first transposed to the phenomenon of supply chain linkages. There is thus an untapped source of theoretical raw material for re-enlivening the marriage metaphor to creatively theorize buyer–supplier linkages.

Possibilities for re-enlivening the metaphor of marriage include engaging with the latest research into satisfaction in marital relationships and the emergent knowledge on open relationships. Drivers of marital satisfaction could be used to explore satisfaction in buyer–supplier relationships. For example, the latest research emphasizes the influence of individual level factors, such as mindfulness (Karremans, Schellekens & Kappen, 2017), emotional intelligence (Zarch, Marashi & Raji, 2014), levels of optimism (Assad et al., 2007), personality (Abbasi, 2017), and conscientiousness (Claxton et al., 2012). Each of these factors offers

supply chain theorist potential opportunities for novel theorization.

The emergent literature on open relationships emphasizes their increasing prevalence and viability (Fairbrother et al., 2019). The concept of openness offers the potential to reframe the concept of infidelity, which is perceived negatively from the dominant heterocentric view of monogamy (Cohen, 2016). Instead, the latest research emphasizes that extradyadic relations occur because of the strength of the primary relationship, not its failure.

There are of course many more opportunities to re-enliven the marriage metaphor, and the two examples presented are only meant to be illustrative examples of re-engaging with the source domain. Following this re-engagement with the latest developments in the source domain, it becomes possible to enter the formal metaphoric transfer process at the interpretation stage.

Pathway 2: Searching for Novel Metaphors from Distant Domains

The second pathway shows the processes required to search for novel metaphors. This becomes a relevant pathway if the existing metaphors used to study the topic of interest are evaluated to be lacking in richness and/or interestingness. Through this pathway, the scholar engages in a conscious effort to identify novel but apt metaphors that will give access to a rich domain of knowledge and which will have the potential to produce interesting conjectures. In Figure 1, pathway 2 is depicted by a two-headed arrow to demonstrate the interactive exploration of novel metaphors in comparison with existing metaphors and salient theory.

There are two potential outputs of pathway two. Firstly, engaging with novel metaphors for the purposes of creatively problematizing the assumptions of existing theory will help scholars to ask new research questions and develop novel theoretical constructs. These new theoretical components may be the product of the "searching for novel metaphors" process but may bear no trace of the metaphors that prompted them. The metaphor therefore functions as scaffolding to support the theorization process but is not incorporated in the final presentation of the theory. This will be likely for novel metaphors that are lacking in aptness and/or richness. Secondly, novel metaphors which are evaluated as interesting may also be evaluated as sufficiently satisfying the other two criteria—aptness and richness—and thus can be selected for a formal process of metaphoric transfer (Cornelissen, 2002; Montuschi, 1995). If the metaphor continues to be evaluated as apt, rich, and interesting, this may mean that it represents a metaphor that has the potential to become a foundational metaphor for a research program.

To illustrate how pathway 2 supports theorization, we will consider the metaphor of friendship. Like marriage, the friendship metaphor has been used to theorize supply chain linkages (Drake & Schlachter, 2008) but has not gained the same currency. Drake and Schlachter (2008) make a case for the aptness of the metaphor by demonstrating that theoretical constructions of supply chain collaboration reflect attributes found in Aristotelian characterizations of friendship. For example, although exchange relationships are based on utility (reflecting Aristotelian friendships of utility), collaborative forms of exchange relationships are characterized by additional conditions of incentive alignment, communication, and trust. The authors suggest that these conditions reflect characteristics of Aristotle's friendships of the good (also known as perfect friendships), which are characterized by virtuous agents who engage in the relationship for the good of the other (Drake & Schlachter, 2008).

Although a case for aptness may be made, the friendship metaphor lacks sufficient interestingness to underpin programmatic research of supply chain linkages or warrant re-enlivement through pathway 1. This evaluation is partly made in light of the evaluation of the productivity of the existing metaphor of marriage which also captures the virtue ethics perspective within its theorization of successful romantic relationships or marriages (e.g., Novak et al., 2018; Powers, 2001; Veldorale-Brogan et al., 2013) and broader family networks (e.g., Goodsell & Whiting, 2016). In light of our evaluation of the marriage metaphor as rich, interesting as well as apt, the friendship metaphor does not offer significant value in terms of interestingness beyond what is already available to supply chain theorists through the re-enlivened marriage metaphor.

This evaluation of the friendship metaphor triggers pathway 2 and the search for novel metaphors. Like any metaphor, the marriage metaphor is not unilaterally sufficient for theorizing buyer–supplier linkages (Morgan, 1997) and there is thus a need to search for novel metaphors from novel source domains which will also question our dominant assumptions about buyer–supplier interactions. This corresponds to the "identify novel, dissonant metaphor" stage within pathway 2. The two metaphors we have considered in our discussion of supply chain linkages are both drawn from the discipline of the social sciences, and it may be more productive to search within domains in alternative disciplines, for example, the natural sciences. One such domain that has already proven to be productive for supply chain management is that of biology (Tate et al., 2019). The study of interspecific interactions is a major research area within biology and concerns the interactions between species within an ecosystem.

Parasitism, mutualism, commensalism, and amensalism are four interspecific interactions that could be used within the Metaphoric Transfer process to produce novel insights about interactions within supply chains.

Parasitism is a well-known phenomenon, not least because it poses a major health risk to humans and represents a one-sided interaction in which one species benefits at the expense of the other (Sorci & Garnier, 2019). In contrast to parasitism, mutualism is the process through which interacting species mutually benefit from the interaction (Hoeksema & Bruna, 2000). An important distinction is between obligate and facultative mutualism. In obligate mutualism, the survival of the interacting species depends on the interaction, which is not the case in facultative mutualisms (Chomicki, Kiers & Renner, 2020). Commensalism and amensalism are less well-known forms of interspecific interaction. Commensalism occurs when one species benefits from the interaction, but this is neither at the expense of the other organism, as in parasitism, or to the benefit of the other organism, as in mutualism (Hedayat & Lapraz, 2019), while amensalism occurs when one species is harmed but the other species is unaffected (Kitching & Harmsen, 2008).

An important concept for understanding interspecific interactions is conditionality, which is the process through which changes in the context of the interaction changes the nature of the interaction. For example, in the context of high predation, the protection services that ants provide to treehoppers in exchange for food is a form of mutualism, but in the absence of predation, the interaction becomes parasitic as the treehoppers still provide the ants with food but no longer received the service of protection (Bronstein, 2015). Interspecific interactions can also be studied in terms of the relationship between the different types of interaction. For example, Hedayat and Lapraz (2019) show that the flora within the human microbiome interact within their human host on the basis of commensalism but that one of the specific benefits they provide for their host is to repel amensal organisms, that is, organisms that could harm the human host system.

These four types of interspecific interaction appear to meet the criterion of aptness as the focus on benefits and harm will be familiar to supply chain scholars. They will also likely be evaluated as meeting the criterion of richness as there is a rich literature on interspecific interaction within the domain of biology that is available to supply chain scholars (Hoeksema & Bruna, 2000; Lee & Inouye, 2010; Lee, Kim & Choe, 2009). Scholars looking to apply the method of Metaphoric Transfer to the concept of interspecific interaction will need to decide whether to work with one or multiple interaction types.

If scholars decide to work with just one type of interspecific interaction, the decision on which type of interaction to adopt for the process of metaphoric transfer will ultimately depend on a preliminary evaluation of their relative interestingness. To the authors, parasitism seems to offer the most interesting possibilities as it is the most distant to the dominant metaphor of marriage and is thus more likely to produce counterintuitive conjectures. For example, the metaphor of parasitism could be used to produce novel insights into the dark side of buyer–supplier relationships (Villena, Revilla & Choi, 2011). Working with multiple types of interspecific interaction also offers a number of interesting possibilities. Perhaps the most interesting possibility is to focus on the phenomenon of conditionality in order to produce conjectures about how supply chain interactions can shift from one type of interaction to another, for example, from mutualism to parasitism, as the result of changing contexts.

Following the search for novel and dissonant metaphors, and the evaluation of the concept of interspecific interactions as apt, rich, and interesting, it becomes possible to enter the formal metaphoric transfer process at the transposition stage.

DISCUSSION

In this paper, we have built on prior work on supply chain theorizing through metaphoric transfer (Chen et al., 2013) and developed an expanded framework which can help scholars to identify the most suitable way to approach metaphoric transfer within their theorizing efforts. Unfortunately, there is not enough space within this article to fully capture the rich and ongoing debates about how metaphors work and about how the value of metaphors in theorizing can be maximized. Our presentation of the Metaphoric Transfer Pathways framework has, necessarily, only been able to operationalize some of the considerable work on metaphorical imagination. We therefore believe that the framework, and the arguments it synthesizes, need to be contextualized within the broader literature on metaphorical imagination.

We acknowledge that the tidiness of our Metaphoric Transfer Pathways framework belies the inevitable messiness and challenges that can accompany metaphoric transfer. We have imposed our own sense of discipline on the fundamentally imaginative processes associated with metaphoric transfer (Weick, 1989). This is evident perhaps in our presentation of the two approaches to metaphoric transfer ("re-enlivening existing metaphors" and "searching for novel metaphors") as distinct pathways. In reality, we suggest that there is useful interaction between searches for novel metaphors and efforts to re-enliven an existing

metaphor through reconnecting with its originating domain. For example, the anomaly encountered in a novel metaphor, such as dancing, may help scholars to see features of the supply chain phenomenon that have previously been ignored or underplayed. As we have mentioned, Wilkinson and Young (1994) suggested that the dancing metaphor highlights important features of interfirm relations which are not captured by the marriage metaphor, such as the idea that value is created through the quality of ongoing firm interactions rather than the creation of formal structure. Such features may be underplayed but not absent in the marriage metaphor. The encounter with the novel dancing metaphor might therefore work to sharpen the process of re-enlivening the marriage metaphor, by focusing the scholar's search of the marital studies literature specifically on the latest knowledge around the quality of interactions and its impact on value creation in the relationship.

It is also important to remember that the process of evaluating metaphors for the contribution that they can make to theorizing activities (and therefore supply chain theory) should be considered contingent upon the theorist's unique knowledge, capabilities and pre-existing assumptions about what is or is not theoretically salient (Cornelissen, 2004). For example, an evaluation of a metaphor's aptness is dependent upon the scholar's pre-existing knowledge and assumptions about the supply chain phenomenon under investigation. Similarly, the objective richness of the source domain of an existing or novel metaphor is secondary to the scholar's knowledge of, access to, and effective redeployment of metaphoric concepts from that source domain. The larger the conceptual distance between the source and target domains, the greater this challenge may be. However, the payoffs may be greater too. Cornelissen and Durand's (2014) analysis of the roots of core management theories revealed the value of having knowledge of a broad range of topics and literatures for stimulating novel and powerful theoretical insights (Smith & Hitt, 2005). Metaphoric transfer is thus consistent with calls for more interdisciplinary project teams in supply chain research (Sanders & Wagner, 2011; Sanders, Zacharia & Fugate, 2013).

Moreover, it is important to remember that the methodology of metaphorical imagination offers alternative models of how metaphors work to create cognitive insight. The dominant model has been the comparison model of metaphor, which assumes that metaphoric transfer consists of a systematic comparison of the known characteristics of two concepts. This is the approach advocated by Chen et al. (2013) and asserts that the theorist working with a metaphor seeks to *uncover* pre-existing similarities between the phenomenon of interest and the comparable source concept (Tsoukas, 1991). An alternative model, termed the domains interaction view, proposes that metaphors create unique meaning for the theorist through blending information from the target and source domains (Cornelissen, 2005). This means that the new insight that occurs for the theorist *emerges* through imaginative blending processes (Cornelissen, 2005; Fauconnier & Turner, 1998). The insight therefore represents more than simply the transfer of any pre-existing idea from the source to the target domain. The insight created is a unique and creative blend of information and ideas taken from both the source and target domains.

We believe these two alternative models of how metaphors work are better seen as complementary rather than opposing (Oswick & Jones, 2006) and our framework allows for accommodating both views of metaphorical imagination. The richness criterion is particularly pertinent in the context of the comparison view of metaphor. On the assumption that metaphors are useful for supply chain theorizing because metaphors facilitate the transfer of information from one domain to another, then the richness of the source domain is a prerequisite for a more fruitful transfer process. On the alternative assumption that metaphor is useful for supply chain theorizing because it triggers unique and imaginative blending processes, then the perceived distance between the supply chain phenomenon and the metaphoric source concept will be deemed particularly important. A metaphor sourced from a more distant domain is more likely to present the supply chain theorist with dissimilarity which might be shocking enough to stimulate novel emergent insights (Oswick, Fleming & Hanlon, 2011). In both instances, however, the criterion of aptness is an important constraint. The aptness criterion encourages the theorist to establish isomorphism in order to provide the foundation for the proper borrowing of theories (Chen et al., 2013) (in line with the comparison view) and it also provides a constraint on the extent of conceptual distance between the source and target domains. It is important that the perceived dissimilarity between the source and target concepts are great enough to be interesting, but not so great as to undermine its aptness (in line with the domains interaction view).

The evaluation criteria we have presented in this paper represent a holistic framework for evaluation that can accommodate a variety of views on what and how metaphors contribute to theorizing supply chains. Moreover, they reflect criteria that have been tried, tested, and refined in wider organization and management theory. Numerous linguistic-based and perception-based research studies (Cornelissen & Kafouros, 2008; Cornelissen, Kafouros & Lock, 2005) have emphasized the importance of the aptness of a

metaphor for assuring its ability to generate theoretical insight. Conceptual distance has similarly been well supported as an important aspect of interesting metaphors because a focus on dissimilarity rather than similarity offers us a greater chance of seeing supply chain phenomena differently, or seeing previously unseen aspects of supply chains (Cornelissen, 2005). These criteria also act as valuable triggers for prompting supply chain scholars to search within underexplored conceptual domains and fields of knowledge that may yield useful conceptual machinery for the development of supply chain theory. This may prompt the extension of existing theoretical toolboxes to include theoretical lenses from much more distant fields of knowledge. Metaphoric transfer shows us that knowledge from dissimilar fields, such as biology (Tate et al., 2019), need not be disregarded, so long as the metaphor is considered apt (Chen et al., 2013).

The evaluation criteria we have articulated can be leveraged for immediate use by the supply chain community. However, these are not the only ways in which the value of metaphors can be articulated or framed. For example, Cornelissen and Kafouros (2008) articulated a separate criterion of comprehensibility, which they defined as the degree to which a metaphor is relatively easy to understand. Interested supply chain scholars may therefore also find it useful to consider comprehensibility as an additional useful criterion for the evaluation of a metaphor's productivity for theorizing supply chain phenomena. Assuring comprehensibility may be a particularly important characteristic of novel metaphors that can diffuse through, and garner extended engagement from, the wider supply chain research community. In addition to comprehensibility, other studies have offered even more comprehensive sets of evaluation criteria. For example, Cornelissen (2006) offered an exhaustive set of eight optimality principles that determine a metaphor's potential for creating value for theorizing. Alternatively, Morgan (2011: 470) suggested that evaluating the value of a metaphor for theorizing can be achieved by asking questions such as "does [this] metaphor generate valuable insights and allow us to understand what's happening in a more informed way? Does it help us to act more appropriately or effectively in terms of what we are seeking to do?" (Morgan, 2011: 470). These are similarly useful questions for prompting more discursive reflections on the productivity of a metaphor for theorizing supply chains.

CONCLUSION

In this paper, we have built on the work of Chen et al. (2013) to further explore the contribution that metaphoric transfer can make to supply chain theorizing activities. Specifically, we have extended existing models of metaphoric transfer to articulate two novel approaches by which scholars can approach and engage with metaphoric transfer: "re-enlivening of dormant or dead metaphors" and "searching for novel metaphors from distant domains." To better guide supply chain scholars' decision making in these efforts, we have also presented a set of evaluation criteria which can help with the search and selection of novel or existing metaphors as an essential element of the metaphoric transfer process. Our paper offers a useful contribution to the supply chain literature on the use of metaphors in supply chain theorizing for two key reasons.

Firstly, our paper emphasizes the importance of recognizing that metaphors are not all created equal in the value they can bring to developing novel supply chain theory. Metaphors proceed through a life cycle, from live to dormant to dead. Live metaphors have the most value for theorizing, but even live metaphors can vary in their productivity for supply chain theorization. Our evaluation criteria can be used by supply chain scholars to discern between novel metaphors that may be used as inputs to the metaphoric transfer process. Dormant or dead metaphors may initially lack the capacity to provide new theoretical insights, but may be usefully re-enlivened through a scholar's conscious and active engagement with the originating source domain.

Secondly, our Metaphoric Transfer Pathways framework offers accessible guidance on how supply chain scholars can identify metaphors to use within the metaphoric transfer process. Existing models of metaphoric transfer begin at the point of transposing an already identified metaphor. We extend these models for supply chain scholarship by identifying accessible pathways that a scholar may take before the transposition stage. Our view is that there is a dearth of process-based guidance on how to engage with metaphoric transfer, both in theorizing in general and in supply chain theorizing in particular. This acts as a barrier to more widespread engagement with metaphoric transfer in theorizing supply chain phenomena. Our Metaphoric Transfer Pathways framework therefore explicitly indicates that the extent to which existing dormant metaphors in supply chain theory can be deemed to be *apt*, *rich*, and/or *interesting* triggers one of two potential approaches to metaphoric transfer. We think the Metaphoric Transfer Pathways framework will be particularly useful to supply chain scholars who are interested in novel approaches and who are new to explicitly acknowledging or working with live or dormant metaphors.

The discussion of the role of metaphors in theorizing has progressed significantly in organization and

management theory. It has become well accepted within organization and management theory that metaphors are both fundamental and useful in the theorizing process (Cornelissen, 2005). We believe the same is true for theorizing supply chains. Through our Metaphoric Transfer Pathways framework, we have offered the supply chain community an accessible starting point for engaging with metaphoric transfer. For interested scholars, our framework will facilitate more and productive engagement with novel metaphors and metaphors which are pre-existing in supply chain theory. We hope our framework will also stimulate further discussion about the types of metaphors and approaches to metaphoric transfer that are most useful for theorizing supply chains and supply chain management.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

REFERENCES

Abbasi, I. S. (2017). Personality and marital relationships: Developing a satisfactory relationship with an imperfect partner. *Contemporary Family Therapy*, 39, 184–194.

Alajoutsijarvi, K., Eriksson, P., & Tikkanen, H. (2001). Dominant metaphors in the IMP network discourse: 'The network as a marriage' and 'the network as a business system'. *International Business Review*, 10, 91–107.

Alvesson, M., & Sandberg, J. (2011). Generating research questions through problematization. *Academy of Management Review*, 36, 247–271.

Ambrose, E., Marshall, D., & Lynch, D. (2010). Buyer supplier perspectives on supply chain relationships. *International Journal of Operations and Production Management*, 30, 1269–1290.

Andriessen, D., & Van Den Boom, M. (2007). In search of alternative metaphors for knowledge: Inspiration from symbolism. *Electronic Journal of Knowledge Management*, 7, 397–404.

Assad, K. K., Donellan, M. B., & Conger, R. D. (2007). Optimism: An enduring resource for romantic relationships. *Journal of Personality and Social Psychology*, 93, 285–297.

Atkins, D. C., & Kessel, D. (2008). Religiousness and infidelity: Attendance, but not faith and prayer, predict marital fidelity. *Journal of Marriage and Family*, 70, 407–418.

Bacharach, S. B. (1989). Organizational theories: Some criteria for evaluation. *Academy of Management Review*, 14, 496–515.

Blow, A. J., & Hartnett, K. (2007). Infidelity in committed relationships II: A substantive review. *Journal of Marital and Family Therapy*, 31, 217–233.

Boyd, R. (1993). Metaphor and theory change: What is 'metaphor' a metaphor for? In A. Ortony (Ed.), *Metaphor and thought* (pp. 481–532). Cambridge, UK: Cambridge University Press.

Bronstein, J. L. (Ed.) (2015). *Mutualism*. Oxford, UK: Oxford University Press.

Carter, C. R. (2011). A call for theory: The maturation of the supply chain management discipline. *Journal of Supply Chain Management*, 47, 3–7.

Carter, C. R., Rogers, D. S., & Choi, T. Y. (2015). Toward the theory of the supply chain. *Journal of Supply Chain Management*, 51, 89–97.

Chen, Y.-S., Rungtusanatham, M. J., Goldstein, S. M., & Koerner, A. F. (2013). Theorizing through metaphorical transfer in OM/SCM research: Divorce as a metaphor for strategic buyer-supplier relationship dissolution. *Journal of Operations Management*, 31, 579–586.

Chomicki, G., Kiers, E. T., & Renner, S. S. (2020). The evolution of mutualistic dependence. *Annual Review of Ecology, Evolution, and Systematics*, 51, 409–432.

Claxton, A., O'Rourke, N., Smith, J. Z., & DeLongis, A. (2012). Personality traits and marital satisfaction within enduring relationships: An intra-couple discrepancy approach. *Journal of Social and Personal Relationships*, 29, 375–396.

Cohen, M. T. (2016). An exploratory study of individuals in non-traditional, alternative relationships: How 'open' are we? *Sexuality and Culture*, 20, 295–315.

Cornelissen, J. P. (2002). On the organizational identity metaphor. *British Journal of Management*, 13, 259–268.

Cornelissen, J. P. (2003). Metaphor as a method in the domain of marketing. *Psychology and Marketing*, 20, 209–225.

Cornelissen, J. P. (2004). What are we playing at? Theatre, organization and the use of metaphor. *Organization Studies*, 25, 705–726.

Cornelissen, J. P. (2005). Beyond compare: Metaphor in organization theory. *Academy of Management Review*, 30, 751–764.

Cornelissen, J. P. (2006). Making sense of theory construction: Metaphor and disciplined imagination. *Organization Studies*, 27, 1579–1597.

Cornelissen, J. P., & Durand, R. (2014). Moving forward: Developing theoretical contributions in management studies. *Journal of Management Studies*, 5, 995–1022.

Cornelissen, J. P., & Kafouros, M. (2008). Metaphors and theory building in organization theory: What determines the impact of a metaphor on theory? *British Journal of Management*, 1, 365–379.

Cornelissen, J. P., Kafouros, M., & Lock, A. R. (2005). Metaphorical images of organization: How organizational researchers develop and select organizational metaphors. *Human Relations*, 5, 1545–1578.

Davis, M. S. (1971). That's interesting: Towards a phenomenology of sociology and a sociology of

phenomenology. *Philosophy of the Social Sciences*, 1, 309–344.

Drake, M. J., & Schlachter, J. T. (2008). A virtue-ethics analysis of supply chain collaboration. *Journal of Business Ethics*, 82, 851–864.

Fairbrother, N., Hart, T. A., & Fairbrother, M. (2019). Open relationship prevalence, characteristics and correlates in a nationally representative sample of Canadian adults. *Journal of Sex Research*, 56, 695–704.

Fauconnier, G., & Turner, M. (1998). Conceptual integration networks. *Cognitive Science*, 22, 133–187.

Fife, S. T., Weeks, G. R., & Stellberg-Filbert, J. (2013). Facilitating forgiveness in the treatment of infidelity: An interpersonal model. *Journal of Family Therapy*, 35, 343–367.

Fincham, F. D., Hall, J., & Beach, S. R. H. (2006). Forgiveness in marriage: Current status and future directions. *Family Relations*, 55, 415–427.

Flynn, B. (2020). *EDI: Emerging approaches for developing SCM theory, introduced by Professor Barbara B. Flynn*. Retrieved from https://www.journalofsupplychainmanagement.com/new-blog/2020/4/10/edi3. Accessed October 2, 2020.

Flynn, B., Pagell, M., & Fugate, M. (2020). From the editors: Introduction to the emerging discourse incubator on the topic of emerging approaches for development supply chain management theory. *Journal of Supply Chain Management*, 56, 3–6.

Foropin, C., & McLachlin, R. (2013). Metaphors in operations management theory building. *International Journal of Operations and Production Management*, 33, 181–196.

Frohlich, M. T., & Westbrook, R. (2001). Arcs of integration: An international study of supply chain strategies. *Journal of Operations Management*, 19, 185–200.

Fye, M. A., & Mims, G. A. (2018). Preventing infidelity: A theory of protective factors. *The Family Journal*, 27, 22–30.

Garud, R., & Kotha, S. (1994). Using the brain as a metaphor to model flexible production systems. *Academy of Management Review*, 19, 671–698.

Goodsell, T. L., & Whiting, J. B. (2016). An Aristotelian theory of family. *Journal of Family Theory and Review*, 8, 484–502.

Gunderson, L. H. (2003). Adaptive dancing: Interactions between social resilience and ecological crises. In F. Berkes, J. Colding & C. Folke (Eds.), *Navigating socio-ecological systems: Building resilience for complexity and change* (pp. 33–52). Cambridge, UK: Cambridge University Press.

Gunderson, L. H., & C. S. Holling (Eds.) (2002). *Panarchy: Understanding transformations in systems of humans and nature*. London, UK: Island Press.

Halldorsson, A., Hsuan, J., & Kotzab, H. (2015). Complementary theory to supply chain management revisited - from borrowing theories to theorizing. *Supply Chain Management: An International Journal*, 20, 574–586.

Hardy, C., Bhakoo, V., & Maguire, S. (2020). A new methodology for supply chain management: Discourse analysis and its potential for theoretical advancement. *Journal of Supply Chain Management*, 56, 19–35.

Hedayat, K. M., & Lapraz, J.-C. (2019). *The theory of endobiogeny. Foundational concepts for treatment of common clinical conditions* (Vol. 2). London, UK: Elsevier.

Hertlein, K. M., Wetchler, J. L., & Piercy, F. P. (2005). Infidelity. An overview. *Journal of Couple and Relationship Therapy*, 4, 5–16.

Hoeksema, J. D., & Bruna, E. M. (2000). Pursuing the big questions about interspecific mutualism: A review of theoretical approaches. *Oecologia*, 125, 321–330.

Hunt, S. D., & Menon, A. (1995). Metaphors and competitive advantage: Evaluating the use of metaphors in theories of competitive strategy. *Journal of Business Research*, 3, 81–90.

Inns, D. (2002). Metaphor in the literature of organizational analysis: A preliminary taxonomy and a glimpse at a humanities-based perspective. *Organization Articles*, 9, 305–330.

Karremans, J. C., Schellekens, M. P. J., & Kappen, G. (2017). Bridging the sciences of mindfulness and romantic relationships: A theoretical model and research agenda. *Personality and Social Psychology Review*, 21(1), 29–49.

Ketokivi, M., Mantere, S., & Cornelissen, J. (2017). Reasoning by analogy and the progress of theory. *Academy of Management Review*, 42, 637–658.

Kitching, R. L., & Harmsen, R. (2008). Amensalism. In S. E. Jorgensen & B. D. Fath (Eds.), *Encyclopedia of ecology* (pp. 160–162). Amsterdam, Netherlands: Elsevier.

Lakoff, G., & Johnson, M. (1999). *Philosophy in the flesh: The embodied mind and its challenge to western thought*. New York, NY: Basic Books.

Lamming, R. C., Caldwell, N. D., Harrison, D. A., & Phillips, W. (2001). Transparency in supply relationships: Concept and practice. *The Journal of Supply Chain Management: A Global Review of Purchasing and Supply*, 37, 4–10.

Lee, C. T., & Inouye, B. D. (2010). Mutualism between consumers and their shared resource can promote competitive co-existence. *The American Naturalist*, 175, 277–288.

Lee, J. H., Kim, T. W., & Choe, J. C. (2009). Commensalism or mutualism: Conditional outcomes in a branchiobdellid-crayfish symbiosis. *Oecologia*, 159, 217–224.

Leonidou, L. C., Aykol, B., Fotiadis, T. A., & Christodoulides, P. (2017). Antecedents and consequences of infidelity in cross-border business relationships. *Journal of International Marketing*, 25, 46–71.

Leonidou, L. C., Aykol, B., Spyropoulou, S., & Christodoulides, P. (2019). The power roots and drivers of infidelity in international business relationships. *Industrial Marketing Management*, 78, 198–212.

Matos, S., & Hall, J. (2007). Integrating sustainable development in the supply chain: The case of life

cycle assessment in oil and gas an agricultural biotechnology. *Journal of Operations Management*, 25, 1083–1102.

Matthews, L., Power, D., Touboulic, A., & Marques, L. (2016). Building bridges: Toward alternative theory of sustainable supply chain management. *Journal of Supply Chain Management*, 52, 82–94.

Mattingly, B. A., Wilson, K., Clark, E. M., Bequette, A. W., & Weidler, D. J. (2010). Foggy faithfulness: Relationship quality, religiosity, and the perceptions of dating infidelity scale in an adult sample. *Journal of Family Issues*, 31, 1465–1480.

Mikulincer, M., & Shaver, P. (2003). The attachment behavioral system in adulthood: Activation, psychodynamics, and interpersonal processes. *Advances in Experimental Social Psychology*, 35, 56–152.

Montuschi, E. (1995). What is wrong with talking of metaphors in science? In Z. Radman (Ed.), *From a metaphorical point of view: A multidisciplinary approach to the cognitive content of metaphor* (pp. 309–327). Berlin, Germany: de Gruyter.

Morgan, G. (1980). Paradigms, metaphors and puzzle solving in organization theory. *Administrative Science Quarterly*, 25, 605–622.

Morgan, G. (1997). *Images of organization*. London, UK: Sage Publications Inc.

Morgan, G. (2011). Reflections on images of organizations and its implication for organization and environment. *Organization and Environment*, 2, 459–478.

Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. *Journal of Marketing*, 58, 20–38.

Novak, J. R., Smith, H. M., Larson, J. H., & Crane, D. R. (2018). Commitment, forgiveness, and relationship self-regulation: An actor partner interdependence model of relationship virtues and relationship effort in couple relationships. *Journal of Marital and Family Therapy*, 44, 353–365.

Oswick, C., Fleming, P., & Hanlon, G. (2011). From borrowing to blending: Rethinking the processes of organizational theory building. *Academy of Management Review*, 36, 318–337.

Oswick, C., & Jones, P. (2006). Beyond correspondence? Metaphor in organization theory. *The Academy of Management Review*, 31, 483–485.

Powers, B. J. (2001). The limits of a technical concept of a good marriage: Exploring the role of virtue in communication skills. *Journal of Marital and Family Therapy*, 27, 327–340.

Ramsay, J., & Caldwell, N. (2004). If all you have is a hammer, everything looks like a nail: The risks of casual trope usage in purchasing discourse. *Journal of Purchasing and Supply Management*, 10, 79–87.

Rindova, V. (2011). Moving from ideas to a theoretical contribution: Comments on the process of developing theory in organizational research. *Journal of Supply Chain Management*, 47, 19–21.

Russell, V. M., Baker, L. R., & McNulty, J. K. (2013). Attachment insecurity and infidelity in marriage: Do studies of dating relationships really inform us about marriage? *Journal of Family Psychology*, 27, 242–251.

Sanders, N. R., & Wagner, S. M. (2011). Multidisciplinary and multimethod research for addressing contemporary supply chain challenges. *Journal of Business Logistics*, 32, 317–323.

Sanders, N. R., Zacharia, Z. G., & Fugate, B. S. (2013). The interdisciplinary future of supply chain management research. *Decision Sciences*, 44, 413–429.

Schoeneborn, D., Blaschke, S., & Kaufmann, I. M. (2012). Recontextualizing anthropomorphic metaphors in organization studies: The pathology of organizational insomnia. *Journal of Management Inquiry*, 22, 435–450.

Schön, D. A. (1965). *Displacement of concepts*. London, UK: Tavistock Publications.

Schon, D. A. (1993). Generative metaphor: A perspective on problem-setting in social policy. In A. Ortony (Ed.), *Metaphor and thought* (2nd ed., pp. 137–163). Cambridge, UK: Cambridge University Press.

Shackelford, T. K., Goetz, A. T., & Buss, D. M. (2005). Mate retention in marriage: Further evidence of the reliability of the mate retention inventory. *Personality and Individual Differences*, 39, 415–425.

Shoemaker, P. J., Tankard, Jr, J. W., & Lasorsa, D. L. (2004). Creativity and theory building. In P. J. Shoemaker, J. W. Tankard & D. L. Lasorsa (Eds.), *How to build social science theories* (pp. 145–164). London, UK: Sage Publications Inc.

Smith, K. G., & Hitt, M. A. (2005). *Great minds in management: The process of theory development*. Oxford, UK: Oxford University Press.

Sorci, G., & Garnier, S. (2019). Evolutionary ecology: Evolution of parasitism. In B. D. Fath (Ed.), *Encyclopedia of ecology* (2nd ed., 304–309). Amsterdam, Netherlands: Elsevier.

Stuart, F. I., & Tax, S. (2004). Toward an integrative approach to designing service experiences. Lessons learned from the theatre. *Journal of Operations Management*, 22, 609–627.

Swedberg, R. (2020). Using metaphors in sociology: Pitfalls and potentials. *The American Sociologist*, 51, 240–257.

Tate, W. L., Bals, L., Bals, C., & Foerstl, K. (2019). Seeing the forest and not the trees: Learning from nature's circular economy. *Resources, Conservation and Recycling*, 149, 115–129.

Touboulic, A., McCarthy, L., & Matthews, L. (2020). Re-imagining supply chain challenges through critical engaged research. *Journal of Supply Chain Management*, 56, 36–51.

Tsapelas, I., Fisher, H. E., & Aron, A. (2010). Infidelity: When, where, why. In W. R. Cupach & B. H. Spitzberg (Eds.), *The dark side of close relationships II* (pp. 175–196). New York, NY: Routledge.

Tsoukas, H. (1991). The missing link: A transformational view of metaphors in organizational science. *Academy of Management Review*, 16, 566–585.

Tsoukas, H. (1993). Analogical reasoning and knowledge generation in organization theory. *Organization Studies*, 14, 323–346.

Van den Bulte, C. (1994). Metaphor at work. In G. L. Laurent, G. Lilien & B. Pras (Eds.), *Research traditions in marketing* (pp. 405–425). Norwell, MA: Kluwer Academic Publishers.

Veldorale-Brogan, A., Lambert, N. T., Fincham, F. D. D., & DeWall, C. N. (2013). The virtue of problem-solving: Perceived partner virtues as predictors of problem-solving efficacy. *Personal Relationships*, 20, 511–523.

Villena, V. H., Revilla, E., & Choi, T. Y. (2011). The dark side of buyer–supplier relationships: A social capital perspective. *Journal of Operations Management*, 29, 561–576.

Weick, K. E. (1989). Theory construction as disciplined imagination. *Academy of Management Review*, 14, 516–531.

Weick, K. E. (1995). What theory is not, theorizing is. *Administrative Science Quarterly*, 40, 385–390.

Wieland, A. (2020). Dancing the supply chain: Toward transformative supply chain management. *Journal of Supply Chain Management*. https://doi.org/10.1111/jscm.12248.

Wilkinson, I. F., & Young, L. C. (1994). Business dancing: An alternative paradigm for relationship marketing. *Asia-Australia Marketing Journal*, 2, 67–80.

Zarch, Z. N., Marashi, S. M., & Raji, H. (2014). The relationship between emotional intelligence and marital satisfaction: 10-year outcome of partners from three different economic levels. *Iranian Journal of Psychiatry*, 9, 188–196.

Victoria Stephens (MA, Oxon (University of Oxford)) is a Lecturer in Supply Chain Management at South Wales Business School, University of South Wales. Current research interests include the role and use of metaphors in thinking differently about issues related to sustainability and supply chain management.

Lee Matthews (PhD – University of Manchester) is Assistant Professor of Business and Society at the International Centre of Corporate Social Responsibility (ICCSR), Department of Strategy and International Business. Dr Matthews current research interests include Sustainable Supply Chain Management, with an emphasis upon environmental sustainability and environmental rights.

Joep P. Cornelissen (PhD. Manchester Metropolitan University) is a Professor of Corporate Communication and Management, Department of Business-Society Management at Rotterdam School of Management, Erasmus University. His main focus of my research involves studies of the role of corporate and managerial communication in the context of innovation, entrepreneurship and change. In addition, I also have an interest in questions of scientific reasoning and theory development in management and organization theory.

Hefin Rowlands (PhD, Cardiff University) is a Professor of Quality Management at the University of South Wales, UK. He has been working in the field of Quality Engineering and Quality Management for over 30 year. His research publications cover Quality Engineering quality improvement, AI applications to quality tool and techniques. His current research interest is in quality improvement methods applied to Industry 4.0 developments.