

How to Advance Theory through Literature Reviews in Logistics and Supply Chain Management

Durach, Christian F.; Kembro, Joakim; Wieland, Andreas

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How to advance theory through literature reviews in logistics and supply chain management

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Table 1 Four literature review types

Dimensions	<i>Literature Review Types</i>			
	Inductive	Contextualized explanation	Theory testing	Interpretive sensemaking
Review Process	Iterative within-study and cross-study analysis of selected empirical studies within a specific domain/phenomenon	Developing an in-depth understanding of the theory-activating mechanisms	Integration of observed effect sizes across studies	Identification and comparison of unique interpretations of the world around individual actors
Nature of research process	Objective search for small-scale generalization	Judgment on mechanisms in the causal chain	Objective search for effect sizes	Subjective search for meaning
Ex-ante role of theories	Theory is the result of the review process	Theories provide the backbone for exploration of mechanisms	Theories provide the backbone for testable hypotheses	Theory is the lens to interpret the world
Opportunities that arise from these assumptions	Pushes theoretical boundaries; generates domain knowledge; integrates studies with various methods	Explores domain-specific causation in theories; integrates studies of various methods	Solidifies domain-specific knowledge; explores new research opportunities	Explore and compare perspectives of individual actors
Review outcome / Purpose	Exploration and identification of patterns (“what”, “why” and “how”); explanation in the form of testable propositions; conceptualization of theoretical constructs; challenging theoretical ideas	Explanation of theory-activating mechanisms (“for whom,” “in what circumstances,” and “when”); new constructs and propositions	Validation of theories; conclusions on the form of cause-effect linkages; indications of research gaps	Understanding of how individuals interpret the world around themselves; identification and definition of variables/constructs; plausibility tests and challenging of theoretical ideas
Theoretical contribution	A suggestive theory, often an invitation for further work on the phenomenon opened up by the review	A contextualized theory, that integrates disparate previous literature	A validated theory that can be confidently built upon	A contrasted comparison of individual perspectives

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3 **Title:** How to advance theory through literature reviews in logistics and supply chain
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5 management
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8 **Purpose:** The discipline's most common uses for literature reviews—identifying gaps,
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10 developing research agendas, and categorizing the literature—too often fail to challenge,
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12 change, or advance theoretical perspectives. The authors offer guidance to theorization through
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14 literature reviews. The key to theory advancement is consistency between the state of theory
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16 and the chosen review type.
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19 **Design/methodology/approach:** A conceptual approach is taken. The authors identify
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21 shortcomings in literature reviews of logistics and supply chain management (L&SCM)
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23 research and develop a framework to aid theorization from literature.
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26 **Findings:** Literature review types are categorized as *inductive theory building*, *contextualized*
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28 *explanations*, *theory testing*, and *interpretive sensemaking*. We argue that the effectiveness of
29
30 a review type depends on the prior state of theory, which ranges from nascent, to intermediate,
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32 to mature. We propose the interpretive sensemaking review as a novel review type rooted in
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34 the interpretive paradigm.
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38 **Practical implications:** This study should be of immediate interest and value to logistics and
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40 supply chain management scholars—as well as scholars in other fields—because it offers a
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42 pathway to theory development through literature reviews. Appropriate applications of the
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44 proposed review types will result in more comprehensive theories.
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48 **Originality/value:** This article lays down arguments for the need to change the way L&SCM
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50 scholars use literature reviews. It extends earlier work from the authors (Durach *et al.*, 2017; A
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52 New Paradigm for Systematic Literature Reviews in Supply Chain Management, *Journal of*
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54 *Supply Chain Management*), by outlining four review types, and offering further insights to
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56 theorization, as is typically the goal in the synthesis step of literature reviews.
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Keywords: Literature reviews, theory, logistics, supply chain

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Introduction

Literature reviews are an established part of the logistics and supply chain management (L&SCM) domain.¹ They have been instrumental in building frameworks (Seuring and Müller, 2008), advancing certain paradigms (Gunasekaran and Ngai, 2005), and offering insights into L&SCM-related practices (Power, 2005). Recently, however, concerns have been voiced over the ability of reviews to further advance our domain (Carter and Washispack, 2018). The editor of the *International Journal of Physical Distribution & Logistics Management* argued that a mere map of the literature, with overviews of content and themes across a large body of work, is backward-oriented and no longer sufficient for advancing scientific knowledge (Wong, 2021). Reviews that identify gaps, develop research agendas, or categorize the literature routinely fail to challenge, change, or advance existing theoretical perspectives (Breslin and Gatrell, 2020). We contend that scholars have not yet realized the potential of literature reviews to build theory and help develop our domain.

In our earlier work (Durach *et al.*, 2017), we pointed toward the need to advance literature reviews as a central vehicle of knowledge development. This article extends our earlier work and links it to the goal of advancing theory through literature reviews. Specifically, we seek to help reviewers (for simplicity, we call them *researchers* in the following) find more effective ways to theorization. We offer a pathway beyond what Breslin and Gatrell (2020) call the “miner approach” to literature reviews with a “prospector approach,” which seeks to expand theoretical boundaries and generate domain knowledge.² Specifically, we seek to move beyond the dominant approaches to reviewing the literature in L&SCM—identifying gaps, developing a research agenda, or categorizing the literature—by offering four distinct approaches to

¹ Our understanding of a literature review is a study whose key contribution is a conclusion drawn from a review of the existing literature. We exclude studies that summarize literature to identify an area for contribution, but whose key contributions are the study’s empirical/analytical findings.

² The miners–prospectors distinction is similar to the distinction between “integrative reviews” and “problematizing reviews” in Alvesson and Sandberg (2020). The goal of the latter is to “start a new conversation about the review phenomenon,” in order to advance theory.

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3 synthesizing literature, each aimed at advancing theory. By theory, we mean a way to impose
4
5 “conceptual order on the empirical complexity of the phenomenal world” (Suddaby, 2014, p.
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7 1) We would refer the reader to Whetten (1989) for a comprehensive understanding of the
8
9 present conceptualization of theory.
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12 Our key argument is that theory cannot be advanced merely by employing one review type
13
14 or another. In order to advance theory, the researcher must seek “consistency” between the
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16 current state of theory (i.e., the state of knowledge on a certain topic; Edmondson and
17
18 Mcmanus, 2007) and the review type. Researchers will likely fail to advance theory if there is
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20 an “inconsistency.” Imagine a researcher who seeks to assess current knowledge on certain
21
22 causal links with a literature review type that is suited for theory testing, while the available
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24 literature on the topic has hardly agreed on definitions of concepts, mechanisms, and causes.
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26 Or imagine a researcher who seeks to uncover unidentified connections in a well-developed
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28 literature where new, managerially relevant connections are rather unlikely to be revealed.
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30 Consequently, both reviews will struggle with a lack of input information, which limits the final
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32 contribution, or a lack of novel findings. To extend Isaac Newton’s famous metaphor: Such
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34 reviews fail because they use inappropriate footwear (review instruments/types) to “stand on
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36 the shoulders of giants”. Good science builds on prior knowledge, but one needs the right
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38 equipment to successfully ascend.
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43 This article seeks to help researchers who need to synthesize literature but are uncertain
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45 which approach is best. Our examples are mainly L&SCM-specific, but with a level of
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47 generality to also serve related disciplines.
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50 The article is structured as follows: First, we introduce the four literature review types and
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52 elaborate their uses. We then propose our “consistency model,” which links the review types
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54 and the current state of theory. We conclude by discussing the potential of combining the
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3 different review types to tackle some of the idiosyncrasies and challenges pertaining to L&SCM
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5 studies. Finally, we conclude and present directions for future research.
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8 **Four types of literature reviews**

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10 In this section, we discuss the four review types, each of which approaches and integrates prior
11 knowledge differently. This discussion will be useful to novice researchers but should also
12 interest more experienced researchers seeking to expand their methodological repertoires with
13 literature reviews.
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19 Before outlining the review types, we point toward potential issues with trying to synthesize
20 too many articles in one literature review. Researchers often aim to cover a large amount of
21 literature in their reviews to suggest comprehensiveness, but this approach inevitably
22 compromises the researchers' ability to treat the literature in a thoughtful manner. The outcome
23 of trying to cover too much is often very little, as it becomes difficult for the researcher to
24 simultaneously judge study quality ("garbage in, garbage out"), master the various study
25 artefacts, and keep an eye on the plausibility of theory. We refer the reader to Durach et al.
26 (2017) for a similar contention. Dissimilarities between artefacts—we call them
27 *idiosyncrasies*—typically rise with the number of studies synthesized. The detriment to this
28 approach is often theoretical imprecision, although an inexperienced reader may wrongly
29 interpret the large number of sampled studies as a sign for academic rigor. We agree with
30 Alvesson and Sandberg (2020) that sometimes "less can be more".
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46 ***Literature reviews as inductive theory building***

47 An inductive literature review has the potential to generate new theory by exploring a diverse
48 set of literature. Inductive literature reviews are opportunities to create domain specific theories
49 and knowledge. L&SCM has relied heavily on grand theories originating in other fields. The
50 use of grand theories to inform our research models has its merits, particularly in such a young
51 discipline; but it has also ignited a lively debate on why L&SCM scholars have not developed
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their own theories and whether they should do so (Carter, 2011; Carter *et al.*, 2015; Chen and Paulraj, 2004; Choi and Wacker, 2011; Craighead *et al.*, 2016; Swanson *et al.*, 2020). We believe inductive literature reviews offer a methodological process that can help generate such domain-specific theories. Figure 1 illustrates the corner points and interactions of this process.

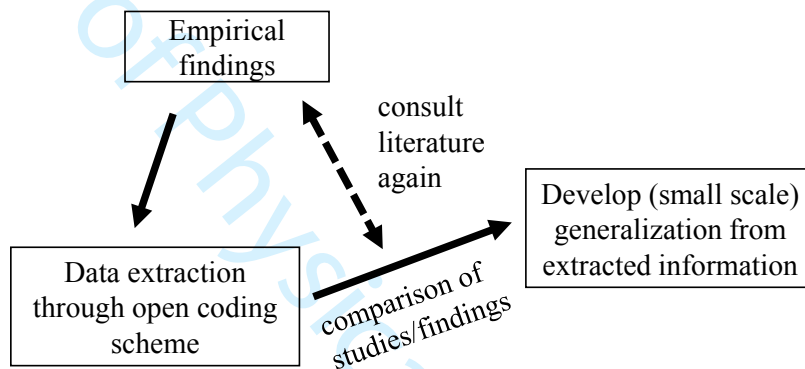


Figure 1 Synthesize literature through inductive theory building.

The inductive approach offers an avenue for stepwise theory building that avoids the “miner approach,” which too often “culminate[s] in mere descriptions, [or] that count[s] things for the sake of counting” (Bourgeois, 1979, p. 443).

An inductive review is iterative, moving between empirical findings, coding, and generalized propositions. It is both a systematic and a creative process, usually requiring a team of experienced researchers. Elsbach and Knippenberg (2020, p. 7) describe the process of an inductive review as a “careful examination and critique of the extant literature, with an eye toward identifying themes, patterns, relationships, and gaps in understanding”; the process also calls for creativity in “integrating existing frameworks with insights gained from the critical analysis to formulate a new perspective regarding the topic.” Proceeding from a general documentation, read-through, and understanding of the collected studies (Durach *et al.*, 2017), the inductive review involves a detailed within-study and cross-study analysis (very similar to the case-study analysis described in Miles and Huberman, 1994). The *within-study analysis*

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3 generates ideas, themes, and concepts from each of the primary studies; and initiates concurrent
4 data reduction and (open) coding. Gradually, by mapping study-specific causal networks (also
5 sometimes referred to as “displays”; Miles and Huberman, 1994), we might see new
6 relationships between variables emerge from the reviewed literature—inviting a closer look at
7 underlying themes or patterns (e.g., what are the contrasting versus the most influential
8 variables). With multiple researchers involved, each researcher should independently develop
9 causal networks. Divergent judgements between the researchers can then be assessed,
10 documented, and resolved. Alvesson and Sandberg (2020) stress the need to undertake “out-
11 boxing” (i.e., to liberate oneself from conventions and institutionalized ‘truths’) to avoid losing
12 imagination and creativity.
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25 The *cross-study analysis* is the process of comparing the study sample. Similarities and
26 differences between the study-specific causal networks should allow the researchers to develop
27 a better understanding of general patterns between the identified variables (Hoon, 2013; Miles
28 and Huberman, 1994). These general patterns can then be used to develop a meta-causal
29 network. The cross-study analysis involves the additional organization of data displays,
30 considering, for example, category matrices (i.e., interactions between crossing dimensions or
31 variables) and category networks (i.e., establishing links between a set of nodes).
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41 It should be clear by now that researchers conducting an inductive review must balance
42 creativity with a rigorous structuring, analysis, and coding of the literature. The structuring
43 process includes the development of clusters in the literature, noting outliers, making
44 comparisons, matching patterns, identifying relationships between variables, and subsuming
45 particulars into the general. The iterative analysis of the coding system and comparison within
46 and across studies reduces the risk of missing alternative explanations and helps establish the
47 validity of the findings.
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3 The potential outputs of an inductive literature review are manifold. Examples of inductive
4 theory building include the conceptualization of a new phenomenon; the identification of new
5 concepts and relationships existing theory does not explain (see Alvesson and Sandberg, 2020);
6 or a challenge to theoretical ideas from empirical findings. Another potential output is the
7 development of testable propositions. Such propositions should address the “what” (concepts),
8 the “why” (causal connections), and/or the “how” (mechanisms that explain causality via
9 simple connections or mediations).
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18 ***Literature reviews as contextualized explanations***

19 The contextualized literature review helps to create or improve our knowledge of “for whom,”
20 “in what circumstances,” and “when” certain phenomena can be observed (Whetten, 1989). A
21 deeper understanding of such causal mechanisms requires an iterative approach involving both
22 inductive and deductive reasoning.
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29 The motivation for contextualized literature reviews arises from prior and mostly case-study-
30 based literature (Welch *et al.*, 2011). This literature rejects causal homogeneity, or the idea that
31 mechanisms exist that lead to causation in the same way in all circumstances. In this sense, it
32 is similar to the abductive research approach, which is concerned with the particularities of
33 specific situations. Proponents of this viewpoint argue that the generalization of theory depends
34 on a thorough understanding of the particular context (Fleetwood and Ackroyd, 2004). In fact,
35 many L&SCM studies reject “one-size-fits-all” solutions to designing and managing supply
36 chains (see, e.g., Claycomb and Frankwick, 2004; Parker *et al.*, 2008; Brandon-Jones *et al.*,
37 2014).
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49 As a logical conclusion of rejecting “one size fits all” theories, we have embarked on a
50 persistent chase to get reality right in every new scenario—even though that goal can, according
51 to critical realists, never be achieved. The aim is to understand contingent relations in terms of
52 causal mechanisms, which explain how an outcome is or is not brought into being (Miller and
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Tsang, 2011). The elucidation of causal mechanisms typically requires the analysis of many related studies with non-comparable situations/contexts (Sayer, 1992; Welch *et al.*, 2011). We will build our suggested procedure for a contextualized explanation review on Miller and Tsang's (2011) step-wise approach of testing management theories. The corner points and interactions of the procedure are highlighted in Figure 2.

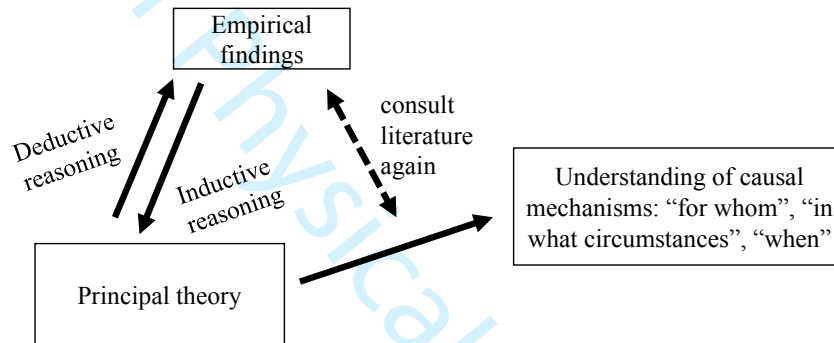


Figure 2 Synthesize literature as contextualized explanations.

The researchers begin by formulating a theory and the principle causal mechanisms that might account for the hypothesized relations. We follow Hall (2006) and call this the “principal theory.” However, the researchers should also adduce one (or more) alternative explanations to account for study outcomes that weaken or even reject the principal theory. The next step is to develop a stringent assessment of the validity of the principal theory (Miller and Tsang, 2011). Therefore, the researchers need to read the literature closely (and sometimes even get in touch with the authors themselves) to understand the mechanisms that should occur if the principal theory is valid. The challenge is to also consider the descriptive power of other explanations not offered by the principal theory.

Notes should be taken on “the sequence of those events, the specific actions taken by various types of actors, [...] as well as other observations designed to establish whether the causal chain that [the principal] theory anticipates is present” (Hall, 2006, p. 28). This is more than the mere search for “moderating variables,” as this type of review seeks to explore whether the

mechanisms observed in the studies are consistent with—or could refine—the mechanism proposed in the principal theory.

The researchers should then reach a conclusion regarding the activating mechanisms of the principal theory, and carefully construct a causal chain of evidence from the sample studies, keeping in mind that multiple mechanisms can exist that lead to the same outcome—which is what has been called equifinality (Gresov and Drazin, 1997). The greatest challenge here is that researchers need to make a simultaneous judgment about the plausibility of the theory and the validity of the reviewed studies. As Welch *et al.* (2011, p. 749) point out, “such an approach to causality has been defended as providing stronger explanatory power than the ‘weak’ correlational form (‘if X changed by a certain amount, then Y will have changed by a related amount’) offered by the regularity model.”

Literature reviews as theory testing (meta reviews)

A theory-testing literature review formally tests theory through the synthesis of multiple studies. It aims to validate and solidify knowledge, and, at times, reject what is thought to be true (Goldsby and Autry, 2011). This review type does not just formally test existing propositions but can also explore and identify missing moderating variables (Manhart *et al.*, 2020); question prior and rival theories (Rosenzweig and Easton, 2010); and identify the conceptualizations of constructs as relationship drivers or hinderers (Jackson and Schuler, 1985).

Schmidt and Hunter (2014) have spent most of their academic careers exploring how a literature review can generate more accurate estimates of theoretical relationships than any single quantitative study could achieve. This review type is typically referred to as meta-analysis. It synthesizes the results of primary studies to provide more accurate estimates of effect sizes. The goal is to produce cumulative knowledge that can then “be more confidently extolled to both academic and practitioner constituencies” (Goldsby and Autry, 2011, p. 324).

In essence, this approach is similar to that used in the natural sciences, such as medicine or psychology, with highly standardized paradigms (Tranfield *et al.*, 2003).

Meta-reviews offer an objective methodology to assimilate study results with statistics and ultimately improve the accuracy of individual conclusions. The precondition for meta-reviews is that the literature is rich with studies using the same variables and constructs. Yet, this requirement is rarely met in contemporary L&SCM research.³ We highlight the corner points and linearity of this review type's process in Figure 3.

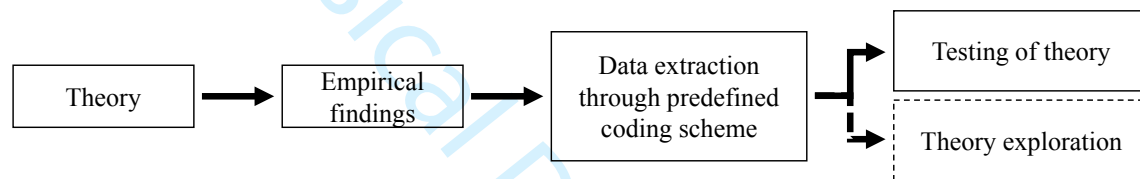


Figure 3 Synthesize literature through theory testing.

This type of literature review usually starts with an existing theory that includes clearly defined constructs. The researchers then sample articles that have operationalized these constructs and provided effect sizes specific to their sample. In the bare-bones meta-review approach, researchers then list the identified effect sizes (usually using either Cohen's d or Pearson's correlation coefficient r) and sample sizes. The studies' sample sizes are then used to weight the identified effect sizes, so the researchers can estimate the overall effect size and associated standard errors. For details of meta-analytical procedures, such as correction of the biasing effect of study artefacts, we recommend Hedges and Olkin (1985) and Schmidt and Hunter (2014).

³ It may also be implausible to assume that complex social phenomena related to L&SCM can be synthesized with a methodology that has its roots in the natural sciences, where such phenomena do not exist (see Sorell, 2017).

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3 The role of meta-analysis in theory development is straightforward. Meta-reviews can either
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5 be used for simple theory testing or to identify the “white spaces” within theories. For theory
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7 testing, meta-analysis can obtain more reliable estimates of effect sizes in situations where it is
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9 difficult to obtain enough data to achieve accepted levels of statistical power. One such example
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11 in the L&SCM domain is data collection in supply chain triads/networks. Two studies have
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13 attempted to collect data in buyer-supplier-supplier triads, but both remained below 40
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15 complete triads (Durach *et al.*, 2020; Wu *et al.*, 2010). In such complex study settings, the
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17 necessary sample size for reliable estimates can sometimes be prohibitively large. Meta-reviews
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19 can help to overcome this challenge. Instead of rejecting a study simply because of sample-size
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21 issues, each study is a data point contributing to a later meta-analysis that will develop our
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23 knowledge beyond any individual study.
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27 Meta-analysis can also be used for theory exploration (identification of “white spaces”)—
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29 though it is not the key purpose. Theory exploration through meta-analysis may be useful in
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31 situations where theory is unambiguous, but prior studies on the theory have findings with high
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33 variability across organizations or settings. In such situations, meta-reviews can provide
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35 empirical building blocks to identify the “white spaces” of our theories (Schmidt and Hunter,
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37 2014). Interested readers should reference the 75% rule suggested by Schmidt and Hunter
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39 (1977).⁴ Manhart *et al.* (2020) apply this rule to identify missing moderators, leading to an
40
41 extension of theory.
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45 Like other review types, meta-reviews have pitfalls and drawbacks. Some of the most
46
47 obvious problems with meta-reviews are “publication biases,” also called the “file drawer
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49 problem.” Researchers often struggle to publish studies whose findings are non-significant or
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51 repetitive of previous studies. Reviewers may struggle to include relevant studies that have not
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56 ⁴ The 75% rule indicates that if less than 75% of variance in effect-size estimates is because of artifacts (i.e.,
57 sampling error variance, unreliability, and range restriction), it is likely there is substantive variance and, thus,
58 the search for moderators is warranted.

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3 been published in leading journals despite methodological rigor. This problem, however, is not
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5 L&SCM-specific and has been discussed extensively in other places (Pagell, 2020).
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8 Another key problem for meta-analysis, which is particularly prominent in our domain, is an
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10 inconsistent use of models to operationalize similar constructs across studies (see Wieland *et*
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12 *al.*, 2017). For example, Geng *et al.* (2017), in their meta review, chose to combine the effect
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14 sizes of ROA and ROE into one. Meta-analyses presume that effect sizes based on different
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16 measures are directly comparable (Nugent, 2016). Nugent (2008) has argued that an invariance
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18 condition must hold for reliability-corrected effect sizes based on different measures to be
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20 directly comparable. Considerable variability in effect sizes can exist across measurement
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22 procedures that fail to meet universal score validity invariance. This variability can negatively
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24 affect meta-analytic results. The inconsistent use of measurement procedures in our domain
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26 substantially hampers the meaningful comparison and synthesis of studies via meta-analysis.
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30 What could be done to deal with the inconsistent use of measurement procedures across
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32 studies? One approach is to exclude studies *a priori* on grounds of inconsistent measurements.
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34 However, particularly in L&SCM, where most of the results are not based on randomized
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36 experiments, methodological shortcomings in sampling are prominent. The only remedy for
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38 sampling issues in meta-analysis is increasing the number of studies per relationship. Therefore,
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40 a more feasible approach would be to include all studies that meet basic construct-validity
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42 requirements and treat the remaining judgments about measurement differences (or even
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44 methodological quality) as hypotheses to be tested empirically. This can be done by separate
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46 meta-analyses on subgroups of studies that do or do not have the definitions/methodological
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48 feature in question. If the results are essentially identical, then the hypothesis that measurement
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50 procedures affect study outcomes is not supported and conclusions can be drawn from a
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52 combined meta-analysis.
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Literature reviews as interpretive sensemaking

The final review type is the interpretive sensemaking review. Interpretive studies are particularly rare in L&SCM and, to the best of our knowledge, no interpretive review has been carried out to date. We believe that such a review type could provide valuable and theory-advancing guidance to other researchers. This section should not be read as a definitive guideline, but rather the start of a methodological discussion on how such a review type should look.

In general, interpretivism seeks to understand the subjective perspective of an individual actor (Darby *et al.*, 2019; Welch *et al.*, 2011). An interpretive understanding of the theorizing process is not a mechanistic stepwise approach (Hudson and Ozanne, 1988) but rather an “appreciation of the often intuitive, blind, wasteful, serendipitous, creative quality of the process” (Weick, 1989, p. 519). This requires researchers to make what Klag and Langley (2013) have called a “conceptual leap”. Thus, theorizing in this sense is not a linear problem-solving process; it is a process of sensemaking which involves simultaneous parallel processing (Bourgeois, 1979; Weick, 1989).

The fact that interpretive studies are almost absent in leading L&SCM journals does not mean there are no interpretive studies related to SCM. In fact, excellent studies can be found in adjacent disciplines, such as geography (e.g., Mansfield, 2003) and accounting (e.g., Free, 2008). Such studies suggest that interpretive approaches could lead to insightful studies in our domain. There are, however, certain hurdles when it comes to interpretive *literature reviews*. One could argue that the systematizing that underlies the other types of reviews is antithetical to interpretive research, which tends to avoid any generalization of knowledge. Instead, the goal of interpretive research is an appreciation of subjectivity and “thick descriptions” (Geertz, 1977) of individual cases. At first glance, this raises the question of whether literature reviews can be conducted in a way that could be described as “interpretive”. The fact that there are

literature-review sections in most published interpretive studies indicates that interpretive reviews are entirely possible.

An interpretive literature review could integrate several subjective perspectives—that is, simultaneously focus on more than one actor. Interpretive scholars argue that an individual creates a “virtual reality” around them (Fabbe-Costes *et al.*, 2020; Westley *et al.*, 2002). This aligns well with the contemporary definition of the supply chain as a complex adaptive system that is “bounded by the visible horizon of the focal agent” (Carter *et al.*, 2015, p. 93). It is surprising that this clear, albeit implicit, link has not led to a significant number of interpretive studies in the supply chain literature, let alone reviews. One possible reason may be the traditional strength of an engineering approach to SCM research questions, a neglect of social science approaches, and the dominance of certain ontological and epistemological choices (Darby *et al.*, 2019; Wieland, 2021). Figure 4 illustrates the envisioned corner points and interactions of an interpretive review, as discussed below.

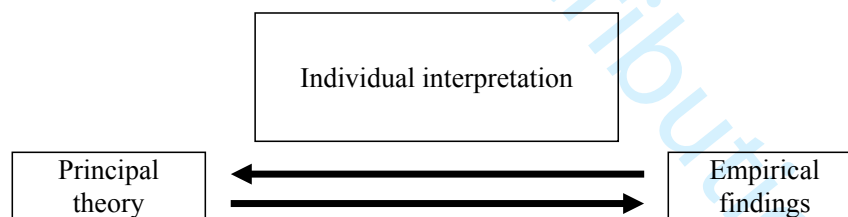


Figure 4 Synthesize literature reviews through interpretive sensemaking

An interpretive review study could illuminate and track different perspectives of focal actors, acknowledge individual vocabularies, and tell bold stories without putting these stories in a hierarchy of truth. Such a study would contrast different motives, meanings, and experiences and place actors in proper social contexts. Instead of aiming to synthesize existing knowledge into one objective truth, such a review could illuminate the contradictions between different actors. An interpretive review is a stronger vehicle for a more general theoretical engagement with disputes, contestations, politics, and non-equilibrium states. One method is to categorize

1
2
3 each actor in the individual studies and to use the review to investigate the cross-level linkages
4
5 between these categories. The result would be a panarchical synthesis that acknowledges the
6
7 simultaneous existence of multiple narratives and their interaction across scales of space, time,
8
9 and meaning (see Wieland, 2021).
10

11
12 It is important to note that the authors of an interpretive study also take a subjective
13
14 perspective. In an ideal world, a literature review would draw on the raw data of the individual
15
16 studies, such as transcribed interviews, rather than the authors' interpretations of this material.
17
18 Because these data are usually not available, literature reviewers need to be aware of the
19
20 potential misinterpretations this indirect approach might cause.
21
22

23
24 Although a keyword search might identify relevant studies, this search strategy limits a
25
26 review to specific words the authors have chosen. A keyword complies better with an
27
28 interpretive approach if the employed keywords focus on the subjective nature (e.g., the name
29
30 of a certain industry or even company), not on selected constructs. It is, however, in line with
31
32 interpretivism to track how the meanings of constructs have changed over time and space (see
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34 Hudson and Ozanne, 1988; Wieland, 2021). This could be done by pursuing a
35
36 forward/backward search strategy.
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39
40 The potential outputs of an interpretive review are manifold, from the identification and
41
42 definition of variables/constructs to plausibility tests (e.g., how prior theory relates to different
43
44 actors' sensemaking; which actors do and do not buy into certain ideas and their theoretical
45
46 underpinnings), to challenges to theories depending on certain contextual factors that are
47
48 difficult to quantify (e.g., because they are ambiguous, dynamic, or emerging).
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51 **Consistency between state of theory and literature review type**

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53 We will next discuss how the four review types can accommodate the different methodological
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55 demands of the state of theory in a topic field. Understanding the state of theory on a particular
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3 topic is key to identifying the appropriate type of literature review. To illustrate the need for
4
5 consistency between state of theory and literature-review type, we integrate the discipline's
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7 literature on the scientific process (e.g., Handfield and Melnyk, 1998) with the literature on the
8
9 state of theory of a certain topic (Edmondson and McManus, 2007) and offer a *consistency*
10
11 *model* to aid future literature reviews.
12

13 14 ***Defining the consistency model***

15 Edmondson and McManus (2007) suggested three different states of theory along a continuum:
16
17 nascent, intermediate, and mature. *Nascent theory* applies to situations with very limited
18
19 understanding and agreement on relevant phenomena and the connections between them.
20
21 Definitions and concepts are typically either non-existent or inconsistent. By contrast, *mature*
22
23 *theory* applies to situations where it is possible to clearly posit the characteristics and conditions
24
25 that determine “for whom,” “in what circumstances,” and “when” a certain phenomenon can
26
27 be observed (Whetten, 1989). Mature theory requires broad agreement on definitions and
28
29 concepts. *Intermediate theory* is positioned between these two extremes. It refers to situations
30
31 in which the literature has some understanding of the fundamental “what,” “why,” and “how”
32
33 questions of certain phenomena, but is still missing answers to the “for whom,” “in what
34
35 circumstances,” and “when” questions. Intermediate theory often requires additional concepts
36
37 and a better understanding of the relationships under investigation.
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42 It is not always straightforward to clearly delimit each stage and pinpoint the current state of
43
44 theory when reviewing the literature. We still believe that these three states are useful in
45
46 choosing the appropriate review type. Researchers can only make relevant theoretical
47
48 contributions when they achieve “consistency” between state of theory and review type.
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50 Researchers may apply a particular review type exceptionally well but still fail to effectively
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52 advance theory if they misalign the review type with the current state of theory.
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Figure 5 depicts what we call the *consistency model*. This model depicts the overlaps between the four review types and the different states of theory. It also depicts how review types differ in purpose, as discussed in the previous sections. We see potential in applying multiple review types in combination to increase theoretical rewards, as will be discussed later.

State of theory Purpose of review	Nascent	Intermediate	Mature
Explore an objective reality (Most typical form or reasoning: induction)	Inductive theory building		
Explain an objective reality (Most typical form or reasoning: deduction)		Contextualized explanations	
			Theory testing
Make sense of a subjective reality (Most typical form or reasoning: sensemaking)	Interpretive sensemaking		

Figure 5 The *consistency model* between state of theory and review type

Application of the consistency model

The consistency model suggests *inductive theory building* reviews are most suitable for exploratory endeavors on subjects in a nascent theory stage. The review type can also be appropriate in situations with an intermediate state of theory because the review type's exploratory nature can solidify the precision of central concepts.

Let's construct an L&SCM-specific research example to illustrate a state of theory in which inductive review provides the most value. In recent years, our domain has expended great energy to identify *how* to establish social sustainability in modern day supply chains (Busse *et al.*, 2016; Hannibal and Kauppi, 2019; Wilhelm *et al.*, 2016). A comprehensive picture of *why* firms choose to prioritize or develop corporate social sustainability is still missing. We thus conclude that the literature on this topic is still in a nascent state of theory. Following the consistency model, the strongest insights will be gained through a synthesis of existing literature

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2
3 that builds theory inductively. The inductive theory-building literature review is most effective
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5 for emerging L&SCM sub-domains (e.g., triads in supply networks, omnichannel logistics,
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7 blockchain technology) where research is still accumulating. The goal of such reviews should
8
9 be small-scale generalizations, with potential outcomes such as conceptualization of the
10
11 emerging phenomenon, identification of concepts and relations between variables, and
12
13 development of testable propositions addressing the “what,” “why,” and “how.” These sub-
14
15 domain theories can be seen as temporary guides for further empirical inquiry. As domain
16
17 knowledge matures, they will contribute to more comprehensive L&SCM theory. For emerging
18
19 areas, it may be necessary and adequate to go beyond academic journal papers to consider grey
20
21 literature such as conference proceedings, dissertations, and practitioner reports. We refer to
22
23 Carter and Rogers (2008) as well as Richter and Brühl (2021) as examples of reviews whose
24
25 methodological approach comes close to our idea of an inductive theory building review.
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27
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29
30 The second literature review type, *contextualized explanations*, functions almost as a link
31
32 between an inductive review that seeks to discover a phenomenon and a theory-testing review.
33
34 It helps answer the questions of “for whom,” “in what circumstances,” and “when” that are
35
36 common in the intermediate stage.
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39
40 Let us again use an L&SCM-specific research example. The principal theory that increased
41
42 information-sharing between a supplier and a buyer reduces disruption risk. The causal
43
44 mechanism could be a growth in trust. Because trust might not be directly observable, the
45
46 researchers could use the sampled articles to identify possible manifest effects of trust on
47
48 contracts, coordination, and negotiation processes between two organizations, leading to
49
50 indirect support for the unobserved mechanism (see Miller and Tsang, 2011). Through
51
52 deductive and inductive reasoning, this principal theory can be tested and revised for L&SCM.
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54 The article by Aragón-Correa and Sharma (2003) does not provide detail on its methodological
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3 approach, but its results resemble what we envision to be the outputs of a review that seeks to
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5 provide contextualized explanation.
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8 Literature reviews as *theory testing* (i.e., meta-analysis) are appropriate to solidify
9
10 knowledge on certain phenomena. This review type is most effective in a more mature stage of
11
12 theory, where research questions and hypotheses are focused on clearly defined concepts.
13
14 Hardly any topic in L&SCM has yet reached a mature stage of theory with clearly defined
15
16 concepts, which, at least for the moment, renders this review type less useful in our domain.
17
18 Meta-analyses are also appropriate for theory testing. However, the methodology is more
19
20 comfortably applied in situations with mature theory, hence, its categorization in the right part
21
22 of our consistency model (Figure 5).
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26 Examples of this review type exist in L&SCM (Geng *et al.*, 2017; Golicic and Smith, 2013;
27
28 Leuschner *et al.*, 2013, 2013, 2014; Mackelprang *et al.*, 2014; Manhart *et al.*, 2020; Rosenzweig
29
30 and Easton, 2010; Wowak *et al.*, 2013). These studies have identified topics in well-researched
31
32 areas of L&SCM with a sufficiently large body of literature and a mature state of theory. Well-
33
34 researched areas include operational capability development, risk management/resilience,
35
36 supply chain integration, environmental sustainability, and logistics services. These seminal
37
38 studies indicate that meta-analysis is a promising approach to accelerate cumulative knowledge.
39
40 However, we find no study that approached the inconsistent use of measurement procedures in
41
42 their sample studies in the way discussed earlier in this paper—that is, empirically tested
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44 judgments about measurement differences.
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48 The fourth review type we propose for L&SCM is potentially the most distinctive. Although
49
50 our article is focused on methodology and theory—not ontology and epistemology—this review
51
52 type is particularly suitable for paradigmatic choices that are still rather uncommon in our
53
54 domain. Literature reviews can be used for *interpretive sensemaking*, focusing on the subjective
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56 perspective of individuals. This new review type has the potential to illuminate how individual
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1
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3 entities in supply chains make sense of their realities. This process could be insightful and useful
4
5 at all stages of theory.
6

7
8 Examples of L&SCM questions suitable for interpretive study are: “[W]hat are the factors
9
10 that managers consider in the design and implementation of sustainable SCM practices? [How
11
12 do managers’ understand] the consequences for themselves, the organization, the supply chain,
13
14 and society?” (Darby *et al.*, 2019, p. 401). An interpretive review could build on the different
15
16 perceptions of different informants on a certain topic, e.g., a specific textile supply chain. Some
17
18 of these studies might investigate the perspectives of workers in Bangladesh; others might take
19
20 the brand company’s perspective in the European Union; and still others might take the view
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22 of consumers in the United States. There could also be studies of the perspectives of politicians
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24 and human rights organizations. Integrating these perspectives in an interpretive way would
25
26 need to acknowledge the subjective perspectives of the different actors instead of attempting to
27
28 generalize. Interpretive reviews could acknowledge a diversity of individual perspectives of an
29
30 objective reality or, as some argue, even reject the existence of an objective reality altogether.
31
32 Such reviews would show, for example, how workers make sense of the world around them,
33
34 potentially not even perceiving the supply chain and instead focusing on the daily challenges
35
36 of hard work, family life, and survival or of pressure, career, and stress. We could not identify
37
38 any study, outside or inside of our discipline, which has conducted a review in the described
39
40 way, but the recent methodological literature on interpretivism could serve as a source of
41
42 inspiration (e.g., Darby *et al.*, 2019; Mees-Buss *et al.*, 2020).
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47 **Combining the review approaches and tackling the SCM study idiosyncrasies**

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49 So far, we have mainly presented the four review types in isolation. In this section, we briefly
50
51 highlight opportunities to use multiple review types in combination; then, we look more closely
52
53 at the link between the review types and the idiosyncrasies of SCM studies as pointed out in
54
55 Durach *et al.* (2017); and finally, we provide a summarizing table of these review types.
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3 In principle, we see potential to use multiple review types in a single study. Applying two
4
5 review types can also be mutually rewarding, particularly in situations where we have indicated
6
7 overlap between the review types (see Figure 5). For example, contextualized reviews help us
8
9 understand the contexts in which a certain phenomenon can be observed. Related observations
10
11 can either be used as input for the literature search that leads to theory testing through meta-
12
13 analysis or be formally tested in a meta-analysis. It is also worth noting that meta-analyses are
14
15 not sufficient to make causal claims, which are becoming increasingly relevant to our domain.
16
17 The causal relevance of the obtained estimates still remains a matter of judgement (Weed,
18
19 2000), and can partly be addressed through a literature review that seeks contextualized
20
21 explanations (see previous section). Furthermore, inductive reviews can be used to uncover
22
23 phenomenon that, if the prior literature on the topic permits, can be the starting point for
24
25 developing contextualized explanations.
26
27

28
29
30 However, we cannot think of a situation in which the first three review types—inductive
31
32 theory building, contextualized explanations, and theory testing—can be effectively applied
33
34 together, because a research topic cannot be in a nascent, intermediate, and mature theory state
35
36 at the same time. Here, interpretive sensemaking could build a bridge, as it is applicable across
37
38 the continuum. It allows researchers to focus on and contrast individual perspectives or
39
40 narratives, which can also be investigated using one of the other three approaches. For example,
41
42 phenomena that occur in dyadic relationships could be investigated objectively with the theory-
43
44 testing approach, while the subjective perspectives of actors at both ends of the dyad could be
45
46 investigated with the interpretive approach. This combined approach could lead to a broader,
47
48 deeper, and more nuanced understanding of dyadic phenomena. This would often require
49
50 contrasting different ontological and epistemological assumptions. At this point, we should note
51
52 that reviews may also be combined with other research methods. For example, combining a
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3 review with empirical data (e.g., data about meaning or experience) can help to enhance
4
5 theoretical clarity.
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8 In Durach *et al.* (2017), we referred to six ontological and epistemological idiosyncrasies:
9
10 theoretical boundaries, unit of analysis, sources of data, study context, definitions and
11
12 operationalization of constructs, and research methods. It should be clear by now, that a link
13
14 exists between these idiosyncrasies and the state of theory, and, by implication, the
15
16 appropriateness of a literature review type. However, this link is not always straightforward, as
17
18 the six idiosyncrasies can take on different roles depending on the state of theory and review
19
20 type: For example, *definitions and operationalization of constructs* is directly linked to the state
21
22 of theory. If constructs are inconsistent, we will find ourselves in either a nascent or an
23
24 intermediate theory state with little opportunity to effectively apply a meta-review. Similarly, a
25
26 particular *research method* in a primary study (e.g., analytical modeling) may prevent this study
27
28 from being included in a traditional meta-analysis, which in turn will hamper theory
29
30 development. However, a meta-analysis may be valuable when applied to a phenomenon that
31
32 has been observed using different *sources of data*. Additionally, differences in *study contexts*
33
34 can provide clear opportunities for an effective application of contextualized explanation
35
36 reviews. As discussed above, this also relates to differences in *units of analysis*. Lastly, and
37
38 most obviously, the goal of all of these reviews is to move our *theoretical boundaries*.
39
40
41
42

43 The intention of our 2017 description of idiosyncrasies was not to discourage researchers
44
45 from conducting literature reviews. As we have tried to argue in this article, we can and should
46
47 see the L&SCM idiosyncrasies as opportunities for theorizing. When recognized in a literature
48
49 review, they can help analyze and categorize the wealth of literature in our domain. We do
50
51 acknowledge that our domain evolves, which will require adaptations to the discipline's
52
53 idiosyncrasies. For example, significant idiosyncratic changes could justify the need for an
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3 inductive literature review of an L&SCM subdomain where the theoretical landscape had
4
5 previously been described as mature.
6
7

8 Disciplinary crises can emerge when the predominant theories no longer hold up (Kuhn,
9
10 1996): In normal phases of science, a discipline may proceed in the Popperian way, which is
11
12 based on the scientific method. This can develop nascent theory into mature theory (as
13
14 illustrated in the consistency model; Figure 5), as has been observed in L&SCM. There might,
15
16 however, be paradigm shifts. For centuries, Newton's theory of physics developed from nascent
17
18 to mature until Einstein's theory replaced it. Einstein's new paradigm initiated a new phase of
19
20 normal science. New narratives of digitalization and planetary boundaries might also shift the
21
22 paradigm in L&SCM. Positivist interpretations of transaction cost and resource-based theories
23
24 could be replaced by complex and dynamic multidisciplinary approaches. In this case, a more
25
26 imaginative and creative "out-boxing" approach is required to build new theory.
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28
29

30 It is important to recognize that some review types are better suited to looking back, while
31
32 others are more suitable for looking forward. In phases of normal science, in which concepts,
33
34 relationships between these concepts, and environmental conditions are relatively stable, a
35
36 meta-review, for example, can ensure that existing pieces of knowledge are brought together in
37
38 a binding manner to obtain "final" clarity. During scientific revolutions, on the other hand, it
39
40 becomes more important to critically question existing knowledge. Recent and ongoing crises
41
42 (COVID-19, populism, climate) could, in fact, initiate paradigm shifts in L&SCM. For
43
44 example, it might be necessary to reject previous L&SCM results about outsourcing and
45
46 offshoring, as the narratives of prosperity, growth, and globalization are increasingly met with
47
48 social, ecological, and political criticisms (Wieland, 2021). An interpretive review could help
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50 to build and contrast emerging narratives.
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3 To conclude, we provide a rough overview of the review process, nature of the research
4 process, role of theory, opportunities, review outcomes, and theoretical contributions for each
5 of the four literature review types in Table 1.
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16 Insert Table 1 apprx. Here
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22 **Conclusion**

23
24 Extending our earlier work, the purpose of this paper was to offer guidance for more effective
25 theorization from literature. We hope to help the discipline move beyond the mere mapping
26 exercises (i.e., gaps, themes, research agendas) that have been criticized in L&SCM reviews
27 (Wong, 2021). We have argued that the key to theory development through literature reviews
28 is to understand the state of theory on a particular topic and choose the review type that is most
29 fitting. No review type will automatically lead to good theorizing. Theoretical advancements
30 are more likely when the review type fits the state of theory. We have depicted this connection
31 in a consistency model (Figure 5). Future research is encouraged to use the consistency model
32 as a guideline to identify the literature review type appropriate for their study.
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44 Additionally, with our proposed interpretive sensemaking review type, we seek to break new
45 ground. This review type has, so far, not yet been implemented in L&SCM. However, we hope
46 that our discussion and tentative proposal prove useful as our discipline sees an increase in
47 interpretive studies.
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54 To conclude, we hope that the thoughts and structures offered in this article will help
55 researchers make further, insightful use of literature reviews in the years to come. We also hope
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3 that successful researchers will apply the consistency model, which should aid their theorizing
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5 efforts and provide further transparency to the readership. Finally, future research is encouraged
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7 to improve on the review types, particularly ‘literature reviews as interpretative sensemaking’,
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9 as this type is less common.
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