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Capturing the state of the science to change the state of the science: A categorization approach to integrative reviews

David J. G. Dwertmann[1] | Daan van Knippenberg[2]

[1]School of Business, Rutgers University, Camden, New Jersey, U.S.A.

[2]LeBow College of Business, Drexel University, Philadelphia, Pennsylvania, U.S.A.

Correspondence
David J. G. Dwertmann, School of Business-Camden, Rutgers University, 227 Penn St, Camden, NJ 08102, U.S.A.
Email: david.dwertmann@rutgers.edu

Summary

Integrative reviews, reviews of an area of research that not only describe the state of the science but also advance it through integration and synthesis of the evidence, make unique contributions to the literature. We discuss this unique value of integrative reviews, highlighting that integrative reviews of the literature are positioned in the conceptual space between descriptive reviews and theory papers, to position this study's focus: presenting an approach to conduct such reviews. This approach focuses on the systematic consideration of similarities and differences between findings, identifying the underlying categorizations that capture these similarities and differences, and developing new theory anchored on these categorizations for similarities and differences not predicted by existing theory. We outline how authors following this approach should make the different steps in this process of categorization and theory development transparent in their presentation to increase replicability of the review and more precisely identify the locus of potential disagreements concerning the conclusions of the review. Following these steps also provides clearer anchors to assess the validity of the conclusions of the review in the publication process, for readers, and in follow-up primary research.

KEYWORDS

categorization, integrative review, synthesis, theory

1 | INTRODUCTION

Organization and management research increasingly relies on review articles to organize and synthesize the ever-growing research output in the field (Rousseau, Manning, & Denyer, 2008). Not only the *Journal of Organizational Behavior*, which published an annual review issue since 2013 that evolves into the Annual Review and Conceptual Development Issue from 2021 forward (Dasborough, 2020), but also other high-quality outlets publish review articles. *Academy of Management Annals*, *Annual Review of Organizational Psychology and Organizational Behavior*, and *International Journal of Management Reviews* are relatively new journals dedicated to publishing review articles; *Journal of Applied Psychology* and *Organizational Psychology Review* recently explicitly invited integrative reviews; and journals such as *Journal of Management*, *Journal of International Business Studies*, *Journal of World Business*, and *Leadership Quarterly* have adopted the approach of publishing annual or biannual review issues. These reviews are impactful, at least as judged by citations. Clearly, reviews of the literature are more important for research in management and organizations than ever before.

This rise in reviews is not surprising, given that review articles represent a major form of scholarship and offer great opportunities to move research fields forward. From that perspective, it is a concern that despite increasing attention (cf. Torraco, 2016), our understanding of how to conduct a good literature review is still underdeveloped compared with our understanding of how to conduct empirical research. For the latter, we have a well-developed literature on a plethora of topics related to research methodology (e.g., Aguinis,

Gottfredson, & Culpepper, 2013; Becker et al., 2016; Johnson, Rosen, & Chang, 2011; Porter, Outlaw, Gale, & Cho, 2019), well-developed guidelines for how to present this literature (e.g., the American Psychological Association's *Publication Manual*), and ample examples in the published literature that clearly follow a common approach both in terms of methods and in terms of how the research is reported. In contrast, it has been noted that review articles do not follow standardized formats such as empirical articles (Bem, 1995; Torraco, 2005). Review articles have even been compared with works of art (Short, 2009) to convey that their execution and presentation can hardly be captured by a few simple rules for method and presentation. If this were true, this would be a problem both from the perspective of our ability to guide prospective authors of review articles in conducting and reporting their review and in terms of our ability to assess the quality of a review in the publication process or as readers. We believe, however, that whereas these observations may be descriptively true, looking forward there actually is a good basis for increased systematic guidance in conducting and reporting reviews.

In this article, we do not provide a review of the literature on reviews, but instead we aim to provide guidance on how to conduct integrative reviews—qualitative, narrative reviews of an area of research that not only describe the state of the science but also advance it through integration and synthesis of the existing evidence. This understanding of integrative reviews is well-aligned with others, including the definition used by the *Academy of Management Annals*, currently the only outlet exclusively dedicated to the publication of integrative reviews (Elsbach & van Knippenberg, 2018). We limit our main focus on reviews of the empirical evidence (i.e., excluding reviews of theories or methods per se) and extend prior work on how to write literature reviews more generally (e.g., Baumeister & Leary, 1997; Bem, 1995; Rousseau et al., 2008; Torraco, 2016) by introducing a categorization approach to conducting integrative reviews, which is intended to help authors identify and articulate areas for integration and reviewers, editors, and readers in reconstructing the logic and thus legitimacy of the authors' conclusions and contributions.

To accomplish this, we first discuss what integrative reviews are and how they can be positioned vis-à-vis other types of reviews such as descriptive reviews, meta-analyses, and others. We highlight the unique value of integrative reviews for organizational research in their potential to provide theory development, critique, and integration across different areas of study on top of the descriptive foundation of a review. This discussion sets the stage for the contribution of our study: an outline of a systematic categorization approach to conducting and reporting integrative reviews through the identification of similarities and differences between studies, determining the categorizations that capture these similarities, and the development of new theory anchored on these categorizations where existing theory does not predict observed similarities and differences. We conclude by discussing how following this categorization approach in conducting and reporting integrative reviews increases the replicability of such reviews, something that has been identified as a limitation of integrative reviews as they are currently conducted (Rousseau et al., 2008), and how categorization provides a basis for the evaluation of the validity of conclusions from the reviews in the publication process, by readers, and in follow-up primary research. Thus, as key contribution, we advance a framework for conducting and reporting integrative reviews that give guidance to authors as well as to other researchers assessing the validity of the review's conclusions.

2 | WHAT ARE INTEGRATIVE REVIEWS?

There are a number of different classifications and terminologies to capture reviews of the literature in various fields, and to some extent, these seem to reflect different labels to capture similar notions (Baumeister & Leary, 1997; Cooper, 1988; Grant & Booth, 2009; Paré, Trudel, Jaana, & Kitsiou, 2015; Rousseau et al., 2008). Because a key difference between reviews—the extent to which the review is integrative or only descriptive—is a matter of degree rather than categorical, we do not focus our discussion on taxonomies that suggest categorical differences. Rather, we focus on two characteristics of reviews that we see as particularly useful in capturing differences between reviews and that help define and position integrative reviews within the broader space of literature reviews: whether the review is quantitative or qualitative (a categorical difference) and the extent to which the review is purely descriptive or integrative (a continuum).

All reviews rely on existing studies as their data and on some kind of structuring of these studies/data to draw conclusions. Reviews differ, however, in whether they structure these studies quantitatively or qualitatively. Quantitative reviews that often focus on aggregation of findings (Rousseau et al., 2008) apply statistical or bibliometric methods such as meta-analysis (Schmidt, 2008; Schmidt & Hunter, 1977) and citation analysis (Zupic & Čater, 2015) to draw conclusions. In this process, quantitative reviews also generate or bring in additional data such as generated through coding of study characteristics for meta-analysis or study citations for citation analysis. In that sense, there is an empirical (i.e., new data) element to quantitative reviews. Qualitative reviews, in contrast, aim to qualitatively, narratively capture what can be concluded from a body of research. Even when this includes reliance on quantitative findings from empirical research, the conclusions are not quantified and appear more subjective than those from quantitative reviews. The distinction between quantitative and qualitative reviews is categorical in that quantitative reviews are first and foremost defined by the use of statistical methods. By implication, qualitative reviews are in part defined by the absence of statistical methods in drawing conclusions about a body of research.

Whereas the distinction between quantitative and qualitative reviews may be categorical, the second characteristic we highlight, the extent to which the review is descriptive or integrative, is continuous in nature. Closer to the one end of the continuum, descriptive reviews take stock of the state of the science, often on a specific

topic, by describing the existing studies and structuring this discussion to reach summary conclusions. An example for this would be van Knippenberg's (2011) review on leader group prototypicality. In this paper, he reviewed the published evidence concerning leader group prototypicality, the core concept in the social identity theory of leadership. He concluded that all studies reviewed reported results that supported the theory and that this support held across methods, operationalizations of leader group prototypicality, indicator of leadership effectiveness used as dependent variable, and country. Whereas there is value in such a review in that it captures the state of the science in a field of study, the review was not integrative in that it did not advance new conceptual insights through the integration of previously unconnected evidence and the development of new theory to account for the integration of findings. In the case of the van Knippenberg's (2011) review, the evidence did not call for such an integration; it could all be accounted for by existing theory. When a descriptive review reveals that there is evidence that is not accounted for by existing theory, however, this calls for a more integrative effort.

Integrative reviews move beyond the descriptive to advance the state of the science by integrating the available evidence to arrive at new insights; they do not merely summarize the state of the science but advance the state of the science by proposing new insights based on an integration of the evidence (Torraco, 2016). Integrative reviews relate the empirical evidence to existing theory, identify where the evidence is and is not predicted by theory, and provide theoretical extensions, for example, from other research disciplines or areas, to make sense of evidence that is not predicted by current theory. The distinction between descriptive and integrative reviews is not categorical but a matter of degree, with many reviews advancing at least some degree of integration; the shorthand labeling of integrative versus descriptive reviews is to capture the fact that many reviews are largely descriptive and that integrative reviews are different in having a more substantive integrative element. Putting it in perhaps more operational terms, we would propose that integrative reviews of the evidence should be able to explicitly identify the value-added conceptual insights their integration has achieved.

The extent to which reviews are integrative in principle is independent of whether they are quantitative or qualitative. On the descriptive end, meta-analysis can provide a quantitative description of the state of the science (e.g., an effect size for the relationship between two variables, an assessment of the homogeneity or heterogeneity of effect sizes, and an assessment of methodological influences on the effect). On the integrative side, meta-analysis could also identify patterns of results not predicted by theory (e.g., heterogeneity of effect sizes) and meta-analytically test post hoc hypotheses to address and explain these findings and thus advance new theory. While this does happen, the emphasis in meta-analysis in management is on testing a priori theory (Colquitt & Zapata-Phelan,-2007), and in that sense, meta-analyses are more like empirical studies with effect sizes and coding as data than like integrative reviews. As we noted, this is not to imply that meta-analysis could not be integrative in the sense we mean here. We believe that meta-analysis may be less likely to achieve such integration than qualitative reviews, however. For meta-analysis to achieve integration would require a more substantive number of effect sizes than qualitative reviews arguably need; although it would obviously be weaker evidence, a qualitative review could already propose an inductive account of theory-inconsistent findings with a lower number of studies than is viable for meta-analysis.

Qualitative reviews can range from purely verbal descriptions of study findings in the reviewed area to an integration that sheds new light on variations in study findings (Cropanzano, 2009). More integrative approaches include identifying redundancies between constructs studied in different literatures (Lim, Tai, Bamberger, & Morrison, 2020), integrating findings across different domains and literatures (Kuenzi & Schminke, 2009; Stouten, Rousseau, & De Cremer, 2018), clarifying the meaning and nature of constructs and concepts (Good et al., 2016; Piazza & Castellucci, 2014; Pollock, Lashley, Rindova, & Han, 2019), highlighting mismatches between theoretical assumptions and operationalization of constructs (Dwertmann, Nishii, & van Knippenberg, 2016), integrating different theoretical perspectives or theories (Zhang & Parker, 2019), integrating seemingly contradictory findings (van Knippenberg, De Dreu, & Homan, 2004), and methodological critiques based on the available empirical evidence to complement conceptual critique (van Knippenberg & Sitkin, 2013) among others.[1]

Even when both quantitative and qualitative reviews can be integrative in principle, as we noted above, there is a case to be made that qualitative reviews lend themselves better to integration as understood here: more evidence-driven rather than based on a priori theory. In line with this, the label "integrative review" is typically reserved for qualitative reviews (e.g., Rousseau et al., 2008; van Knippenberg, 2012). Integrative reviews have been defined as "a form of research that reviews, critiques, and synthesizes representative literature on a topic in an integrated way such that new frameworks and perspectives on the topic are generated" (Torraco, 2005, p. 356). They "move beyond description of a body of evidence to derive new insights through integration and/or critique" (Elsbach & van Knippenberg, 2018, p. 2). Whereas descriptive reviews focus on an inventory of findings, integrative reviews of the evidence go beyond that and provide a theoretical contribution to the literature that is based on the available evidence.

In this article, we focus on qualitative, integrative reviews of the empirical evidence (i.e., excluding reviews of theories or methods per se). Such reviews hold a unique position within the broader review landscape by offering theoretical contributions that descriptive reviews do not provide and being more flexible in achieving conceptual integration than meta-analysis (Elsbach & van Knippenberg, 2018; Rousseau et al., 2008). Meta-analysis has the obvious advantage over qualitative reviews that it quantifies relationships and can provide formal tests of hypotheses (i.e., that would capture a proposed theoretical integration). The downside of meta-analysis as compared with an

[1]Note that these examples are not mutually exclusive and some of these articles provide multiple of the exemplary integrations.

integrative review, however, is that meta-analysis is limited to the study of those relationships for which a sufficient number of effect sizes is available—which by implication also means that it is limited to the integration of quantitative research (and as we noted, in practice, meta-analysis in organizational behavior research is also employed to test a priori hypotheses more than evidence-driven integration). An abundance of high-quality evidence in support of a conclusion makes that conclusion stronger, and it is no critique on meta-analysis that it focuses its conclusions on areas where sufficient effect sizes are available for statistical analysis. A good integrative review would likewise base conclusions on the strength of the existing evidence. Importantly, however, integrative reviews have more options in terms of what they base conclusions on, and this allows them to paint a richer, fuller picture of the state of the science than a meta-analysis with its n-of-effect-sizes limitation ever can (i.e., the "price" that meta-analysis pays for the strength of its conclusions is the greater limitation in what it can draw conclusions from). Integrative reviews can incorporate new areas of research where too few quantitative studies and effect sizes on specific relationships for meta-analysis are available, but that may offer key elements for integration. They can incorporate qualitative research and theoretical articles and differentiate more in terms of the quality of the evidence offered by different studies (i.e., low-frequency variations that cannot be captured by moderator analysis in meta-analysis) to prevent insights from high-quality research to be "snowed under" by findings from lower quality research (cf. Oxman, 1994).

Rousseau et al. (2008), for example, suggest six criteria for evaluating the quality evidence. These are construct validity, internal validity, effect size, external validity or generalizability, intervention compliance, and contextualization. Particularly, the first four of these are part of solid methods training, and we will not provide any detail here. Intervention compliance refers to how well and consistent interventions are designed. A simple example would be whether all patients in a treatment group take their medication regularly and at the specified time. The higher the compliance rate, the stronger the causal evidence for certain effects. Contextualization refers to empirical evidence regarding how the context influences certain results. According to Rousseau et al. (2008), it goes beyond generalizability by considering why certain findings are limited to specific contexts. Applying these quality criteria, integrative reviews can put more weight on some studies than on others (van Knippenberg, 2012). In line with our focus on evidence-based integration, we understand strength of the overall evidence (i.e., based on all available studies) first and foremost as consistency across studies, especially when this also includes consistency across methods, research teams, levels of analysis, time, and study settings. In addition, we note that inconsistencies in findings can sometimes also be understood from a strength of evidence perspective (e.g., differences in findings for subjective vs. objective outcomes or for correlational vs. experimental observations).

What all this, in effect means, is that whereas a quantitative integration through meta-analysis may give us greater confidence in the conclusions reached than a qualitative integration ever can, an integrative review is better able to capture the entire evidence available. It is better positioned to advance the state of the science by drawing on low-frequency findings that may be key to integration of the available evidence. We thus see a clear case for the unique value of integrative reviews in advancing science. This observation is not to pitch integrative reviews against any other approach of reviewing the literature. The issue is not which is "better." Rather, what we posit here is that integrative reviews have a unique role in organizational research that cannot be substituted by other forms of review. From that perspective, it is somewhat surprising and perhaps somewhat worrisome that there are fewer guidelines and rules for writing qualitative reviews (Short, 2009; Torraco, 2005, 2016) than for their quantitative counterparts. There currently is no explicit "methods" statement for how to systematically conduct and report findings of integrative reviews.

In this paper, we outline such an approach. We focus particularly on evidence-based integration—integrative reviews of empirical studies—as opposed to reviews that focus on theory only or on methodological issues or take a critical view of prevailing assumptions on the part of researchers. Reviews of the empirical evidence are by far the most common form of reviews (e.g., consult the latest issues of the *Academy of Management Annals* or the latest annual review issues of *Journal of Management* or *Journal of Organizational Behavior* to see this in practice), and advancing an approach specific to such reviews allows us to give more specific guidance.

The starting point of the approach we propose is the observation that at root an integrative review revolves around the identification of similarities and differences between studies—similarities and differences in findings, in operationalizations, etc.—and determining the categorizations that capture these similarities and differences (e.g., different results for behavioral vs. perceptual outcome measures). These categorizations, we argue, are key because they provide the anchors for the theoretical interpretation and integration of the evidence. What we propose is a categorization approach to integrative reviews that makes this process of categorizing and interpreting similarities and differences more systematic and explicit. As we will outline in the following, the categorization approach to integrative reviews captures what we presumably to some extent already naturally do in reviewing the literature. The value of explicating and to some extent formalizing this categorization approach is that it guides authors of integrative reviews to more systematically and explicitly follow this approach and to report their review along the lines of this approach. This allows authors to more systematically review the evidence base and readers, reviewers, and editors to better assess the merits of the review and its conclusions.

3 | A CATEGORIZATION APPROACH TO INTEGRATIVE REVIEWS

A descriptive review that captures the state of the science in a particular field of research can be thought of as the foundation upon which

authors should build an integrative review (Parmigiani & King, 2019). In it, authors should identify the similarities and differences between studies (i.e., in findings and operationalizations) that lay the basis for integration. Authors could, for instance, review the literature to establish what we know about the antecedents of an outcome of interest (e.g., which factors affect team creativity?), the effects of a variable of interest (e.g., what are the consequences of performance-based pay?), or a combination of the two (e.g., what are the antecedents and consequences of empowering leadership?). To draw conclusions from the review, authors have to identify the similarities and differences between studies and study findings, which can include multiple disciplines (e.g., management, psychology, communication, and economics). Recognizing where multiple studies result in the same finding allows us to determine which conclusions we can base on a body of research. In its simplest form, this would mean recognizing that different studies find the same thing. For instance, all studies of the relationship between concepts A and B may find that A relates positively to B. In such case, where applicable, there would be added value in recognizing that this replication over studies is found, whereas studies differ in some meaningful way (e.g., methodology, with some being experimental and others field studies, or country where the data were collected, with some being from Western countries and others from Eastern countries).

Adding complexity, the review might show that study findings diverge, for instance, that some studies find a positive relationship between A and B, whereas others find a negative relationship. The question then is whether there are study characteristics that covary with the nature of the A–B relationship (e.g., A and B are positively related in studies of self-managing teams but negatively in studies of teams with a formal hierarchy). Studies would never be identical, and the judgment call for authors of a review is to determine the relevant aspects in which studies are similar and the relevant aspects in which studies are different. Identifying the underlying variables that capture similarities and differences between studies (in our examples in this paragraph: method, country, and team hierarchy structure) is an act of *categorization*.

Categorization is "the process of understanding what some thing is by knowing what other things it is equivalent to and what other things it is different from" (McGarty, 1999, p. 1). By categorizing observations as part of the same group, we implicitly conclude that it is a *useful reduction of reality* to treat them as identical for the purpose the categorization serves—here to understand the similarities and differences observed in the evidence base. Categorization is not just about capturing similarities and differences, though; it is how we imbue such categorizations with meaning that renders them so fundamental to (social) perception (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). We propose that this logic applying to categorization in human perception can be readily extended to be the basis of a structured approach to integrative reviews: identifying the categorizations that capture similarities and differences between studies and applying—or developing—theory to imbue these categorizations with meaning is the essence of generating integrative insights. Identifying similarities and differences between studies is the foundation for integration; it is what moves the review beyond a purely descriptive listing of the studies done in an area of research. Determining the categorizations that map onto similarities and differences in the evidence base lays the groundwork for conceptual integration. The categorization captures the variable underlying study differences and offers the basis for interpretation of these differences. Theory to make sense of the observed similarities and differences can then draw on this categorization. When this requires new theory, proposing this theory is the next step in achieving integration.

For an integrative review, the first question thus is which categorizations capture similarities and differences between studies. The next question is whether existing theory predicts these categorizations. Where existing theory predicts these categorizations (e.g., existing theory predicts that A and B are positively related in self-managing teams but negatively in teams with a formal hierarchy), the review can conclude that existing theory is supported across studies. Where existing theory does not predict these categorizations, the review has identified potential for value-added integration and theoretical extension. When the authors are able to propose new theory to explain why study findings vary as a function of the categorization—and ideally theory that is coherent with the broader body of theory in the area—the integration of the evidence represents value-added theoretical insights.

In conducting their literature review, it seems that most researchers go through this process of identifying similarities and differences, determining the categorizations capturing these similarities and differences, and interpreting these categorizations from a theoretical or methodological perspective in some shape or form. Importantly, however, authors do typically not explicate these steps—building the review from description of similarities and differences to advancing categorization-based integration—or necessarily take these steps in a systematic way. In the following, we describe what such a systematic categorization approach to integrative reviews would look like as a five-step process: (1) define the topic of review and search strategy, and conduct the search; (2) code studies in terms of an initial theory-based set of attributes and determine how well this captures similarities and differences in findings; (3) code studies based on attributes drawn from theory outside the review area or derived inductively to capture the observed similarities and differences not predicted by theory in the area of review; (4) propose new theory integrating theory-inconsistent findings anchored on the Step 3 categorizations; (5) determine an agenda for future research anchored in the theoretical integration (see Figure 1). We argue that systematically taking and reporting these steps (i) increases the value-added conceptual integration achieved by the review with a stronger anchor in the available evidence; (ii) provides a better basis for readers, reviewers, and editors to assess the merits of the review and its conclusions; and (iii) offers a better basis for follow-up research to contribute to further integration of the field of review. In the following, we first outline the value-added of explicitly following the described five-step approach, before further elaborating on each of the steps.

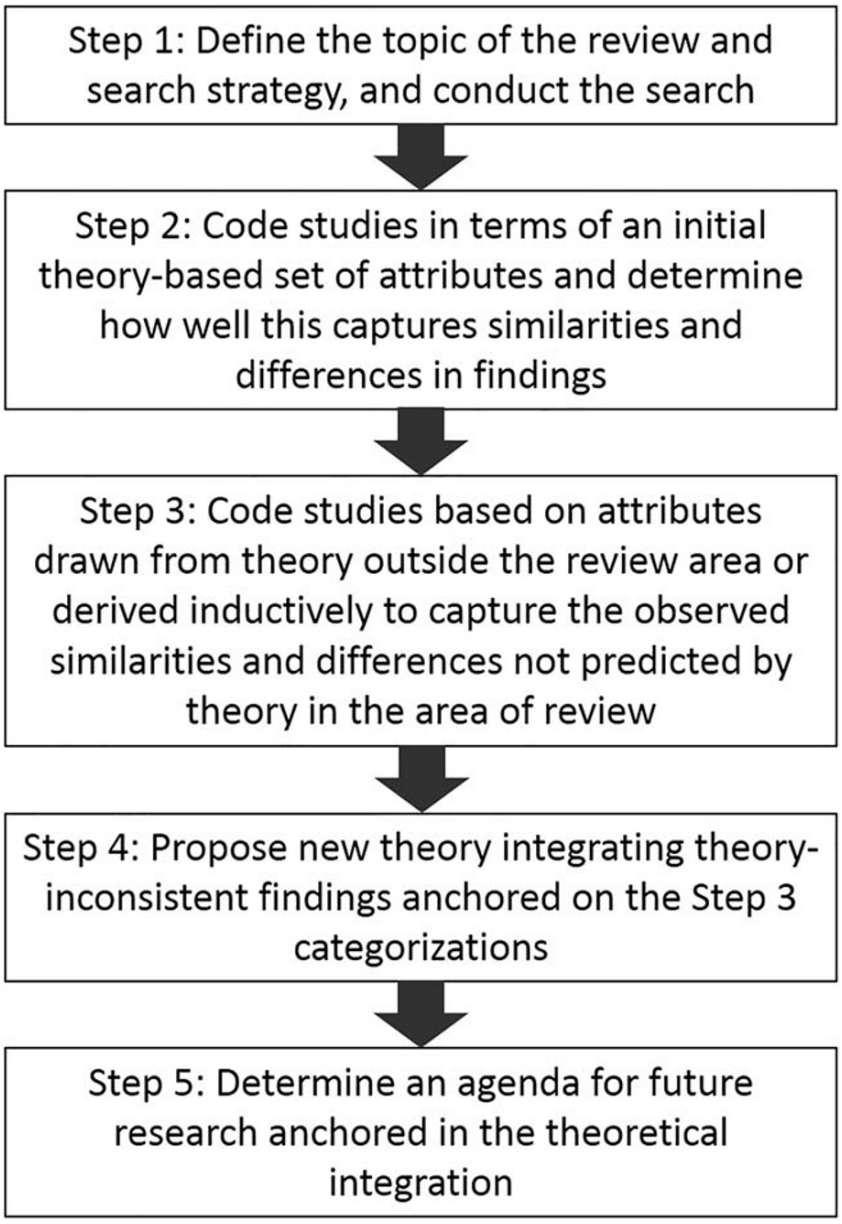

FIGURE 1 Recommended five steps for integrative reviews

4 | WHAT DO WE GAIN BY MAKING THE CATEGORIZATION PROCESS SYSTEMATIC AND EXPLICIT?

Currently, it seems that authors of review articles often, but not always, describe how they searched the literature and then present the review following a relatively generic structure. This typically includes structuring by (type of) independent variables studied (e.g., team composition vs. team process predictors of team creativity), by (type of) dependent variable studied (e.g., subjective evaluations of leadership, the job, and the organization vs. behavioral outcomes of leadership), by distinguishing antecedents and consequences of the concept central in the review, or by levels of analysis (e.g., individual vs. team level). Such structuring often results in a review that does not explore variations in findings and study characteristics in a systematic way. Such reviews may anchor conclusions on some similarities and differences between studies and findings but address others only in the descriptive part of the review (i.e., describe divergent findings within one of the structuring categories but not move beyond the conclusion that findings do not completely converge, or compare within structuring categories but not across).

The point is not that reviews have to account for every single finding in the literature. For one, the literature may hold chance findings (Baumeister & Leary, 1997). There may also be studies so disconnected from the main body of evidence that they stand out as different with no meaningful communalities with other studies in the review (other than meeting the inclusion criteria). Caution is in order here to not overemphasize anomalous findings or a disconnected study. That said, we believe that typically a more systematic effort can be made to account for similarities and differences in findings. This allows for a more holistic exploration of the opportunities for

integration as well as for the identification of findings that fall *outside* the range of that integration.

Another important advantage of our proposed more systematic approach is a clear distinction between findings that existing theory predicts and findings that require theory development (e.g., in the form of integration of theory from other literatures or new theory). Core to the notion of hypothesis-testing research is that we can have more confidence in findings that are predicted a priori based on theory (Kerr, 1998). To the extent that a review can establish that existing theory is supported across studies, this may not be the most exciting or novel conclusion, but it is an important conclusion in establishing the confidence we have in certain findings. Conversely, to the extent that new theory is required to account for findings emerging from the review, either because there are findings outside the scope of existing theory or existing theory is not supported, it is important to realize that any theory advanced is post hoc theory that follows an observation of the results rather than precedes it.

Therefore, an important conclusion here lies in the research agenda required to further substantiate the new theory. It might be human nature that authors of reviews often have a tendency to propose a research agenda that focuses on new areas of research and is inspired by observations about what is not or hardly studied but would be interesting to study. When the focus is on systematic conceptual integration, however, the priority would be research that directly serves that integration by either putting untested elements of new integrative theory to the test or by developing core implications of the new integrative theory. The net result here should be that a more systematic approach to the review should yield a more focused research agenda that prioritizes research with the greatest integrative value.

The approach we advocate involves not only a more systematic approach to conducting the review but also a more systematic approach to reporting the review. By following our proposed approach and reporting how the five steps were taken, authors allow readers, reviewers, and editors to better judge the merits of the review and its conclusions. It also better positions readers to determine the locus of potential disagreement. Is there an issue with how the field of review and the search is defined (i.e., is there literature that should be included or excluded)? Is there an issue with the conclusions about similarities and differences across studies and findings? Is there an issue with the categorizations proposed to capture these similarities and differences? Is there an issue with the theory proposed to explain the role of these categorizations? Clearly identifying the locus of disagreement allows for more focused debate and more precise and targeted follow-up research. In the publication process, it also allows editors and reviewers to give clearer guidance to the authors on how to develop their paper.

In sum, a more systematic approach to integrative reviews should result in better science. This should be the case because it guides authors to do a better job reviewing, because it allows readers to better draw conclusions about the quality of the review and its conclusions (and how to address potential shortcomings) and because it stimulates a more focused and integrative research agenda.

5 | A FIVE-STEP CATEGORIZATION APPROACH TO INTEGRATIVE REVIEWS

5.1 | Step 1: Define the topic of the review and search strategy, and conduct the search

A systematic approach to the definition of the population of relevant studies and the criteria for literature search is increasingly emphasized in the organizational sciences (Callahan, 2014; Denyer & Tranfield, 2009; Pautasso, 2013; Rousseau et al., 2008; Torraco, 2005). The approach we propose is no different in this respect, and we believe that it is important to explicate what we believe should be expected and why this is important. However, how to conduct a systematic literature search is probably the most well-defined step in the process of writing a review with books devoted to it (e.g., Fink, 2014; Hart, 2001; Jesson, Matheson, & Lacey, 2011). Because of this, instead of providing in-depth coverage of this topic, we refer readers to this existing work. Our general approach in writing this paper is to focus on what we see as lacking from the literature instead of providing a detailed account and review of steps and topics on which detailed advice exists (see, for example, the collection of guidelines for systematic reviews by Cochrane and others; Harris et al., 2018; Noyes et al., 2018; Noyes et al., 2018; Petticrew & Roberts, 2008).

As a first step, authors need to define the topic of the review. We do not see reasons for authors to limit themselves at this point, but we want to point out that it is often unclear whether the chosen topic lends itself for an integrative review. What we mean by this is that a review might conclude that the existing evidence supports existing theory (as in our earlier example of van Knippenberg's, 2011, review of the leader group prototypicality literature). Such a state of affairs does not ask for integration through new theory.

Any vagueness in the definition of the topic of the review feeds forward into a lack of clarity about what would be valid search terms and criteria for inclusion and exclusion. An explicit definition of key concepts and relationships of interests thus are in order, as well as a potentially relevant discussion of related concepts or relationships that would be excluded from the review. This is particularly important when different terms capture the same or closely related concepts and an explicit case needs to be made to clarify why they are combined in the review, or why the one is included whereas the other is excluded from the review. Some reviews of the team innovation literature have, for instance, made the case to also include team creativity research (Hülsheger, Anderson, & Salgado, 2009) even when a case can be made that creativity and innovation are different concepts (Perry-Smith & Mannucci, 2017; West, 1990).

An explicit definition of the concepts and relationships of interests is important in laying the foundation for defining the population of relevant studies and determining the criteria and keywords for a literature search as well as the criteria for inclusion and exclusion of the studies from the search in the review. This process involves first acts of categorization (i.e., which studies are categorized as relevant vs. irrelevant to the focus of the review?). Defining the search strategy

involves more than explicitly defining the topic of review and translating this to keywords, however. It also involves such choices as which databases to search, whether to include unpublished work, whether to only include (quantitative) empirical work or also qualitative work or theory papers, and the time period to cover (Rousseau et al., 2008). We are not arguing for specific choices here (e.g., there are arguments to include as well as to exclude unpublished work; Haddaway, Collins, Coughlin, & Kirk, 2015) but for transparency in the choices made. By reporting all keywords (rather than examples) and databases used, dates for literature searches, the number of results for the search, and the criteria used to decide on the inclusion and exclusion of studies (as well as the number of studies included and excluded, ideally based on review by multiple authors), authors enable readers to judge the validity of the chosen approach. They should be able to determine based on the topic definition and search and inclusion criteria whether there is research that is included in the search but should be excluded or whether important research is missing. One useful way to think about the requirements here is that the reporting of the review should include all the information to replicate the search (Torraco, 2005).

Importantly, by explicitly defining the topic of review, search strategy, and criteria for inclusion and exclusion, authors also stimulate themselves to reflect on these choices (e.g., how well do keywords for the search match the definition of concepts and relationships to review? Are there good arguments to limit the review to a certain time period or is this an arbitrary limitation?). Authors will also stimulate themselves to consistently apply these criteria (rather than for instance include some unpublished work they happen to be aware of while not making a systematic effort to include all unpublished work relevant to the review). What we wish to emphasize though is that based on our own experience, good literature searches often result in iterative processes in which by learning more about the literature one may find out about additional keywords to use, selection criteria to apply, and so forth. The key for authors is to provide sufficient information for editors, reviewers, and readers to be able to understand and reproduce their process. Explicitly taking Step 1 is thus an important first step in producing a high-quality review.

5.2 | Step 2: Code studies in terms of an initial theory-based set of attributes and determine how well this captures similarities and differences in findings

Core to integrating the evidence base is identifying similarities and differences between studies. A systematic approach to mapping similarities and differences requires coding studies in terms of relevant attributes. One way of doing so is by utilizing a table that contains information on each study. An example is Kuenzi and Schminke's (2009) tabs. 2–13 in which they code all studies on different forms of organizational climate by variables and position in the model (e.g., antecedent and moderator), study design and sample, and key climate results. Another example is tab. 1 by Piazza and Castellucci (2014) in which the authors code level of analysis, role of the focal variable, context, and key findings of the reviewed articles. Authors may start with a large table in which they code all kinds of characteristics of studies and later decide which parts of the table to report in the final article based on the ultimate focus of the review and integration. Another way of explicating such categorization is through visual representation. Pollock et al. (2019), for example, use a figure to show how the constructs of reputation, status, celebrity, and stigma contain different aspects of the evaluative dimensions rational, emotional, and moral to highlight differences between them. Even when authors may not think of what they are doing as coding, grouping studies together based on some attribute (as per our examples above: antecedents, consequences, level of analysis, and theoretical components) implies that studies were coded for this attribute.

We propose that authors base their initial coding of study attributes on theory in the area of review. The reason for this is that the initial coding and categorization of studies according to theory allows judging how well existing theory captures the pattern of findings observed in the evidence base. From that perspective, authors should refrain from introducing new categories that are not suggested by current theory in Step 2. Step 2 is mainly an assessment of whether new theory development is even necessary in a specific area of study. Of course, there may be multiple theories in a field of review that make overlapping, complementing, or contradicting predictions. This would not change the basic focus of Step 2 though. The goal is a systematic mapping of how well existing theory predicts the pattern of findings. It is also important that any attribute that theory deems relevant is applied in coding of the entire evidence base to prevent theory-confirmation biases by, for instance, only applying the coding to those studies explicitly invoking a particular theory (i.e., which is more likely to report support for the theory). This combats the risk of selective reporting of findings and conclusions that ignore some of the available evidence (i.e., studies and findings).

Three general conclusions may emerge from this descriptive review of the literature. A first possibility is that the available evidence supports a single existing theory in that a theory-based categorization of studies results in a coherent pattern of similarities and differences as predicted. This includes the possibility that there are multiple theories and that the evidence favors one theory over the other. When there is a theory in the field that accounts for the observed pattern of findings and there is variation in methodological characteristics of the studies, there is added value in determining that theory-based predictions generalize across methodological characteristics of the studies (e.g., different contexts, methods, and operationalizations, as per the example of the van Knippenberg's, 2011, review). This, in effect, requires a second round of coding for method-based study attributes that authors can derive inductively from the evidence base. When existing theory predicts the pattern of findings, the value of the review lies in establishing the strength and consistency of the support for the theory, but there is no need and basis for an integrative review.

A second possibility is that there are multiple theories in the field of review that collectively predict the pattern of findings but complement each other in that they concern different subdomains of the reviewed literature (e.g., different levels of analysis and different contexts). In such cases, there is a need for further integration in

proposing a broader-ranging theory that integrates the more domain-specific theories—an issue we revisit in the discussion of Step 3.

A third possibility is that the review uncovers findings not predicted by theory. The review may, for example, reveal a pattern of inconsistent findings across studies that in any single empirical study were written off as unexplained and inconsistent with theory. Alternatively, such findings may have been predicted by the studies' authors but based on a rationale that is not adopted more broadly within the area of review. Whatever form deviations from broader theory-based predictions take, they indicate the need to move from an essentially descriptive review to an integrative review. The next step would then be to identify the categorizations that capture these deviations from theory through another round of coding. We address this in our discussion of Step 3.

We propose that it is important for authors to explicitly differentiate between Step 2 and Step 3 not only in conducting the review but also in reporting the review in written form or in the form of a table that outlines the applied categorizations. Making this distinction allows for a clear assessment of how well the evidence base maps onto existing theory in the field of review. This clarity will also help in differentiating conclusions based on support for existing theory from conclusions based on post hoc theorizing to explain patterns of findings not captured by theory in the field of review (i.e., the former warrant more confidence than the latter; the latter would be strong anchors for a research agenda).

5.3 | Step 3: Code studies based on attributes drawn from theory outside the review area or derived inductively to capture the observed similarities and differences not predicted by theory in the area of review

An integrative account of findings not predicted by a single theory in the area of review is what moves a review beyond a description of the state of the science and towards value-added integration. As we noted earlier, the idea is not that every single finding needs to be integrated into a theoretical account. The nature of probability testing implies that there will be chance findings in the evidence base (Baumeister & Leary, 1997). Instead, a categorization approach to integrative reviews requires a *pattern* of findings—similarities and differences in findings that covary with similarities and differences on one or more attributes. A single anomalous finding is harder to explain with confidence because there is no evidence of studies sharing the attributes that distinguish the theory-inconsistent findings from theory-consistent findings, although it is not impossible to advance a conceptually coherent account of a sole deviating finding. A categorization approach in that sense inherently places the emphasis on findings that replicate across studies.

Where the first round of coding of study attributes can draw from existing theory, the next rounds of coding are more challenging and more iterative. This is because it may be less obvious which categorizations capture the similarities and differences that differentiate sets of theory-inconsistent findings from sets of theory-consistent findings. To a greater or lesser extent, such categorizations may be inductively derived by considering both more generic study attributes such as method, the context the data are drawn from (e.g., country, industry, and type of jobs), and attributes more specific to the field of review such as different operationalizations used for key variables or levels of analysis. Existing reviews can provide an important source for categorizations to consider because they typically structure a field of study. As such, the structure they outline may be a segue for identifying categorizations. Such categorizations may also be inspired by drawing on related fields, for instance by drawing on theory in interpersonal relationships to explain social network findings or by drawing on research in individual creativity to explain findings in team creativity research. In this respect, Whetten, Felin, and King (2009) provide a helpful account of dos and don'ts of theory borrowing in the organizational studies.

There is no silver bullet here, no “do this and you'll find it” advice. An important part of the value-added contribution of an integrative review lies in the authors' ability to identify those categorizations that capture similarities and differences between studies requiring integration, and that ability is strongly rooted in scholarly insight. That said, there is value-added in following a systematic approach in determining these categorizations. Such a systematic approach is important because it allows authors and readers to evaluate the full evidence for how well a given categorization captures similarities and differences in findings, both in an absolute sense and in comparison with other categorizations the authors explored. This is decidedly nontrivial. There are ample examples of literatures that have maintained conclusions that are not supported by the evidence based on incomplete reviews of the evidence, such as the notion that task conflict is positively related to team performance, whereas the evidence supports the conclusion that the relationship is negative (De Dreu & Weingart, 2003) or the idea that strategic dissent in top management teams is good for decision quality and firm performance, whereas the evidence shows that strategic dissent has a negative influence on these outcomes (Samba, van Knippenberg, & Miller, 2018). A systematic consideration of how well any categorization captures similarities and differences in findings thus is important in determining the strength of the evidence and in not overstating the integrative potential of a categorization.

This logic applies both to the second and third possibilities sketched in our discussion of Step 2 above (i.e., different theories in need of integration and findings inconsistent with existing theory). Regardless of whether the focus is on integrating theories or integrating theory-inconsistent findings and existing theory, the next step is to identify those attributes that distinguish studies with different sets of findings. For the integration of different complementary theories, these theories should provide anchors in identifying these attributes (i.e., differences between the theories presumably hold pointers for which study attributes would be relevant to their integration). For findings outside the scope of theory in the field of review, there will be a greater need for inductive identification of the attributes that capture differences in findings or for reliance on theory in related fields. It will also not be uncommon to inductively identify these

attributes and then search for theory that helps understand why these attributes would play a role, which in turn may result in identifying other attributes to explore based on these theories. The obvious advantage of drawing on existing theory is that it contributes to broader-ranging theory rather than theory proliferation when existing theory can be extended to develop a more integrative account of the evidence in the field of review.

It is important in Step 3 that authors not only apply the new coding of attributes to the subset of observations that require explanation. Instead, they should apply it to all studies (to the extent that this is possible) in order to systematically evaluate how well the identified categorizations in this second round of coding capture similarities and differences in the entire evidence base. This protects authors from selectively utilizing categorizations that do not generalize across studies. The ultimate goal of Step 3 is to identify the categorization or categorizations that best capture the similarities and differences in findings not predicted by existing theory. This may take the form of a subdivision of an earlier theory-based categorization (e.g., distinguishing not only between countries with collectivistic vs. individualistic cultures but also between horizontal and vertical individualism–collectivism). It can also result in an extension of the theory-based categorizations (i.e., introducing new factors that are not part of existing theory). Authors may conclude that new categorizations should replace existing categorizations (e.g., whether team diversity has positive or negative effects is not a matter of whether the outcome of interest is relational or performance but of whether moderating variables are conducive of intergroup biases or of information integration processes). Importantly, the focus in this step is on descriptive observation—identifying the categorization that best captures similarities and differences—and not on subsequent theoretical interpretation.

The importance of Step 3 concerns both the systematic approach taken in conducting the review and in reporting the review. It is important to distinguish between findings captured by theory-based categorizations as captured in Step 2, and findings captured by categorizations that are proposed by the authors in Step 3 in response to the observation of theory-inconsistent findings. This is important in determining the confidence in conclusions and the need for future research to substantiate conclusions. It is also important that authors do not only report the end result of their search for categorizations that capture the evidence but also report on alternative categorizations they explored in this process. Knowing which categorizations capture the pattern of findings less well is important in judging the merits of the proposed categorizations. A table or a list of explored categorizations, potentially along with a short explanation of why a specific categorization did not capture the pattern of findings, would be ways of increasing transparency.

We propose that explicitly distinguishing between Step 3 and Step 4 is also valuable for authors. Step 3 concerns what should be a relatively objective assessment of the evidence base, whereas Step 4 concerns the development of new theory. By advancing the Step 3 categorizations and the Step 4 theory as separate steps in the review process, the authors allow readers to more precisely identify the locus of any potential disagreement (i.e., on the categorizations intended to capture similarities and differences in findings or on the theory anchored on those categorizations). Such precision enables more focused and productive follow-up research to address these disagreements.

5.4 | Step 4: Propose new theory integrating theory-inconsistent findings anchored on the Step 3 categorizations

After identifying the categorizations that best capture the pattern of findings not predicted by theory in the area of review, the next step is to propose theory to explain why these categorizations capture the observed pattern of findings. Important to consider here is that parsimony is a hallmark of good theory (Eisenhardt, 1989) and the goal is theoretical integration not theory proliferation. An important element in the categorization approach to integrative reviews we propose is that it explicitly asks for integration. Theory anchored on the categorizations that capture what differentiates studies with theory-consistent and theory-inconsistent findings implies theory that links existing theory with new findings, and not just a theory to explain new findings. Take for example a case in which theory predicts that A relates positively to B, and the evidence not only shows support for this prediction but also includes studies in which A relates negatively to B. In this case, proposing theory to explain why A relates negatively to B in isolation would result in theory proliferation rather than integration. Thus, it is important to propose theory that explains why A sometimes positively relates to B and sometimes negatively relates to B.

Although it is possible that completely new theory is required to explain the full pattern of findings, an obvious starting point for the development of such new theory is to explore how the categorization that captures the differences between theory-consistent and theory-inconsistent findings can be integrated within existing theory. As with Step 3, the ability to formulate such theory relies in important parts on scholarly insight. However, in developing such new theory authors would anchor on the categorizations identified in Step 3. Indeed, the point of an integrative review is to develop value-added insights rooted in the evidence, and there is no place for theory not rooted in the available evidence (that too can be valuable but is the focus of a theory paper and not of an integrative review; Callahan, 2010). Any theory the authors develop in an integrative review *must* anchor on the categorizations they identify in Step 3. Fortunately, these categorizations should be a helpful anchor. In effect, they provide the search terms to look for theory in other areas that may speak to the categorization, and when new theory needs to be developed from scratch these categorizations clearly bound and focus these efforts.

The new theory developed to provide a more integrative account of the evidence base than existing theory can provide is the core contribution of an integrative review. Accordingly, authors should explicitly identify it as new theory. This is not just important to highlight the theoretical contribution of the review, it is also important in reflecting

on the fact that we would have more confidence in conclusions based on a priori theory than on conclusions based on post hoc theorizing (Kerr, 1998). That is, it is particularly valuable to empirically follow up on the new integrative theory both because it is broader ranging than previous theory and because it is developed post hoc. Thus, additional empirical evidence would be particularly valuable for these new integrative insights. The latter is the specific focus of Step 5, the final step we propose in developing an integrative review.

5.5 | Step 5: Determine an agenda for future research anchored in the theoretical integration

A good review of the literature would also offer a clear research agenda for the reviewed field of literature (Torraco, 2016). Integrative reviews are no exception to that rule, and as the final step of writing an integrative review, authors should propose a research agenda that ideally outlines ways in which the new theoretical insights from Step 4 can be tested. Thus, utilizing the insights from Step 4 to structure the agenda for future research is advisable. An important observation in this respect is that authors of review articles often seem to have the tendency to formulate a research agenda around a variety of things that have not been studied but would be interesting to study—and moreover to leave the theory development for these studies to future research. Even though novelty might seem particularly appealing, the risk associated with this approach is that the authors provide a laundry list of seemingly or actually unconnected research ideas.

We argue that a research agenda of an integrative review should be more focused and more theory driven. The future research agenda should be anchored in the categorizations uncovered in prior steps instead of a random list of ideas. As we noted in our discussion of Step 4, the outcome of Step 4 should be a new, integrative theory that is explicitly distinguished from the a priori theory that guided the empirical studies reviewed. Because this new theory is both integrative and post hoc, it is particularly valuable to substantiate and further develop in follow-up research. What this means, we propose, is that the research agenda of an integrative review should be anchored on the new integrative theory.

We see this as having two elements. The first would be to identify the integrative conclusions that should be substantiated in test of a priori hypotheses in follow-up research to provide stronger evidence for the new integrative conclusions. The second element would be the further theoretical development of the integrative theory—the development of further insights based on the proposed integration that is more distal to the current evidence base. Outlining such further developments would provide a road map to how future research may not only substantiate the proposed integration but also develop it further. The core point here is that a good integrative review would advance the field of research not only by proposing evidence-based integrative theory but also by proposing a research agenda to develop this integrative theory further. It is hard to outline more specific steps or a more specific structure here because our core advice is that decisions about this should be rooted in the theoretical contribution made—as the nature of these integrative insights vary, so will their implications for the research agenda.

6 | ASSESSING THE QUALITY OF AN INTEGRATIVE REVIEW

Based on the outlined five-step approach, how can we judge the quality of an integrative review? The basis of every review is a solid literature search with clearly defined criteria that result from a concise definition of the topic of the review and key concepts (Parmigiani & King, 2019; Torraco, 2005). Readers should be in principle able to replicate the literature searches given the provided information. Based on this, authors should provide an account of the field of review. However, this alone is not sufficient. In the words of Cropanzano (2009), authors should ask themselves "If someone had read the primary articles and also a meta-analysis, would he or she learn anything from my review article?" If the answer is "no," then you have probably written a straight summary without sufficient analysis" (p. 1,306–1,307). In line with this, we have highlighted the importance of theoretical contribution for integrative reviews. In this respect, integrative reviews are no different from high-quality empirical articles. Thus, the overarching question for the evaluation of integrative review articles is whether readers will think different about the reviewed area of research after reading the article. Did the authors review the entire evidence while accounting for existing theory in the field? Did the authors identify inconsistencies in findings and importantly, did they provide potential reasons based on categorizations that capture them? Do authors use these reasons and categorizations to integrate theory with theory from other fields, extend existing theory, or develop new theory that captures inconsistencies? Finally, do the authors provide relevant directions for future research that evolve out of the identified categorizations?

Another potential contribution of review articles is the identification of problematic research practices in the form of a critique (e.g., Dwertmann et al., 2016; Locke, 2007; van Knippenberg & Sitkin, 2013). Authors may point out methodological or conceptual problems and call for significant shifts in research approaches in the reviewed area. Key for the authors is to not only identify problems but also outline why the practices are problematic and provide specific guidance on how to address them. Although we do not provide a detailed account of this type of review here, we believe that our five-step approach can be applied to this form of review article as well and readers can use the above questions to assess the quality of the review.

7 | CONCLUSION

Research fields differ greatly, and this variation will feed into variation among the integrative reviews of these fields. It is therefore important to emphasize that we do not so much propose our five-step categorization approach as a blueprint for integrative reviews but as an ideal

type for integrative reviews. There is no one-size-fits-all in writing reviews (hence, no blueprint to be narrowly followed; Short, 2009); rather, the quality of integrative reviews will benefit from following the steps we outline as closely as the field of review allows. Most reviews in management research are reviews of quantitative hypothesis-testing studies, and we outlined our five-step approach with primarily such reviews in mind. Reviews may however also focus on methods or theory, or on conceptual or methodological critiques (Cropanzano, 2009). Our five-step approach would, to some extent, also hold for such reviews, but it would require that the authors determine how to best follow the spirit of the approach, compared with more common reviews of the empirical evidence for which this is more intuitive.

To recap, we have made the case that integrative reviews play an important role in not just capturing the state of the science but also changing the state of the science. It is not without reason that the number of published review articles has increased considerably over the past years (Rousseau et al., 2008). From this perspective, it is a concern that the literature lacked a clearly articulated systematic approach to conducting and reporting high-quality integrative reviews. Thus, our focus in the present paper has been on providing a clear definition and description of what integrative reviews are, including their unique value, and proposing such an approach to conducting and reporting integrative reviews. The outlined five-step categorization approach connects with how we believe authors would naturally approach an integrative review but at the same time stimulates them to take this approach more systematically and explicitly both in conducting the review and in reporting the review. The consequence of explicitly following this approach should be better science—better science in terms of the quality of the review, theoretical integration achieved, and research agenda proposed, and better science in terms of the transparency in reporting the review. This is not to say that our proposed approach should be immune to improvements—indeed, any further development can only contribute to the quality of our science.

ORCID

David J. G. Dwertmann https://orcid.org/0000-0003-2075-7484
Daan van Knippenberg https://orcid.org/0000-0002-0269-8102

REFERENCES

Aguinis, H., Gottfredson, R. K., & Culpepper, S. A. (2013). Best-practice recommendations for estimating cross-level interaction effects using multilevel modeling. *Journal of Management*, *39*(6), 1490–1528. https://doi.org/10.1177/0149206313478188

Baumeister, R. F., & Leary, M. R. (1997). Writing narrative literature reviews. *Review of General Psychology*, *1*(3), 331–320. https://doi.org/10.1037/1089-2680.1.3.311

Becker, T. E., Atinc, G., Breaugh, J. A., Carlson, K. D., Edwards, J. R., & Spector, P. E. (2016). Statistical control in correlational studies: 10 essential recommendations for organizational researchers. *Journal of Organizational Behavior*, *37*(2), 157–167. https://doi.org/10.1002/job.2053

Bem, D. J. (1995). Writing a review article for Psychological Bulletin. *Psychological Bulletin*, *118*(2), 172–177. https://doi.org/10.1037/0033-2909.118.2.172

Callahan, J. L. (2010). Constructing a manuscript: Distinguishing integrative literature reviews and conceptual and theory articles. *Human Resource Development Review*, *9*(3), 300–304. https://doi.org/10.1177/1534484310371492

Callahan, J. L. (2014). Writing literature reviews: A reprise and update. *Human Resource Development Review*, *13*(3), 271–275. https://doi.org/10.1177/1534484314536705

Colquitt, J. A., & Zapata-Phelan, C. P. (2007). Trends in theory building and theory testing: A five-decade study of the Academy of Management Journal. *Academy of Management Journal*, *50*(6), 1281–1303. https://doi.org/10.5465/AMJ.2007.28165855

Cooper, H. M. (1988). Organizing knowledge syntheses: A taxonomy of literature reviews. *Knowledge in Society*, *1*(1), 104–126. https://doi.org/10.1007/BF03177550

Cropanzano, R. (2009). Writing nonempirical articles for Journal of Management: General thoughts and suggestions. *Journal of Management*, *35*(6), 1304–1311. https://doi.org/10.1177/0149206309344118

Dasborough, M. T. (2020). Broadening our horizons in 2020! *Journal of Organizational Behavior*, *41*(2), 93–94. https://doi.org/10.1002/job.2429

De Dreu, C. K. W., & Weingart, L. R. (2003). Task versus relationship conflict, team performance, and team member satisfaction: A meta-analysis. *Journal of Applied Psychology*, *88*(4), 741–749. https://doi.org/10.1037/0021-9010.88.4.741

Denyer, D., & Tranfield, D. (2009). Producing a systematic review. In D. A. Buchanan & A. Bryman (Eds.), *SAGE handbook of organizational research methods* (pp. 671–689). Thousand Oaks, CA: Sage.

Dwertmann, D. J. G., Nishii, L. H., & van Knippenberg, D. (2016). Disentangling the fairness & discrimination and synergy perspectives on diversity climate: Moving the field forward. *Journal of Management*, *42*(5), 1136–1168. https://doi.org/10.1177/0149206316630380

Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review*, *14*(4), 532–550. https://doi.org/10.5465/amr.1989.4308385

Elsbach, K. D., & van Knippenberg, D. (2018). The Academy of Management Annals: Looking back, looking forward. *Academy of Management Annals*, *12*(1), 1–4. https://doi.org/10.5465/annals.2016.0167

Fink, A. (2014). *Conducting research literature reviews: From the Internet to paper* (4th ed.). Thousand Oaks, CA: SAGE.

Good, D. J., Lyddy, C. J., Glomb, T. M., Bono, J. E., Brown, K. W., Duffy, M. K., … Lazar, S. W. (2016). Contemplating mindfulness at work: An integrative review. *Journal of Management*, *42*(1), 114–142. https://doi.org/10.1177/0149206315617003

Grant, M. J., & Booth, A. (2009). A typology of reviews: An analysis of 14 review types and associated methodologies. *Health Information and Libraries Journal*, *26*(2), 91–108. https://doi.org/10.1111/j.1471-1842.2009.00848.x

Haddaway, N. R., Collins, A. M., Coughlin, D., & Kirk, S. (2015). The role of google scholar in evidence reviews and its applicability to grey literature searching. *PLoS ONE*, *10*, e0138237. https://doi.org/10.1371/journal.pone.0138237

Harris, J. L., Booth, A., Cargo, M., Hannes, K., Harden, A., Flemming, K., … Noyes, J. (2018). Cochrane Qualitative and Implementation Methods Group guidance series—paper 2: Methods for question formulation, searching, and protocol development for qualitative evidence synthesis. *Journal of Clinical Epidemiology*, *97*, 39–48. https://doi.org/10.1016/j.jclinepi.2017.10.023

Hart, C. (2001). *Doing a literature search: A comprehensive guide for the social sciences*. London, UK: Sage.

Hülsheger, U. R., Anderson, N., & Salgado, J. F. (2009). Team-level predictors of innovation at work: A comprehensive meta-analysis spanning three decades of research. *Journal of Applied Psychology*, *94*(5), 1128–1145. https://doi.org/10.1037/a0015978

Jesson, J., Matheson, L., & Lacey, F. M. (2011). *Doing your literature review: Traditional and systematic techniques*. Thousand Oaks, CA: SAGE.

Johnson, R. E., Rosen, C. C., & Chang, C. H. (2011). To aggregate or not to aggregate: Steps for developing and validating higher-order multidimensional constructs. *Journal of Business and Psychology*, *26*(3), 241–248. https://doi.org/10.1007/s10869-011-9238-1

Kerr, N. L. (1998). HARKing: Hypothesizing after the results are known. *Personality and Social Psychology Review*, *2*(3), 196–217. https://doi.org/10.1207/s15327957pspr0203_4

Kuenzi, M., & Schminke, M. (2009). Assembling fragments into a lens: A review, critique, and proposed research agenda for the organizational work climate literature. *Journal of Management*, *35*(3), 634–717. https://doi.org/10.1177/0149206308330559

Lim, J. H., Tai, K., Bamberger, P. A., & Morrison, E. W. (2020). Soliciting resources from others: An integrative review. *Academy of Management Annals*, *14*(1), 122–159. https://doi.org/10.5465/annals.2018.0034

Locke, E. A. (2007). The case for inductive theory building. *Journal of Management*, *33*(6), 867–890. https://doi.org/10.1177/0149206307307636

McGarty, C. (1999). *Categorization in social psychology*. London, UK: Sage Publications.

Noyes, J., Booth, A., Cargo, M., Flemming, K., Garside, R., Hannes, K., … Thomas, J. (2018). Cochrane Qualitative and Implementation Methods Group guidance series—paper 1: Introduction. *Journal of Clinical Epidemiology*, *97*, 35–38. https://doi.org/10.1016/j.jclinepi.2017.09.025

Noyes, J., Booth, A., Flemming, K., Garside, R., Harden, A., Lewin, S., … Thomas, J. (2018). Cochrane Qualitative and Implementation Methods Group guidance series—paper 3: Methods for assessing methodological limitations, data extraction and synthesis, and confidence in synthesized qualitative findings. *Journal of Clinical Epidemiology*, *97*, 49–58. https://doi.org/10.1016/j.jclinepi.2017.06.020

Oxman, A. D. (1994). Systematic reviews: Checklists for review articles. *British Medical Journal*, *309*(6955), 648–651. https://doi.org/10.1136/bmj.309.6955.648

Paré, G., Trudel, M. C., Jaana, M., & Kitsiou, S. (2015). Synthesizing information systems knowledge: A typology of literature reviews. *Information and Management*, *52*(2), 183–199. https://doi.org/10.1016/j.im.2014.08.008

Parmigiani, A., & King, E. (2019). Successfully proposing and composing review papers. *Journal of Management*, *45*(8), 3083–3090. https://doi.org/10.1177/0149206319874875

Pautasso, M. (2013). Ten simple rules for writing a literature review. *PLoS Computational Biology*, *9*(7), 7–10. https://doi.org/10.1371/journal.pcbi.1003149

Perry-Smith, J., & Mannucci, P. V. (2017). From creativity to innovation: The social network drivers of the four phases of the idea journey. *Academy of Management Review*, *42*(1), 53–79. https://doi.org/10.5465/amr.2014.0462

Petticrew, M., & Roberts, H. (2008). *Systematic reviews in the social sciences: A practical guide*. Malden, MA: Blackwell.

Piazza, A., & Castellucci, F. (2014). Status in organization and management theory. *Journal of Management*, *40*(1), 287–315. https://doi.org/10.1177/0149206313498904

Pollock, T. G., Lashley, K., Rindova, V. P., & Han, J.-H. (2019). Which of these things are not like the others? Comparing the rational, emotional, and moral aspects of reputation, status, celebrity, and stigma. *Academy of Management Annals*, *13*(2), 444–478. https://doi.org/10.5465/annals.2017.0086

Porter, C. O. L. H., Outlaw, R., Gale, J. P., & Cho, T. S. (2019). The use of online panel data in management research: A review and recommendations. *Journal of Management*, *45*(1), 319–344. https://doi.org/10.1177/0149206318811569

Rousseau, D. M., Manning, J., & Denyer, D. (2008). Evidence in management and organizational science: Assembling the field's full weight of scientific knowledge through syntheses. *Academy of Management Annals*, *2*(1), 475–515. https://doi.org/10.2139/ssrn.1309606

Samba, C., van Knippenberg, D., & Miller, C. C. (2018). The impact of strategic dissent on organizational outcomes: A meta-analytic integration. *Strategic Management Journal*, *39*(2), 379–402. https://doi.org/10.1002/smj.2710

Schmidt, F. L. (2008). Meta-analysis: A constantly evolving research integration tool. *Organizational Research Methods*, *11*(1), 96–113. https://doi.org/10.1177/1094428107303161

Schmidt, F. L., & Hunter, J. E. (1977). Development of a general solution to the problem of validity generalization. *Journal of Applied Psychology*, *62*(5), 529–540. https://doi.org/10.1037/0021-9010.62.5.529

Short, J. (2009). The art of writing a review article. *Journal of Management*, *35*(6), 1312–1317. https://doi.org/10.1177/0149206309337489

Stouten, J., Rousseau, D. M., & De Cremer, D. (2018). Successful organizational change: Integrating the management practice and scholarly literatures. *Academy of Management Annals*, *12*(2), 752–788. https://doi.org/10.5465/annals.2016.0095

Torraco, R. J. (2005). Writing integrative literature reviews: Guidelines and examples. *Human Resource Development Review*, *4*(3), 356–367. https://doi.org/10.1177/1534484305278283

Torraco, R. J. (2016). Writing integrative literature reviews: Using the past and present to explore the future. *Human Resource Development Review*, *15*(4), 404–428. https://doi.org/10.1177/1534484316671606

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. New York, NY: Basil Blackwell.

van Knippenberg, D. (2011). Embodying who we are: Leader group prototypicality and leadership effectiveness. *The Leadership Quarterly*, *22*(6), 1078–1091. https://doi.org/10.1016/j.leaqua.2011.09.004

van Knippenberg, D. (2012). What makes for a good review article in organizational psychology? *Organizational Psychology Review*, *2*(3), 185–188. https://doi.org/10.1177/2041386612452220

van Knippenberg, D., De Dreu, C. K. W., & Homan, A. C. (2004). Work group diversity and group performance: An integrative model and research agenda. *Journal of Applied Psychology*, *89*(6), 1008–1022. https://doi.org/10.1037/0021-9010.89.6.1008

van Knippenberg, D., & Sitkin, S. B. (2013). A critical assessment of charismatic—transformational leadership research: Back to the drawing board? *Academy of Management Annals*, *7*(1), 1–60. https://doi.org/10.1080/19416520.2013.759433

West, M. A. (1990). The psychology of innovation in groups. In M. A. West & J. L. Farr (Eds.), *Innovation and creativity at work: Psychological and organizational strategies* (pp. 309–333). Oxford, UK: John Wiley & Sons.

Whetten, D. A., Felin, T., & King, B. G. (2009). The practice of theory borrowing in organizational studies: Current issues and future directions. *Journal of Management*, *35*(3), 537–563. https://doi.org/10.1177/0149206308330556

Zhang, F., & Parker, S. K. (2019). Reorienting job crafting research: A hierarchical structure of job crafting concepts and integrative review. *Journal of Organizational Behavior*, *40*(2), 126–146. https://doi.org/10.1002/job.2332

Zupic, I., & Čater, T. (2015). Bibliometric methods in management and organization. *Organizational Research Methods*, *18*(3), 429–472. https://doi.org/10.1177/1094428114562629

AUTHOR BIOGRAPHIES

David Dwertmann is Assistant Professor at Rutgers University. David is interested in the social and cognitive processes that result in feelings of otherness and how to overcome them. He looked at otherness in the form of disabilities, immigration, status,

and more. David is particularly interested in how norms, organizational climate, and leadership influence these processes. His work in these areas has been published in Academy of Management Journal, Leadership Quarterly, Human Resource Management, and Journal of Management among others

Daan van Knippenberg is Chair of Leadership at Drexel University. Daan was Editor of Academy of Management Annals and Organizational Psychology Review, and Associate Editor of Academy of Management Journal, Organizational Behavior and Human Decision Processes, and Journal of Organizational Behavior. Daan's research focuses on leadership, diversity, teams, and creativity and innovation.

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