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Mitigating theoretical and coverage biases in the design of theory-building research: an example from international entrepreneurship

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Published in:
International Entrepreneurship and Management Journal

DOI (link to publication from Publisher):
[10.1007/s11365-009-0122-7](https://doi.org/10.1007/s11365-009-0122-7)

Publication date:
2010

Document Version
Early version, also known as pre-print

[Link to publication from Aalborg University](#)

Citation for published version (APA):
Turcan, R. V., Mäkelä, M., Sørensen, O. J., & Rönkkö, M. (2010). Mitigating theoretical and coverage biases in the design of theory-building research: an example from international entrepreneurship. *International Entrepreneurship and Management Journal*, 6(4), 399-417. <https://doi.org/10.1007/s11365-009-0122-7>

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**MITIGATING THEORETICAL AND COVERAGE BIASES IN THE DESIGN OF THEORY-BUILDING
RESEARCH: AN EXAMPLE FROM INTERNATIONAL ENTREPRENEURSHIP**

Abstract. In this paper, we advance a three-stage theory-building framework to assist scholars in addressing theoretical and coverage biases by means of the appropriate design of cross-domain theory-building research. In our discussion, we use an example from research in international entrepreneurship, which has been emerging as a cross-domain area for the entrepreneurship and international business research communities since the mid-1990s. Theoretical bias can stem from the situation where the conceptualisation of a phenomenon whose research is currently emerging and depends upon several of the established disciplines of social science and their sub-domains, is in fact dominated by the theoretical approaches of a single domain. As to the coverage bias, the somewhat novel research domain of international entrepreneurship provides us with a means to illustrate how research in an emerging domain tends to focus on positive growth only and rarely takes appropriately into account companies that fare less well; for instance, accounting for survivor bias would require that scholars carefully acknowledge firms that go out of business for one reason or another. Observations from a longitudinal, multiple-case study research on the de-internationalisation of small high-technology firms is used to exemplify the structure of our framework.

Keywords: international entrepreneurship, coverage bias, theoretical bias, building theory.

Introduction

Scholarly discourse about the extent of and need for a uniform conception of the definition, contents and paradigm of the research domain of entrepreneurship has continued since the beginning of the rise of a dedicated entrepreneurship research community – a development that could be dated mostly to the 1980s (e.g. Bygrave, 2007). At the 2003 Babson-Kauffman Entrepreneurship Research Conference, Jay Barney presented his views on recent trends in entrepreneurship research in front of the audience. He began his speech by recalling an experience he had had at a conference on strategic management where he asked the audience to write down on a piece of paper a definition of the research domain of the resource-based view of the firm; a rather consistent answer was provided to this question by the strategic management scholars present at that conference. Barney continued his speech by arguing that if he would repeat the same experiment at the Babson Conference by asking the entrepreneurship scholars to write down the research domain of entrepreneurship, he would receive several answers, if not as many as there were people in the room. His point about entrepreneurship's lack of a commonly accepted conception of itself as a research field could not have been much clearer. He then suggested three criteria for discerning if a suggested structure of knowledge constitutes a theory in emergence. First, the research domain has to be clearly defined. Second, the emergent theory needs to have begun contributing back to neighbouring or other related research domains. Third, the circumstances are that practitioners need not be invited to teach the subject anymore.

Even though some entrepreneurship scholars may not agree with Jay Barney, a clear point is made, and Barney's simple framework illustrates the problem vividly. Other illustrative observations abound. Low (2001), for example, in his search for trends in the entrepreneurship literature during 1987-88 and 1998-99, needed a 6 by 20 matrix to classify, based on two characteristics represented by the dimensions, a total of just 131 articles. Whereas Dery and Toulouse (1996), in their empirical study of 237 articles that were published in the *Journal of Business Venturing* between 1986 and 1993, observed that more than half of the works to which these articles referred were books and, inter alia, that the entrepreneurship '...field seemed in some way to resist the frequent calls for unity launched by some of its more influential members' (p. 298). Recently, Gregoire *et al.* (2006) conducted a content analysis of networks of co-citation emerging from more than 20,000 references listed in more than 900 full-length papers published in the *Frontiers of Entrepreneurship Research* between 1981 and 2004. They concluded that there has been a convergence in

entrepreneurship research over the last 25 years, and that the entrepreneurship field continues to draw from a wide array of disciplines. This research by Gregoire *et al.* (2006) suggests, even though implicitly, that the unified domain of entrepreneurship research has yet to emerge. The authors maintain that the major challenge that remains is in articulating the relationships between concepts and approaches of disciplines the entrepreneurship field draws from.

This challenge is not unique to the entrepreneurship field. Any new domain that is in the process of emergence and that draws from several disciplines encounters a challenge of this kind: how to integrate sometimes unrelated concepts from different fields. The challenge is valid for both the theoretical and methodological levels of a research design. At the theoretical level, the challenge of integrating concepts and constructs from various disciplines or their sub-domains is a second phase challenge. The first phase challenge at the theoretical level is to bring these different concepts together; failure in this leads to theoretical bias. The occurrence of theoretical bias is a situation where the conceptualisation of an emerging phenomenon, whose valid research depends upon two or more of the established disciplines of social science, is in fact dominated by the theoretical approaches of a single discipline (see Gregoire *et al.*, 2006 for examples in entrepreneurship research; see Turcan and Mäkelä, 2004, for examples in international entrepreneurship specifically).

At the methodological level, the challenge is twofold. First, choice of methodology is important for the advancement of theory (Edmondson and McManus, 2007), especially in an emerging research domain. For example, in the entrepreneurship field, Ogbor (2000), following a postmodernist approach, deconstructed the entrepreneurial discourse and argued, among other things, that ideology over a research paradigm had a pervasive influence on the methods of inquiry by imposing a positivist paradigm. Ogbor stated that it is the effect of ideological control over the conventional entrepreneurial discourses that impedes theory development in entrepreneurship. Second, appropriate coverage and sampling are equally important. For example, traditional entrepreneurship research (Davidsson and Wiklund, 2001; Davidsson, 2003c), and international entrepreneurship research (Zahra and George, 2002; Coviello and Jones, 2004) to date have focused primarily on positive business growth and do not study companies that ceased to trade, or chose to withdraw from their international activity along the way; hence there is the imminent issue with *coverage bias*. The challenge for the researchers is to minimise coverage bias by studying not only successful events, but also events that deviate from what can be considered expected; that is, researchers need to be

able to avoid survivor bias (e.g. Aldrich and Wiedenmayer 1993) and generally biases stemming from the varying degrees of firm success.

In this paper, we advance a three-stage theory-building framework to assist scholars in addressing theoretical and coverage biases by means of the appropriate design of cross-domain theory-building research. In our discussion, we use an example from research in the domain of international entrepreneurship, which has been emerging as a sub-area of the entrepreneurship and international business research communities in its own right since the mid-1990s. The paper proceeds as follows. The next section presents a general overview of research in international entrepreneurship. The theory-building framework will be introduced next, starting with issues of theoretical and coverage biases in the area of international entrepreneurship, and ending with issues of the later stages of building theory. The final section then concludes with a discussion.

Research in international entrepreneurship

During the latter half of the 1990s, the research stream on international entrepreneurship (IE) rose to form an increasingly important area of scholarly inquiry that more and more had its own mark (Wright and Ricks, 1994). This field of study operates at the intersection of two research paths, those of entrepreneurship and international business (McDougall and Oviatt, 2000). Since then, in a relatively short period of time, IE research has grown into an identifiable and perhaps even intermediately rich stream for some aspects (Coviello and Jones, 2004; Oviatt and McDougall, 2005). In 2004, the seminal article of the area by Oviatt and McDougall (1994) was awarded the *Journal of International Business Studies* Decade Award.

At the same time, a young scholarly discipline is not without shortcomings. IE is still without a unifying and clear theoretical and methodological direction (McDougall and Oviatt, 2000, p. 906), and more cross-fertilisation is needed between international business and entrepreneurship research paths, if IE is to fully develop (Oviatt and McDougall, 2005, p. 6). In this regard, Zahra and George (2002) argued that the bulk of extant IE research has focused primarily on studying the internationalisation of *new* ventures thus ignoring the fact that entrepreneurial activities are an ongoing process over time. As regards methodological issues, IE research has been criticised among others of the use of inconsistent definitions and measures as far as firm's age is concerned (Coviello and Jones, 2004). In the attempt to

address some of the above concerns, several scholars have put forward alternative definitions of IE (see table 1 below).

To the above concerns, one may add the existence of a theoretical bias and a coverage bias in the IE research. As regards the *theoretical bias*, the conceptualisations of IE research to date can be viewed as being quite much dominated by the theoretical approaches of the international business field (Turcan and Mäkelä, 2004), thus creating an imbalance in knowledge contribution (Coviello and Jones, 2004). Similarly to comments of Davidsson (2003a), the authors maintain that knowledge about IE is best developed if deep familiarity with the (two-domain) phenomenon is combined with disciplinary knowledge and standards. As noted by Coviello and Jones (2004), this is one of the challenges facing IE researchers in the early stages of IE field.

Insert Table 1 about here

With regard to *coverage bias*, the IE research to date, to a certain extent, mirrors traditional entrepreneurship research (Davidsson and Wiklund, 2001; Davidsson, 2003c) and international business research (Buckley and Chapman, 1996; Benito and Welch, 1997) in that it focuses only on positive business growth and ignores, to an alarming extent, companies that failed or chose to withdraw from their international activity along the way (Zahra and George, 2002; Coviello and Jones, 2004). This approach to research resembles the study of factors that lead to success at gambling on race horses, in which one studies only people who have won money (received net gain), and concludes that gambling is profitable: the more you bet, the higher your gains; the more unlikely winners you bet on, the more you win (Davidsson, 2003b). By studying only surviving or successful firms, there is a risk to present these firms' behaviours as success factors when in fact they may well be factors that equally increase the risk of failure (Davidsson, 2003c). Another often overlooked and yet related factor is so-called selection bias, which is caused when a variable has a causal relationship with both the decision to de-internationalise and the measured performance variable. In the context of de-internationalisation, this can lead to misattribution of the causes of the de-internationalisation decision as causes of success in the process. One way to overcome the selection bias is for a case-based research effort to incorporate also cases where firms planned to potentially de-internationalise, but chose not to (Kalnins, 2007).

In an attempt to address theoretical and coverage biases in the process of designing a theory-building research in an emerging phenomenon like international entrepreneurship, we

suggest a three-stage theory-building framework. The empirical data that we employ to discuss the framework is drawn from a longitudinal, multiple-case study research on the de-internationalisation of small high-technology firms (Turcan, 2006).¹ We use this case study research here as an example to illustrate our theses. Specifically, the chosen study explored from the IE perspective how and why small high-technology firms (SHTFs) de-internationalised; we henceforth refer to this as ‘the SHTFs study’.

A three stage theory-building framework

The aforementioned stream of suggestions for alternative definitions for IE reflects scholars’ dissatisfaction with the extant set of assumptions and explanatory principles used to explain firms’ IE behaviour. At the same time, it implies that it does pose a challenge to integrate entrepreneurship and international business concepts in order to advance the research domain of IE. To address a challenge of this kind, Poole and Van de Ven (1989) put forward what is called ‘paradox strategy’ as an alternative methodology for theory building, which we make use of in our discussion here. Rather than viewing paradox as *strictly contrary propositions* – as defined in logic – they employed an alternative definition of *interesting and thought-provoking contradictions* (Poole and Van de Ven, 1998, p. 563), which can be used as tools and which need not constrain theorising. As Poole and Van de Ven argued, paradoxes enable researchers to study the dialectic between opposing levels and forces that are captured in different theories. They suggested four methods for working with such paradox: (i) *opposition*, which means to accept the paradox: keep the paradigms, in this case entrepreneurship and international business, separate and their contrasts and assumptions appreciated; (ii) *spatial separation*, which suggests to situate the approaches (here, entrepreneurship and international issues) at different locations; (iii) *temporal separation*, which situates the approaches time-wise differently; and (iv) *synthesis*, which introduces a new perspective that eliminates the paradoxical opposition, thus advancing new concepts. It is notable that the four approaches can be – as acknowledged by Poole and Van de Ven – combined in practice. Approaching IE through these theory-building lenses, it is suggested here to view the IE phenomenon as a paradox between the cross-border and entrepreneurship research paths by accepting it and learning from juxtaposing contradictory assumptions coming from the two research paths to build synthesised coherence across these rather separate streams of research.

Our theory-building framework builds also on another, complementary theory-building strategy; this strategy is put forward by Coviello and Jones (2004) who suggest a four-stage process of conceptual design: (i) *construction*, which involves establishing the current relevant set of theories used to examine and interpret the phenomenon under study; (ii) *deconstruction*, which involves unravelling the evidence of the phenomenon under study into events and sequences in an interdisciplinary fashion; (iii) *reconstruction*, which ascribes meaning to events and sequences; and (iv) *generalisation*, which involves searching for common patterns.

While this paper focuses on problems with theoretical bias and coverage bias, we divide our presentation into three parts, the first two of which address these two problem areas, and final one addresses the remainder of the theory-building research process: (i) mitigating theoretical bias, (ii) mitigating coverage bias, and (iii) building theory (see figure 1). The underlying assumption of the emerged framework is the *paradoxical* nature of the intersection of entrepreneurship and cross-border research paths. In what follows, each stage of the theory-building framework will be discussed in detail.

Insert Figure 1 about here

Mitigating Theoretical Bias

In the beginning research that aims at building theory, the definition of a research problem is followed by two distinct sub-stages that form the phase of mitigating theoretical bias: construction and deconstruction. The *construction* process (figure 1) involves establishing the *current* relevant set of theories or definitions that are used to describe the phenomenon under study. As such, it provides the needed initial conceptual focus for the study. For example, in the SHTFs study, the starting point was the definition of de-internationalisation provided by Benito and Welch (1997) from the international business perspective. They defined de-internationalisation as ‘... any voluntary or forced *actions* that *reduce* a company’s engagement in or exposure to current cross-border activities’ (emphasis added, p. 9).

The two constructs emphasised above in the definition, however, required further investigation in order to improve understanding of the process of de-internationalisation in small firms. As Benito and Welch (1997) derived their definition of de-internationalisation from theoretical frameworks used to explain divestment activities of MNEs, the question arose whether it was possible to explain by the same *actions* the process of de-

internationalisation in SHTFs. In other words, are these *actions* strategic, entrepreneurial, or other. As regards the second construct *reduction*, it implies negative and undesirable features associated with de-internationalisation phenomenon, although, by de-internationalising, the firms might in fact correct an error previously made, which might have been the internationalisation itself. Furthermore, it might also be argued that despite decreasing the level of internationalisation, the overall growth of the firm might be towards an increased level of cross-border activity. These suggest that de-internationalisation in fact might be an integral part of a cross-border strategy of a SHTF. All in all, the current definition of de-internationalisation could not explain the anecdotal evidence of *entrepreneurial* de-internationalisation in SHTFs. Despite the above reservations however, it was maintained that international business literature might still be accommodating in order to identify relevant concepts and constructs to explain de-internationalisation in small firms.

Although the construction phase provided the initial focus for the study, still the existing definition was not enough to explain the phenomenon under study from the two research paths. Next step is to *deconstruct*, that is, to unravel the evidence of the phenomenon under study into events and sequences in an interdisciplinary fashion. The task here is to understand the process of de-internationalisation in small firms from the international business perspective, as well as from the entrepreneurship perspective. To achieve the above in this deconstruction phase of the framework, all four methods of working with paradox were employed (in accordance with what was stated above): (i) *opposition*, e.g. conceptualising the study separately from international business and entrepreneurship perspectives, (ii) *spatial separation* e.g. understanding where de-internationalisation may occur within each perspective, (iii) *temporal separation* e.g., when de-internationalisation may occur within each perspective, and (iv) *conceptual synthesising*, introducing new constructs (figure 1). De-internationalisation in small firms was conceptualised from the international business viewpoint, with the focus on where (spatial separation) and when (temporal separation) events related to it might occur and what constructs or assumptions derived from the international business literature could be applicable to small firms. The same process of conceptualisation of de-internationalisation was done from the entrepreneurship point of view. The final phase here is (*conceptual*) *synthesising*, whereby researchers reconstruct and interpret the phenomenon under study by integrating the identified interdisciplinary constructs, and level and temporal separations of two research paths.

For example, in the SHTFs study, working with the paradox meant to, for instance, review the various branches of existing “de-literature”: the de-investing, de-franchising, and

de-exporting literatures.² This review made clear that a theoretical understanding of the process of de-internationalisation, especially within small firms, is still in its infancy. At the same time, several constructs emerged from the review of the de-literature that eventually formed the basis of the conceptual framework of de-internationalisation process of the small firm from the international business perspective. These were: intentions and actions of dyadic partners, escalating commitment, critical events, and the time horizons of entrepreneurs (Turcan, 2003). The review of the entrepreneurship literature provided greater contextualisation for the SHTFs study. This review highlighted that the de-internationalisation process may be regarded as creation of a new venture or new activity at the low end of the new economic activity spectrum: when established firms introduce what internally is a new activity and appears at the same time as a new imitator in a market through organic growth (Davidsson et al., 2001). In addition to the above, the review findings also revealed that there is no clear consensus in the entrepreneurship literature over what a new venture is, how it behaves and changes over time, what its key indicators are, how old it may be at maximum, and whether there is continued entrepreneurship beyond the start-up phase.

As the process of conceptualising the phenomenon under study from both the international business and entrepreneurship perspectives ended, the process of conceptual synthesising (constructing *synthesised coherence*, see Locke and Golden-Biddle, 1997) began by asking the following questions: at what levels the identified entrepreneurship and international business constructs operate (this is called here *spatial separation*), and when do entrepreneurship constructs hold, and when do international business ones (this is called here *temporal separation*; see figure 1). Given how international entrepreneurship is currently defined by McDougall and Oviatt (2000), it might be reasonably assumed that the actual interaction between entrepreneurship and international business constructs takes place at a specific level, for instance, at the entrepreneur level, the entry mode level, or the cooperative alliance level, and that at this level, the unit of analysis (for instance, the entrepreneur), demonstrates both entrepreneurship and international business behaviours. However, when different levels of analysis are taken into consideration, tensions, oppositions, and contradictions between explanations of entrepreneurship and international business behaviours come into light. One can ask, for example, how are international strategic decisions being made (in an entrepreneurial mode, in a planning mode, or in an adaptive mode); where are these decisions being made (at the entrepreneur level, or at the firm level); and which level is more entrepreneurially or internationally oriented than the other, and to which extent.

This iteration between *spatial separation* (Poole and Van de Ven, 1989) and *temporal separation* (Glaser, 1978), and conceptual synthesising led to the creation of a maturity scale that is thought to help researchers develop representative samples and provide results that allow for generalisation. The maturity scale is based on various temporal indicators of relative maturity derived primarily from the scholarly literatures in entrepreneurship and strategic management. Several building blocks of the maturity scale were identified as dichotomies construed of (i) continued entrepreneurship (Davidsson, 1991; Lumpkin and Dess, 1996) and continued management (Sandberg, 1992; Hitt and Ireland, 2000); (ii) entrepreneurial mode and planning mode of making strategic decisions (Mintzberg, 1973); (iii) an effectual thinker and causal thinker (Sarasvathy, 2001); (iv) new venture creation and new activity creation (Davidsson *et al.*, 2001); (v) strategic experimentation (Nicholls-Nixon *et al.*, 2000) and strategic change (Rajagopalan and Spreitzer, 1996); (vi) early growth and organic growth in new and established firms (Davidsson *et al.*, 2001); (vii) knowledge augmenting and knowledge exploitation in new and established ventures (Kuemmerle, 2002); and (viii) “direction of time” and “direction in time” (Hurmerinta-Peltomäki, 2003). For example, from the above synthesis of temporal indicators of relative maturity it was possible to derive a definition for the start-up process as *the emergence of a new venture whereby early growth is achieved through strategic experimentation and knowledge augmentation applying entrepreneurial mode to strategic decision-making*. These indicators of relative maturity³, as well as the constructs derived from the international business and entrepreneurship literature during the deconstruction process, guided the design of the research methodology, and served as the first free codes in the initial stages of data analysis.

Mitigating Coverage Bias

After the process of assembling pieces of theoretical content into a synthesis, an initial framework of concepts and constructs has been created. This facilitates moving towards the empirical part of case study research: to selecting the cases.

The problem of *coverage bias* occurs when the population from which the cases are sampled is not representative of the population which the theorising is about. While *coverage error* and the resulting bias are most commonly discussed in the context of sample surveys (e.g. Groves *et al.*, 2004), it is of course evident that they should not be overlooked by the case-based researcher. If the population from which the cases are selected consists of only successful cases, the resulting theory may be analytically generalised to successful firms only.

The central need at this stage is that the research sample shall include cases that exhibit values of variables that deviate from what is commonly most expected, and that the sample allows theoretical generalisation to the desired population so that the focus of the research is on important rather than obtainable data (Davidsson and Wiklund, 2001; Coviello and Jones, 2004). To the above, the other concern of researchers during this stage of the theory-building process is to design the research process in such a way that the research quality is maximised. The steps researchers undertake to achieve quality are not unique to a specific research, as table 2 shows. Several of the quality issues presented in the table have a link with the study sample, such as that they tell about its appropriateness. However, there are several challenges that await researchers when studying cases that deviate from what is commonly most expected, particularly if the companies are out of business.

Insert Table 2 about here

One challenge relates to carrying out theoretical sampling in a proper manner, for instance, in recognising appropriate polar cases when the strategy of seeking polarity has been selected (Eisenhardt, 1989; Yin, 2003). Several dimensions might be used to develop the categories of selected cases. For example, one dimension would represent the life continuum of firms: success vs. failure or still in business vs. out of business. Another dimension might be related to the unit of analysis and represent its continuum by using appropriate coding families (Glaser, 1978): for example, total vs. partial or dependent vs. independent. An exemplar method to aid researchers in these theoretical sampling efforts is to construct typologies by reduction or subtraction (Glaser, 1978).

For example, in the SHTFs study, the construction of typologies by reduction was employed to develop the typology of de-internationalisation. A typology of de-internationalisation (figure 2.a) was generated by cross-tabulating the polar dimensions, derived from the literature, of de-internationalisation continuum (total vs. partial) and life continuum (in business vs. out of business).

Insert Figure 2 about here

Firms positioned in quadrant I would have withdrawn from international markets and focused entirely on domestic markets. Firms in quadrant II would have remained internationally active, but have partially de-internationalised. Firms in quadrant III logically cannot exist, or,

as Glaser (1978) puts it, this is a non-empirical cell. This view considers market withdrawal to represent an extreme case of total de-internationalisation. Firms in quadrant IV would represent a state of total de-internationalisation, the only difference from firms in quadrant I being that they would have gone out of business.

Another challenge was to minimise the potential effect of resource bias; we call our answer to this challenge the resource-bias strategy. In the SHTFs study, “small” was defined as a company with less than 100 employees (Storey, 1994). The theoretical sampling strategy discussed above also helped ensure that the critical events were transparently observable in the cases. For the purpose of the SHTFs study, the case companies would be *small*; operate in one sector, *software*; operate from one location, *Scotland*; and *have de-internationalised* during the years *1999-2001*.⁴

A third challenge that might appear quite obvious but is sometimes overlooked and is also relevant for tackling biases caused by errors in sampling and coverage, is the use of secondary data. Thorough preparations before entering the field work are pivotal especially when studying events that deviate negatively from what is expected. An opportunity to get access to an entrepreneur with such experience is often valuable, and therefore as much as possible shall be learned about the entrepreneur and her company before conducting the interview. In the SHTFs study, the use of secondary data was seen then to satisfy four key aims. The first, and the one that importantly supported the mitigation of coverage bias, was to facilitate the appropriate identification of potential cases on the bases of selection criteria. The second was to learn as much as possible about a company and its history prior to the actual interview with its director. The third was to compare and cross-check written and published evidence with what interview respondents reported. The fourth was to identify potential stakeholders who could corroborate the consistency of information reported by interviewees. Databases were created for each case to organise and document the data collected, thus contributing to the enhancement of the reliability of the research. As the research unfolded, primary data was added to the databases as well.

In the SHTFs study, secondary data was a good starting point (i) to select an appropriate sample and identify the related stakeholders, and (ii) to select an appropriate respondent within an organisation who was likely to be knowledgeable about the phenomenon and willing to discuss it. After some work with snowball sampling, the set of recommended informants was still broad, but after some time it converged as a few names were mentioned repeatedly; five case companies emerged as a result (figure 2.b). Firm A had fully de-internationalised and was focused on serving the local UK market only. It represents a state

of total de-internationalisation, whereby, after a rapid internationalisation, it withdrew from international activities and focused entirely on the domestic market and grew at a very fast rate (quadrant I, figure 2.b).

Firm B went into liquidation, survived by buying back its intellectual property from the liquidator, and started over again under a different name. Firm B is represented in the typology matrix (figure 2.b) as an arrow that shows how it rejuvenated as a phoenix from its ashes (from quadrant IV to quadrant II). That is, firm B represents a ‘Phoenix’ type of company that successfully resurrected itself after it de-internationalised and went out of business. Firm C represents a state of partial de-internationalisation, whereby, it re-internationalised after discovering new market opportunity. Firm D represents a state of total de-internationalisation, whereby, after a very rapid internationalisation, it ceased trading. Firm E (quadrant IV) was suggested by a liquidator who was interviewed in connection with firm B. Firm E, as firm D, also represents a state of rapid internationalisation that led to failure.⁵ These case descriptions illustrate the success in mitigating coverage bias in the SHTFs study.

In the sampling process, adding cases should be stopped when theoretical saturation (Glaser and Strauss, 1967) is reached. Although there may be no universal ideal of the appropriate number of cases, certain spans for this number, such as four to ten, have been suggested (Eisenhardt, 1989).

Building theory

After tackling the theoretical and coverage biases, it is left to the researcher to craft the protocols that the research will employ, to collect the data, and to analyse the data, shaping a novel theoretical framework in the form of a set of propositions. These include the phases of reconstruction and generalisation that Coviello and Jones (2004) discussed, as outlined above. Reporting thereafter concludes the entire research process. In the following, we briefly discuss data analysis and the resulting formation of the theoretical framework.

In analysing data, a major challenge is to identify the appropriate strategy for coping with rich qualitative data so that valid conclusions are eventually drawn and presented so that they are accompanied by an audit trail from the data to them. Reference guides that illustrate a variety of data analysis strategies abound. For example, the works of either Glaser (1978) or Strauss and Corbin (1998) – which differ from each other for instance for the tightness of their process – are viewed as recommendable sets of instructions for reaching the needed

systematic analysis (see e.g. Mäkelä and Turcan, 2007). Miles and Huberman's (1994) sourcebook is an excellent reference for researchers for learning about displays that support the analysis of within- and cross-case data. Eisenhardt's (1989) work is also a classic guide. Researchers may also refer, *inter alia*, to handbooks that review prior research on the use of qualitative methods in international business (e.g. Marschan-Piekkari and Welch, 2004) or entrepreneurship (e.g. Neergaard and Ullhøi, 2007).

From the within- and cross-case analysis, themes and tentative concepts begin to emerge. These include themes and concepts from both the data and existing literature. Eventually, relationships between variables have come forth. This emergent rudiment of a theoretical framework is then again compared with the data – as well as with existing literature – in a highly iterative and typically very laborious process to come up with the final theoretical framework, which is then reported as the resultant model of the research. Thorough comparisons with existing literature strengthen the internal and external validity as well as the theoretical level of the model (e.g. Eisenhardt, 1989). This process calls for iterative tabulation of evidence for each construct (Miles and Huberman, 1994) and seeking a logic of replication, as well as allocating in the process close attention to also conflicting literature and causality, thereby building internal validity (e.g. Eisenhardt, 1989).

The resulting model often represents middle-range theory (Merton, 1967; Denzin, 1970; Weick, 1980), which is positioned between grand theory and minor hypotheses.⁶ According to Merton (1967), the primary benefits of reaching theory of the middle-range level are (i) the theory's ability to go above pure description and single empirical observations; (ii) its ability to draw upon diverse perspectives, units of analysis and even disciplines in order to formulate new theory; (iii) its recognition of key basic knowledge as a platform, building on which more complex theoretical questions can be answered; and (iv) its flexibility in that it allows researchers to seek generalisability without totally endorsing the belief that a single, unified social science is achievable.⁷ By and large, it has been stated that to look for theories of the middle range means to prefigure problems in such a way that the number of opportunities to discover solutions is increased but not made infinite (Weick, 1989: 521).

In the SHTFs study, creation of typologies by reduction and subtraction, open and selective coding, to name a few procedures, were used to advance middle-range theory related to the process of de-internationalisation of small high-technology firms. Middle-range theorising related to, for instance, goal alignment (e.g. Turcan, 2008), captivity, point of no return, hype, and reality gap were put forward. The theorising helped to manage the complexity of the emergent process model of de-internationalisation.

Conclusion

In this paper, we have made an attempt to address some of the challenges scholars may face when conducting research within new domains, like the intersection of entrepreneurship and international business. These new domains are distinctly different from established ones in, for instance, that they are in the process of emergence and that they heavily borrow from established disciplines and more established domains in order to reach theoretical structures of explanatory power. A major challenge researchers are faced with during this process is how to integrate sometimes unrelated concepts of different fields. This challenge emerges in the theoretical and methodological levels of research design.

At the theoretical level, the challenge is about how to bring to the emerging domain concepts and constructs from various disciplines or their sub-areas and integrate them into a cohesive, valid, and novel whole. The issue here is to draw appropriately from each of the existing literatures. However, current practices suggest that the conceptualisation of an emerging phenomenon that draws from several domains in order to define its area of research tends to be dominated by the theoretical approach of a single domain. This is a natural trend established in emerging domains where the pace and scope of the research agenda can be set by spearheading scholars who may come from a strong disciplinary base. Such base might then, to a certain extent, overshadow the general research approaches and interpretations in an emerging domain. This leads to what is termed here theoretical bias.

As regards the methodological level, the choice of research methodology is often of critical significance for the success of the advancement of theory, particularly so in an emerging research domain. In order to advance research in an emerging domain, qualitative research methodologies and methods may often be useful to point out rudimentary or more advanced causal structures. We can also note that too often, research within an emerging domain focuses empirically on firms that have managed to grow positively (and thus represent successful events). This leads to survivor bias so that the research ignores companies that have gone out of business for one reason or another, having faced events that deviate negatively from what is most commonly expected. We termed coverage bias this failure to tackle the so-called survivor bias, and other failures to obtain variation in the sample through appropriate selection of the study population.

Using as an example a previous study in international entrepreneurship, we put forward a three-stage theory-building framework to assist scholars who conduct research within

emerging domains to mitigate the theoretical and coverage biases; the first two stages deal with these two biases, respectively, and the final part is a “roadmap” from the end of sampling to reaching the final theoretical framework of the research. A key underlying assumption of the framework is the nature of cross-fertilisation between concepts and assumptions that are drawn from various research fields – we use the term paradoxical to refer to this cross-fertilisation (even though the two or more pre-existing theoretical structures are not always in conflict with each other). It would appear that when researchers bring together unrelated sets of concepts and assumptions, they may sometimes look for theoretical explanations for the studied phenomenon either from just one research domain or too simplistically, not integrating the emerging constructs sufficiently. However, if emerging constructs are successfully integrated, they can then guide data collection in an appropriate manner as well as serve as a basis for initial coding during the first stages of data analysis.

As regards coverage bias, if only surviving or successful firms are studied, there is a risk to present these firms’ behaviours as success factors when in fact they may well be factors that equally increase the risk of failure (Davidsson, 2003c). The studied sample shall be representative so that it appropriately includes also cases that deviate negatively from what is most commonly expected. Including such cases, however, often brings additional challenges to the sampling process, such as the need to account for attribution errors with increased care. Several sampling strategies were outlined to support this care.

Researchers can use the proposed theory-building framework to support their aim to produce new knowledge for advancing current theoretical understanding of an emerging domain in the intersection of two or more existing areas of scholarly endeavour.

Acknowledgments

An early version of this paper was presented at the McGill Conference on International Entrepreneurship in September 2004 in Montreal, Canada. We acknowledge the anonymous reviewers for their insights and constructive feedback.

Notes

¹ Owing to space limitations, case descriptions, timelines of critical events for each case, as well as data analysis and other non-confidential information are not reproduced here but are available from the first author upon request.

² For review of de-internationalisation literature, see Benito and Welch (1999) and Turcan (2003).

- ³ These indicators of relative maturity might be considered as ideal types of behaviour. One can make no claim that the proposed indicators are comprehensive, and further conceptual and empirical research is called for to assess this framework and its underlying ideas. Predictions can be falsified by assessing deviations between real forms and ideal types (Huy, 2001). Ideal types allow holistic consideration of multiple synergies constructs, as well as the development of falsifiable theories. As researchers working in a relatively young academic domain, IE scholars must address these kinds of issues at the very outset of research in the formative phases of the new field. This would allow for potential to reach a convergence of efforts in the future of IE studies.
- ⁴ The 1999–2001 time period is of greater interest because in those days one could witness a huge growth in the information and communication technology sector, whose overall revenue growth peaked in 2000, then rapidly declined over the following year with the bursting of the “dot com” bubble, and afterward remained essentially flat until 2003 (Coltman *et al.*, 2001). The software sector was chosen specifically for the pivotal role it played and continues to play in transforming the economy by boosting more rapid growth and productivity gains (OECD, 2004).
- ⁵ From the point of view of the researchers, the fact that half of the firms studied had ceased to exist as small independent firms was disappointing; however, drawing on Storey’s (1994) estimates of small firm survival after three years, it is not surprising and highlights the challenge of continuity faced by longitudinal research designs with small entrepreneurial firms.
- ⁶ Denzin (1970: 68) introduces four types of social theory, those being (i) grand social systems theory, (ii) middle-range theory, (iii) substantive theory; and (iv) formal theory; he, later in the text, refers to the latter two as middle-range theories. In Merton’s (1968) definition, grand theory is a high-level conceptual scheme that has power to explain many of the observed uniformities of social behaviour, social organization, and social change; middle-range theories are theories that lie between the minor but necessary hypothesis that evolve in abundance during day-to-day research and the all-inclusive efforts that aim at grand theory (Merton, 1968).
- ⁷ For an extensive review and perspectives of middle-range theory in organisational research, see also Pinder and Moore (1980).

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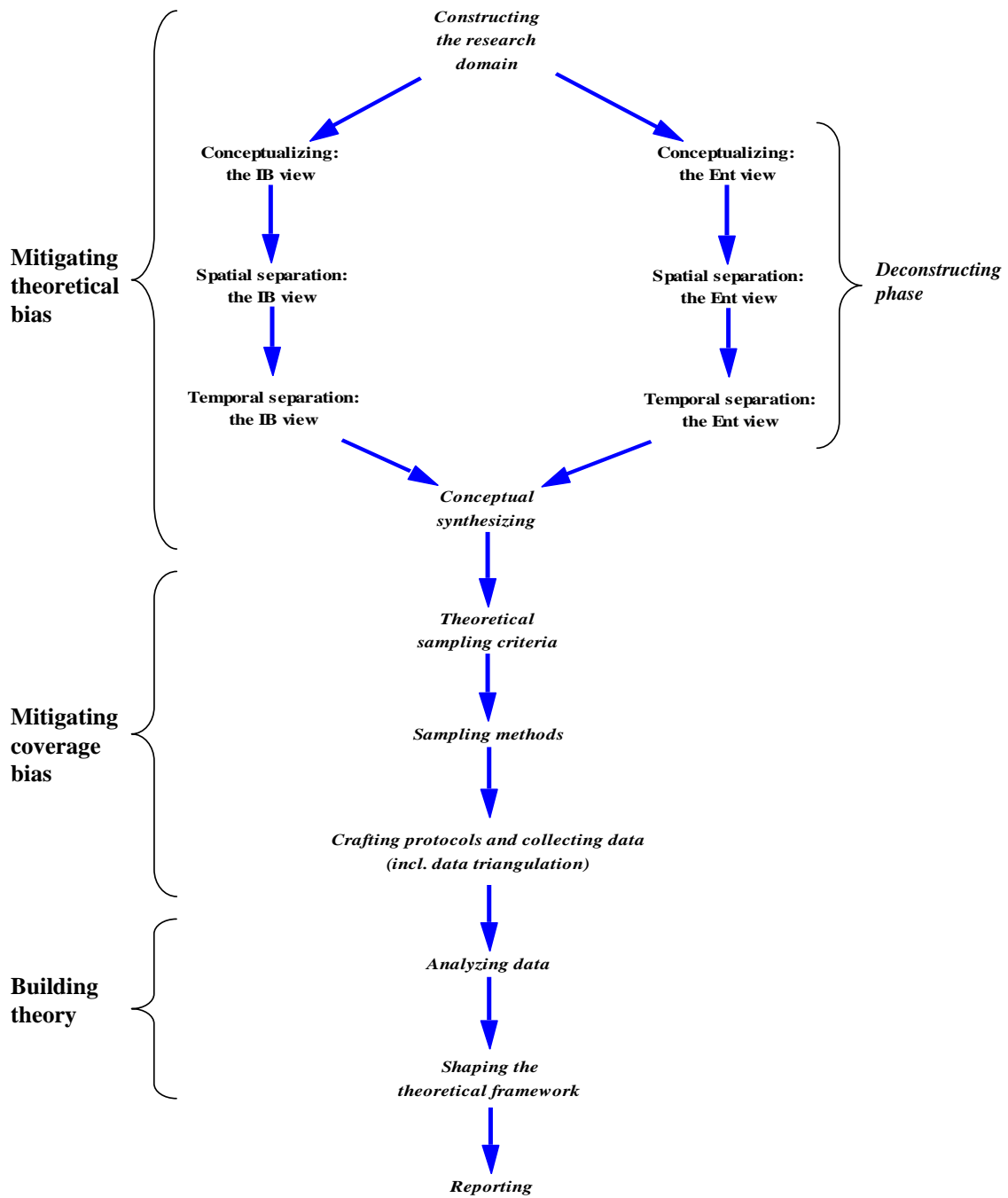
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Table 1. Definitions of international entrepreneurship evolving

Authors	Year	Definition
Oviatt and McDougall	2005	IE is the discovery, enactment, evaluation, and exploitation of opportunities – across national borders – to create future goods and services.
Turcan and Mäkelä	2004	IE is a process of discovering and exploiting international venture ideas that are intended to create new value in organizations and in the marketplace.
Dimitratos and Plakoyiannaki	2003	IE is an organization-wide process which is embedded in the organizational culture of the firm and which seeks through the exploitation of opportunities in the international marketplace to generate value.
Zahra and George	2002	IE is the process of creatively discovering and exploiting opportunities that lie outside a firm's domestic markets in the pursuit of competitive advantage.
McDougall and Oviatt	2000	IE is a combination of innovative, proactive, and risk-seeking behaviour that crosses national borders and is intended to create value in organizations.

Figure 1. A three-stage theory-building framework to facilitate controlling biases



Note: IB – international business; ENT – entrepreneurship.

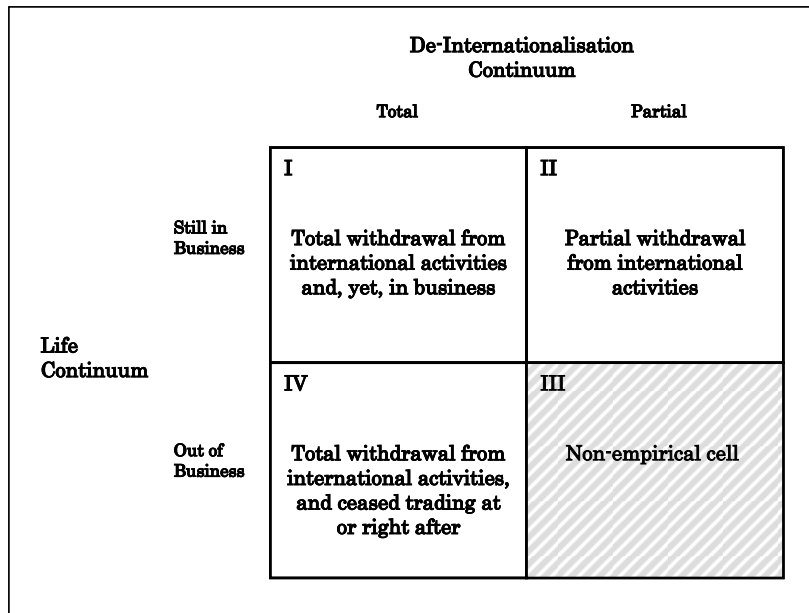
Table 2. SHTFs study: maximising research quality

Criteria	Suggested case study tactics [†]	Tactics adopted in the SHTFs study
Construct validity	<ul style="list-style-type: none"> • Use multiple source of evidence • Establish chain of evidence 	<ul style="list-style-type: none"> • Each case had at least three points of reference • Outer bracketing strategy was used to control for the effect of external environment on selected cases • Temporal bracketing strategy (Langley, 1999) was used to decompose data into successive adjacent periods • Event list matrix was employed to explore what led to what, when, how and why (Miles and Huberman, 1994) • Critical incident technique was used to collect data (Chell, 1998)
Internal validity	<ul style="list-style-type: none"> • Have key informants review draft case study report • Do pattern-matching • Do explanation-building • Enfolding literature 	<ul style="list-style-type: none"> • All entrepreneurs received detailed case study write-ups, and all their comments were incorporated • Technique of constructing typologies by reduction was employed to develop typologies (Glaser, 1978) • Middle-range theorising (Merton, 1968) was used to manage the complexity of the emergent process model of de-internationalisation • De-internationalisation phenomenon was explained by describing and exploring each case in narrative form • Emergent constructs and theory were constantly compared with the extant literature
External validity	<ul style="list-style-type: none"> • Use replication logic 	<ul style="list-style-type: none"> • Theoretical and snowball coverage strategies were employed to select and locate the cases (Patton, 2002) • De-internationalisation typology was developed to guide the case selection process (see figure 2) • Analytical generalisation: moving from data to middle-range theory of <i>point of no return</i>
Reliability	<ul style="list-style-type: none"> • Use case study protocol • Develop case study database 	<ul style="list-style-type: none"> • The following key activities of the case study protocol were adopted in the present study: <ul style="list-style-type: none"> • Negotiating access to the site • Writing the history of each case and highlighting the event of interest by exhausting all secondary sources prior to the interview • Validating the history of the case at the first interview and probing into the critical event following the interview guide • Negotiating access to company's stakeholders • Negotiating access for follow-up interviews • For each company a separate database was developed which included, inter alia, company documents, statistics, expert opinions, and interviews with stakeholders and entrepreneurs

[†] Derived from Eisenhardt (1989b: 533) and Yin (2003: 34)

Figure 2. SHTFs study: de-internationalisation typology

2.a) Creating typology by reduction



2.b) Theoretical coverage

