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High Potential Concepts, Phenomena and Theories in International Entrepreneurship Research Special Issue submission

INTERNATIONAL ENTREPRENEURSHIP: EXPLORING THE LOGIC AND UTILITY OF INDIVIDUAL EXPERIENCE THROUGH COMPARATIVE REASONING APPROACHES

ABSTRACT

In this paper, we suggest that individual experience and reasoning, as applied to new endeavors in internationalization, are concepts with high potential to advance conceptual and empirical research in International Entrepreneurship (IE). Experience is known to be important in internationalization, but the logic or reasoning with which it is applied is insufficiently understood. Cognitive, comparison-based reasoning theories explain how individuals draw on experience to make sense of uncertain, novel and complex situations. Drawing on two such theories, heuristics and analogical reasoning, we delineate the logic of experience, and advance speculative propositions on its utility in the context of internationalization research.

INTRODUCTION

Since its inception, International Entrepreneurship (IE) has drawn attention to the importance of individual entrepreneurs or managers[1], in the internationalization of their firms (Oviatt, Maksimov & McDougall, 2011). Jones, Coviello and Tang's (2011) review of IE research over 1989-2009 reflects that the nature of the individual and her knowledge, behavior and cognition is widely noted as influential. For instance different types of entrepreneurs e.g. marketing, technical or structural entrepreneurs (Andersson, 2002; Hutchinson, Alexander, Quinn & Doherty, 2007), and entrepreneurs returning from abroad (Filatotchev, Liu, Buck & Wright, 2009) bring experiential knowledge to firms that influence its internationalization. Entrepreneurs' international orientation and risk perception, tacit knowledge and vision influence the degree of internationalization (Perks & Hughes, 2008; Ruzzier, Antoncic, Hisrich & Konecnik, 2007), as does their personal history (McGaughey, 2007). Previous international experience elicits international opportunity through both deliberate search and discovery (Chandra, Styles & Wilkinson, 2009), this is important because it involves a problem solving process of connecting existing resources and skills with new outcomes. Technical knowledge and international work experience in particular impact performance (Bloodgood, Sapienza & Almeida, 1996; Kocak & Abimbola, 2009). Jones et al. (2011) identify cross-country comparisons of entrepreneurs that show their characteristics, traits, perceptions and behaviors to differ across borders (Gupta & Fernandez. 2009; Lussier & Pfeifer, 2000). Contrarily, some studies comparing cultures found that entrepreneurs may hold similar values across cultures (McGrath & MacMillan, 1992), while differing from non-entrepreneurs (Ardichvili & Gasparishvili, 2003).

[1] For parsimony in this article, we use the term entrepreneur or individual rather than e.g. manager, owner, founder or decision-maker. We acknowledge differences between these categories but for the purposes of this article, we are concerned with individuals who have a sole or influential role in problem-solving and decision-making in relation to internationalization, where internationalization is considered to be the extension of entrepreneurial behavior across national borders. Our reasoning is thus consistent with McDougall and Oviatt (2000) and Jones and Coviello (2005).

Underpinning many of the individual influences on internationalization is personal experience, yet despite growing attention to experience in IE, few studies open the 'black box' of the logic of experience, to understand the reasoning with which it is applied. Therefore, our potential to examine how individual experience is made useful in internationalization leading to outcomes such as higher performance is limited.

In contribution, we suggest that experience becomes useful when compared and extended through cognitive reasoning processes, to the solution of current problems. Our objectives in this paper are to identify and extend concepts from cognitive theories of comparison-based reasoning to ask how individual experience and associated reasoning processes may be better understood, and applied to the context of IE. Our focus is on the individual as the person bringing experience to the firm, and her reasoning processes. Thus, we see experience as a resource rendered useful to the firm through the proclivity and capability of the individual towards particular processes of cognitive reasoning.

To address our objectives we import and synthesize concepts from cognitive theories on reasoning-by-comparison (Gentner, Holyoak & Kokinov, 2001); i.e. heuristic reasoning (HR) and analogical reasoning (AR) that explain an individual's logic of experience[2]. Because HR and AR emphasize comparison between previously known (experienced) situations and those newly encountered (Holyoak & Morrison, 2012), we believe them to be particularly relevant in internationalization in which, often-complex decisions are made in conditions of uncertainty, limited information and computational capability (Simon, 1972). Such difficulties may prompt entrepreneurs to turn to reasoning-by-comparison of new international endeavors with

[2] It is important to note that while we focus on the analogical reasoning (AR) as a cognitive process operating between experience and a focal problem or situation, analogy can be arrived at externally, computationally, and may involve comparison of objective or percipient information across multiple domains.

previously-experienced domestic or international situations, and their own idiosyncratic life experiences (Casulli, 2011).

The paper proceeds as follows: The next section entitled Experience, profiles individual experience as a conscious process involving awareness and involvement, and through summary review, suggests that the concept of experience is under-theorized in IE. From that point, the next section, Reasoning -by-Comparison: Two Approaches, provides an overview of heuristic and analogical reasoning. Here we advance a simple descriptive model positioning HR and AR as cognitive processes, linking prior experience with a new situation and influenced by the individual's current percipient context. We then compare and contrast HR and AR on three dimensions: A) general theoretical assumptions, B) reasoning processes, and C) limitations and effects, and contribute a comparative summary table. In drawing Implications for IE Research, we contribute a further table advancing speculative propositions on the utility, effect and limitations of HR and AR in relation to key research questions in IE. In the final section, Conclusions and Future Directions, we call for conceptual and empirical studies in IE that examine the reasoning-by-comparison proclivity and capability of internationalising entrepreneurs, as well as the power of comparative reasoning in computational analysis in determining successful internationalization outcomes. We conclude by suggesting that heuristic and analogical reasoning theories provide the means through which we might better understand the utility of personal experience to internationalising firms, and impact on internationalization dynamics and performance.

EXPERIENCE

The general nature of individual experience

Experience matters because, it is through experience that we understand the world we live in, and reason our way through its challenges (Goffman, 1974; Morris, Kuratko, Schindehutte, & Spivak, 2012). Experiencing occurs when we live through some aspect of life and feel that process through our senses (Morris et al., 2012). It is a conscious process and requires awareness and involvement e.g. by being, doing, observing or living an event as it unfolds (Lamb, Sandberg & Liesch. 2011). Experience or experiential knowledge derives from the process of experiencing and may be current*, "in the moment"* (Morris et al.,2012: 11), or prior, where knowledge from previous experience is recalled and projected to a new event or problem (Kahneman & Tversky, 1973; Shane, 2000). Experience once lived, and unless externally codified (e.g. written down for future reference), is stored in memory (Kokinov & Petrov, 2001). This is important because although human memory has capacity for a huge store of experiential knowledge, that knowledge may not be readily accessible, may require triggers to extract it, and processing to make it useful (Kokinov & Petrov, 2001). As will be discussed later in the paper, experience is intrinsic to reasoning. Yet experience at an individual level is under-theorized in IE research, most often examined as an aggregate concept at the level of the firm as prior experiential knowledge (Casillas, Moreno, Acedo, Gallego & Ramos, 2009).

Experience as Prior Knowledge in Internationalization

Prior knowledge (experience) is widely identified as influential in internationalization as an attribute or knowledge resource of the firm, or the individuals within the firms, that influences internationalization decisions. Prior knowledge (experience) enables the interpretation of new information (Grégoire, Barr, & Shepherd, 2010). In conditions of complexity, uncertainty and

risk, available information is incomplete, and the number of environmental factors is so high that computation to arrive at the best course of action is infeasible (Simon, 1972). In uncertain conditions, such as in internationalization, individuals are likely to rely on previous experience to deal with novelty and complexity (Figueira-De-Lemos, Johanson & Vahlne, 2011). Entrepreneurs and senior managers often have significant influence on decision-making (Hambrick and Mason, 1984); and are likely to approach international endeavors according to their own experience prior to making or advancing a decision (Boter & Holmquist, 1996; Michailova & Wilson, 2008; Reuber & Fischer, 1997; 2002). In such situations, managerial experience partially compensates for a lack of information and deficiencies in objective processing (Markman & Moreau 2001). In smaller firms in particular the decision-maker is an important force in initiating and driving internationalization (Dimitratos, Petrou, Plakoyiannaki, & Johnson, 2011; Michailova & Wilson, 2008), and experiential knowledge is crucial for internationalization activities (Fletcher & Harris, 2012; Fletcher & Prashantham, 2011; Johanson & Vahlne, 1977; Madsen & Servais, 1997).

Welch and Welch (2009) describe the experiential knowledge of the firm as a heritage from its previous activities including previous country entries and exits and knowledge gained from international networks. Experiential knowledge gained from direct involvement with international activities, includes mistakes as well as positive outcomes, and results from living the experience. Experiential knowledge also comes vicariously through network partners as well as direct involvement and impacts internationalization differently (Fletcher & Prashantham, 2011). For example, Schwens and Kabst (2009) found that firms relying on vicarious knowledge were more likely to internationalise earlier than those whose knowledge came through direct experience. Thus, vicarious knowledge reduces uncertainty in internationalisation by increasing

perceived familiarity, or by increasing the stock of objective information available for computation. Experiential knowledge is sourced from experience but distinctions between sources of experience and types of knowledge are sometimes blurred in the literature, and the processes of experiencing and applying experience to new international endeavours under-researched.

Types and Sources of Experience in Internationalization

Prior international experience including education, experience from living abroad and from internationally oriented jobs, molds the mind of the founder; and lowers perceptions of uncertainty and in particular decreases perceptions of psychic distance to specific product markets (Johanson & Vahlne, 1977, 1990). Prior experience from similar settings helps to reduce uncertainty (Alvarez & Barney, 2005) in subsequent internationalization endeavors. Experience (from background, knowledge and networks) creates competencies that make entrepreneurs alert to opportunities to combine resources from different national markets (McDougall, Shane & Oviatt, 1994), and experientially based competencies help alleviate liabilities of newness and foreignness (Mudambi & Zahra, 2007).

Specific types of experience such as that gained from international work assignments, different industries or different operational functions than those of the focal firm, influence entry mode decisions and the wider the experience the more likely the firm will opt for full control modes (Nielsen & Nielsen, 2011). Top management teams in internationally experienced industry clusters are more likely to recognize opportunities (Fernhaber, Gilbert & McDougall, 2008), and be able to draw on knowledge from exposure to international networks (Fernhaber &

Li, 2013). In general, widely experienced people are identified amongst causal factors of the born-global firm (Madsen & Servais, 1997).

While international experience of different types is consistently associated positively with internationalization, findings on the impact of experience attained in domestic settings show more variable results. Meuleman and Wright (2011; 36) claim that *"*--the knowledge required for a firm to operate in a foreign environment is different from that accumulated in the home *country"* and that experience with local partners through alliances may provide the necessary contextual knowledge. Experience in domestic settings prompts venture capitalists to seek geographic diversification thus serving as a primer for internationalization (Schertler & Tykvová, 2011), while international experience confers confidence to make investments abroad and plan them more accurately. Giarratana and Torrisi (2010) contrarily found that home country experience had no effect on foreign market entry and survival and that domestic experience (as reputational capital and legitimacy) is not directly transferable to foreign markets. Coeurderoy and Murray (2008) found prior experience with the home country's regulatory environment for intellectual property protection primed firms to search for and first enter countries with similar institutional frameworks and systems of law enabling efficient decision choices and rapid internationalization. Conflicting results with regard to the effect of domestic experience suggest that there may be other factors at play. For instance, the nature of some types of experience gained in the domestic market may confer superior reasoning capabilities, which then may be transferable to international entry considerations[3].

[3] Throughout this paper we use the term "considerations" rather than "decisions" with regard to international mode and location decisions. Such decisions are often arrived at after lengthy periods of evaluation, may be complex and aggregated or disaggregated from, or disaggregated into many parts (Reuber, 1997). As our focus is on the reasoning process leading up to international decisions, we use the word considerations as representing the process by which a decision may eventually be the outcome.

Dimensions of Experience: Depth, Breadth and Familiarity

In an early review, Reuber (1997) found distinctions between expertise and experience where the former is developed or acquired through the latter. She notes that over time, newer experiences, or those more relevant to the current context replace older ones. Thus, the development of experience is continuous and continually changing in a process described later by Cornelissen and Clarke (2010) as one of sense-making, thus confirming its intrinsic relationship with reasoning. Expertise accumulated through experience therefore is both time and context dependent and is; context rather than task specific; acquired through multiple types of experience, and novel rather than repetitive situations; and acquired continuously without diminishing returns (Reuber, 1997). Studies comparing novice versus expert entrepreneurs (e.g. Baron and Henry, 2010; Dew, Read, Sarasvathy and Wiltbank, 2009) similarly describe experts as those with accumulated and practiced experience. These dimensions of experience are found, in many studies, to impact internationalization in different and sometimes inconsistent ways, and Reuber's (1997) distinction between experience (sense-making or reasoning) and expertise (knowledge, skills and abilities) is to date only partially addressed and often subsumed within aggregate or firm level indicators (Casillas et al., 2009).

Depth of experience such as the number of years of the top management team's involvement in international to domestic operations, together with breadth of experience across countries increases a new entrant's probability of survival (Mudambi & Zahra, 2007). Breadth of experience across countries, and across industries is associated with new knowledge and opportunity alertness (Bingham, Eisenhardt & Furr, 2007; McDougall et al., 1994). On the other hand, involvement as well as years of experience signifies depth, and several authors refer to effortful engagement in the process of acquiring experiential knowledge. Meuleman and Wright

(2011), reflect a commonly articulated view in saying that depth of experiential knowledge is gained through direct involvement, and the intensity of experience.

Acquiring useful knowledge of foreign businesses and institutional practices requires actual sustained involvement and many repetitive experiences (Autio, Sapienza & Almeida, 2000), although contrarily routines may ensnare a firm in a dominant logic or competency trap that could inhibit as well as enhance internationalization. Sustained and intense involvement thus enables depth of experience whereas repetition develops familiarity with the setting and the types of problems encountered in that setting. At a cognitive level, familiarity enables intuitive responses due to "repeated exposure to the complexity of real problems" (Khatri & Ng, 2000: 78) and experience of certain situations to the extent that they can recognise signs and patterns and automatically identify relevant information (Blume & Covin, 2011).

Familiarity with internationalization decision-making through repetition in new contexts is implicit in the experience-based heuristic rules discovered by Bingham et al. (2007) in which firm members collectively transformed previous entry experiences into shared decision schemas. Experience interacting within the foreign market with network partners engenders institutional and business familiarity with the host country (Sommer & Haug, 2011). Experience, is attained by entrepreneurs through a systematic and proactive process (Dimov, 2007). Systematic process engenders familiarity and in internationalization, familiarity evolves from the extent of the entrepreneurs' interaction with foreign market players and the process of analyzing the markets (Schwens & Kabst, 2011). Familiarity with a particular kind of institutional context (e.g. the legal environment in the home country) is likely to influence the decision to internationalise, the choice sequence of foreign country locations, and the speed of successive market entries – but is

subject to bias from previous experience in the home country environment (Coeurderoy & Murray, 2008).

Lack of Experience, Negative Experience and Salient Effects

International experience is generally considered to have a positive impact on internationalization, however Lindstrand Melén and Nordman (2011), suggest that the prevalence of such findings might be due to the over-sampling in research of successful internationalization outcomes. Difficulties of inexperience are more rarely reported, e.g. Coeurderoy and Murray (2008) note that firms with no relevant country experience may find it difficult to find local sales agents, negotiate favorable contracts and effectively monitor concluded deals. Some entrepreneurs found the experience of internationalization so negative that they would never do it again (Crick, 2002; 2004), suggesting that the actual problems encountered may have been subsumed within a strongly negative emotional primer (Baron, 2008). Furthermore Welch and Welch (2009) refer to "failure myopia" where successful experiences are drawn on more often than failures, thus the emotional salience of prior experience may impact new or re-internationalization considerations. They also suggest that negative outcomes and mistakes made while learning-by-doing may have a positive and constructive impact on future internationalization efforts. Experiential learning however may also reinforce initial choices and thus bias internationalization decisions according to what is already known or familiar (Coeurderoy & Murray, 2008).

The Idiosyncratic Nature of Individual Experience

The idiosyncratic nature of prior individual experience means that entrepreneurs will not identify the same opportunities (Shane, 2000), and people with better abilities in searching,

processing and scanning than others are more likely to identify opportunities in the first place. Because individual experience is idiosyncratic, ensuing reasoning processes are also likely to reflect unique individual experiences (Casulli, 2011), for instance, Michailova and Wilson (2008) highlight that international sojourns vary tremendously, and opportunities for experiential learning differ depending on the different contexts of each international sojourn. However, learning is complex and individuals may draw on only specific components of their experience, or lump experiences together (Michailova & Wilson, 2008; Zahra, Korri & Yu, 2005). Therefore, while we know that the variety and extent of experience available to individuals will influence internationalization behavior, what individuals take from their experiences and how they understand new situational contexts is inadequately explored to date (Lamb et al., 2011).

REASONING-BY-COMPARISON: TWO APPROACHES

A Simple Representation: Comparison-Based Reasoning and Experience

Experience is intrinsic to reasoning in which new stimuli are compared with prior knowledge in order to make sense of the unknown. HR and AR both involve the comparison of a new situation with previous experience (Gentner et al., 2001), but differ in a number of respects including the way they operate through memory. In this section, we describe and illustrate in simple terms (Figure 1) how we understand HR and AR to link a new contemplated situation with prior experience through reasoning processes involving, recollection, comparison, and mapping or projection (Gentner, 1983; Kahneman & Tversky, 1973).

[Insert Figure 1 about here]

In our simple representation (Figure 1), the process starts when a signal from the environment is picked up by the individual as a new situation that requires contemplation. The

contemplated situation might be e.g. a problem, challenge, opportunity or decision as shown at the right in Figure 1 as the target. The person's current "in-the moment" circumstances (i.e. the situational context that they are currently in), influences their perceptions of the new situation and serves to prime their memory for recollection of comparative prior experiences shown in Figure 1 as the source (Bird, 1988; Grégoire et al., 2010; Morris et al., 2012). HR is shown in the figure as the upper loop connecting the source and target. Theory on HR suggests that recollection tends to be intuitive, fast and based on relatively superficial or surface similarities between what is recalled, and what is contemplated (Kort & Vermeulen, 2008; Tversky & Kahneman, 1973; 1974). The lower loop in the figure shows AR. Recollection and comparison in AR theory are seen as more deliberate, systematic and iterative, with the individual searching their memory for many experiences that correspond in a structural way to specific aspects of what is contemplated (Gavetti, Levinthal, & Rivkin, 2005; Gentner 1983; Grégoire et al., 2010; Halford, 1987; Holyoak & Thagard, 1996).

HR and AR described in this way reflect dual thinking processes sometimes referred to as System 1 and System 2 respectively (Evans, 2012; Kahneman, 2011; Stanovich, 1999). The dual processes of HR and AR are not necessarily dichotomous as suggested in early dual-process models. Evans (2012, 2008) argues that current cognitive research shows the main differences are in the way each draws on and uses working memory, and that they serve different purposes. Therefore we illustrate the two processes in Figure 1 as distinct but potentially complementary. To explain the basic processes described in Figure 1, firstly in the following sub-sections we draw on current thinking in behavioural economics and cognitive psychology to describe and critically evaluate HR followed by AR. Secondly, we draw on literature from those fields in order to compare and contrast HR and AR, and propose implications for IE. We do this on three

dimensions: general theoretical assumptions, the reasoning processes described, and the limitations and effects of each type of reasoning. The results of the comparative process are presented in Table 1 and propositions in Table 2.

[Insert table 1 about here]

Heuristic Reasoning: An Overview

General Theoretical Assumptions of HR. Heuristic reasoning is a process based on comparison between a source and a target or several choice categories. It is of interest in management and entrepreneurship research mainly because the "heuristic" (decision-rule) outcome simplifies and provides short-cuts in decision-making processes (e.g. Bingham & Eisenhardt, 2011; Bingham et al., 2007). Heuristics in that sense refers to judgmental heuristics, or reasoning shortcuts that people use under conditions of uncertainty (Griffin, Gonzalez, Koehler & Gilovich, 2012), and the heuristics (decision-rules) that result, are applied to a pre-determined goal. However, there is a trade-off between time and accuracy in heuristic judgment due to biases in human information processing (Tversky & Kahneman, 1973; 1974).

Reasoning Processes in HR The theory of heuristics and associated biases elaborates the way individuals recollect and use information to make judgments. For instance, information that is easy to recall from memory forms the basis for the availability heuristic, the tendency to judge outcomes of events based on instances of similar events that are readily brought to mind (Kahneman & Tversky, 1973; Schwarz, Bless, Strack, Klumpp, Rittenauer-Schatka & Simons, 1991; Tversky & Kahneman, 1974). Ease of recall depends on the vividness, saliency or recency of memories (Tversky & Kahneman, 1973; 1974). Recent memories tend to stay at the forefront of our minds, whereas strong physical or emotional stimuli heighten memory retention and

recollection (Christianson & Loftus, 1990; Hamann, 2001; Schacter, 1996). Also affected by the representativeness heuristic is judgment; the tendency to estimate whether the situation, event or object at hand is a member of a certain category based on how typical of the category it is perceived to be (Grether, 1980, 1992; Kahneman & Tversky, 1973; Tversky & Kahneman, 1974). In drawing comparisons between a previously experienced situation and the current situation through representativeness, individuals tend to follow a reasoning that may be described as stereotyping (e.g. Kort & Vermeulen, 2008). More importantly, they tend to ignore the fact that their few experiences may not be representative of the reality at hand (e.g. Busenitz & Barney, 1997). Furthermore, individuals are subject to a framing effect in that they are sensitive to the way information is presented to them. They tend to anchor on available information, assign values and adjust from those values regardless of their suitability to the considered problem (Tversky & Kahneman, 1981). Biases associated with heuristics are many and stem from e.g. over-attribution of values, insufficient adjustment from the anchor or overconfidence (Epley & Gilovich, 2006; Tversky & Kahneman, 1974). Biases are particularly prevalent with respect to individuals with limited experience in a certain domain (Fischhoff, Slovic & Lichtenstein, 1977).

Limitations and Effects of HR. Heuristic reasoning is essentially deductive and involves the individual establishing mental hypotheses about projected outcomes from previous experience. However it is intuitive, rather than deliberate (e.g. Kahneman, 2003) and essentially operates on the basis of stimulus-response. Because heuristic processes rely on ease of recall, i.e. the availability, saliency and recency of prior experience, perceived similarity between a recalled experience and the focal problem is likely to be superficial or surface based (Forbus, 2001). In this sense, heuristic reasoning bears resemblance to the linguistic concept of metaphor,

(Cornelissen & Clarke, 2010) in a limited rather than abstract sense in which the recalled experience is described as being "like or as" the focal problem but with limited actual correspondence. Heuristics and Biases, as an approach to understand entrepreneurial cognition is useful in describing deviations from formal rationality in which a few ideal choices or solutions are possible, but is limited in dealing with novelty (Sarasvathy, 2004).

Analogical Reasoning: An Overview

General Theoretical Assumptions of AR Analogical reasoning, like heuristic reasoning operates through a comparison between a target (focal issue or problem) and source (e.g. experience) but differs in a number of respects. While heuristic reasoning is deductive, analogical reasoning may be described as an inductive and iterative process involving inference, and the creation and application of abstract schemas, and is not necessarily goal oriented (Holyoak, 2012). Analogical reasoning typically follows several steps: selection from memory, mapping to the current problem context and generating inferences, and evaluation of the mapping through reflection and learning (Holyoak & Thagard, 1996). In analogical reasoning, the individual deliberately searches her memory for experience that is seen as analogous to the current situation. An analogy in contrast to a heuristic (Tversky & Kahneman, 1974) or metaphor (Cornelissen & Clarke, 2010) is representative at a deeper level and signifies perception of actual correspondence (over and above likeness) between one or potentially many experiences and the observed problem at various levels (Holyoak, 2012).

Reasoning Processes in AR In analogising, memory search is deliberate as well as intuitive and reasoning involves a considered process of recollection extending beyond a simple process of retrieval. Holyoak and Thagard (1996: 192-3) distinguish four ways in which sources

might originate. Firstly noticing refers to a serendipitous encounter while contemplating the new situation e.g. while considering entering France an entrepreneur might by chance see a news item about France on the television which serves as a source of insight and triggers recall of experiences relevant to the news item from which inferences are made to the new situation. Secondly retrieving may involve the recollection of many experiences, which partially compare to aspects of the new situation. Thirdly, where a recalled experience has no new situation for comparison, the process of compiling of experiences over time enables reasoning towards new outcomes. Fourthly constructing occurs where no source experience compares to the new situation, and correspondence must be constructed from complex associations of experiential knowledge across different domains. The process of mapping elements of correspondence between the source and target (in our case prior experience and the new situation) is based on perceived structural alignment, or in the words of Grégoire et al. (2010: 417) – the ability to "recognize meaningful patterns" between the objects or situations compared. Mapping may involve several levels of complexity including; attributional (based on attributes of the situational context), relational (based on relations between contexts), and systemic (based on higher order relations between relations), and attempts to align corresponding elements (Gentner, 1983; Halford, 1987; Holyoak & Thagard, 1996).

Limitations and Effects of AR. Analogical reasoning is essentially inductive and builds rather than tests propositions about the new situation from potentially many experiences. In AR, the individual makes intuitive inferences, but is likely to proceed to a deliberate search for correspondence and alignment, at various levels as previously listed (Gentner, 1983; Grégoire et al.,2010; Halford, 1987). Bias (i.e. belief bias) is present in analogical reasoning as it is in heuristic reasoning. In AR though, it may be overcome by the systematic processes of

analogising, mapping, and alignment, and the different conditions under which heuristic and analogical reasoning are conducted e.g. the time available, the purpose for the reasoning and the individual's general cognitive ability (See Evans, 2012 for a summary). Effective analogising is also subject to certain constraints, which are: 1) similarity, "ability to detect similarity between situations despite their differences", 2) structure "capacity to combine concepts to create more complex structures", and 3) purpose – the reason analogy is being used e.g. explanatory reasons, problem solving or planning (Holyoak & Thagard, 1996: 247).

Similarities and Distinctive Differences between HR and AR

Similarities in HR and AR include that they both operate on intuition and knowledge from previous experience but essentially serve different purposes. Where HR is used to make judgments on choices in conditions of uncertainty, AR deals with problems that are more complex and forms new conjectures by aligning specific features of prior experiences to features of a new situation or problem. Because it relies on the cognitive capability of the person to recognize patterns, or to join the dots across knowledge domains, or where there is missing information, it is particularly useful in identifying opportunity (Baron & Ensley, 2006; Gavetti et al., 2005). HR and AR use intuition in different ways and whereas HR tends to use intuition to make immediate judgments, AR seems to use intuition as a primer for an elaborate analytical process however; we make this suggestion with caution given current debates in cognitive psychology on intuition (Blume & Covin, 2011).

The individual's awareness of her current situation, and immediate past, primes memory recall in both HR and AR (Table 1). Association with the contemplated situation, and importantly also with the current situation, triggers the retrieval of memories that the person is

currently living through. For example, the person's current emotional state may prompt the recall of either negative or positive memories (Baron, 2008). The same is true of the current activities and context the person is experiencing, e.g. drawing on and speculatively extending Coeurderoy & Murray's (2008) interpretation of their findings, it is possible that the very familiar legal environment of the home country may have primed a memory search for features corresponding to those in foreign markets. Beyond priming, Evans (2012), and explicitly Forbus (2001: 25) distinguish between different levels of retrieval from memory and the application of memories to reasoning such that "--similarity based retrieval is surface based, but similarity based reasoning is structurally driven". Where HR relies on intuitive associations, surface and ostensibly superficial representations and stereotyping, AR involves a deliberate and deeper search of memory for multiple corresponding associations and involves a complex alignment or mapping process to the focal problem (Gregan-Paxton & Moreau, 2003). Analogical reasoning is considered to be a higher order cognitive process, placing a considerable load on working memory, and operating on pattern recognition thus enabling identification and construction of opportunities (Baron & Ensley, 2006; Barrett, Tugade & Engle, 2004; Evans, 2012). Deliberate effort (such as in analogical reasoning), i.e. intense, repeated and effortful engagement, is linked to superior achievements, leading to expert performance and is associated with improvements in cognition, in both information acquisition and retrieval of relevant information from memory (Baron & Henry, 2010). Because AR involves deliberate reflection, the new experience is stored with other experiences in memory thus accumulating the stock of experience from which to draw (Reuber, 1997). It also involves reflection on the search for analogies thus the analogical process, i.e. reasoning principles rather than heuristic shortcuts, is refined and becomes more sophisticated over time, and the stream of experience is adjusted accordingly (Reuber, 1997).

Practicing analogical reasoning over many novel and complex problems therefore increases reasoning capability, speed and expertise such that it may appear to operate like a heuristic of a higher order as e.g. found by Bingham et al., (2007) in relation to successive internationalization decisions. Thus, attribution to heuristics may mask a sophisticated process of analogical reasoning, in a similar way to which attribution to intuition may mask its actual use (Blume & Covin, 2011).[4] In a similar vein, entrepreneurs who have accumulated experience embodied as expertise (Reuber, 1997) or approach a problem as experts (Baron & Henry, 2010), may make judgments from either HR or AR as influenced by the task or context specificity of previous experiences. Heuristic and analogical reasoning operate on experience in different ways with different outcomes, and therefore may be more useful or effective in differing conditions. The effects and implications are yet to be explored in IE although a few pioneering studies are emerging. For example, Bingham et al. (2007) found that experience is translated, by management in firms, into articulated heuristics or decision rules that support rapid internationalization. Contrarily, Grégoire et al., (2010), in searching for prototype cognitive schemas, used by individuals in pursuit of opportunity, found instead that they draw parallels between previous experience and new challenges. Thus, they identify processes of structural alignment similar to those described by Gentner (1983) as constituent to AR. In IE, Zheng, Khavul and Crockett (2012) noted that domestic market experience is transferred to foreign market entries through an analogical reasoning mechanism.

IMPLICATIONS FOR IE RESEARCH

[4] Importantly, analogical reasoning may be performed externally and computationally, and in teams, as well as cognitively by individuals e.g. where a target problem or goal is compared systematically to an array of "known" information, and aligned according to correspondence at various levels.

Welch and Welch (2009) suggested that it is difficult to anticipate what specific lessons an individual will take from previous international activity.

"----the connection between former international experience, its outcomes, and types of learning, and the links between organizational memory and individual perceptions, are not straightforward, so that it is difficult to anticipate a priori what specific lessons will be taken out *of former international activity"* (Welch & Welch, 2009: 570).

Given the idiosyncrasy of individual experience, of signals or stimuli from the new international situation, and of primers from the individual's current context that influence both memory recall and the reasoning processes applied; it would be foolhardy to attempt to hypothesise explicit links between experience, reasoning and decision outcomes. Indeed, whereas HR is essentially deductive and goal-driven, analogical reasoning, in common with the effectuation approach to entrepreneurial reasoning (Sarasvathy, 2001; 2004), is essentially non-predictive and useful for problem-solving where the outcome is uncertain and the task complex. Both HR and AR are subject to bias and error, and rather than prescribe rationality where we know it to be limited or impossible; it may be more useful to speculate on the general utility of individual experience and comparative reasoning approaches in IE. After all "Comparing novel situations to familiar ones and finding correspondences between them , and then using these correspondences to generate inferences about the new cases, is integral to human thinking" (Holyoak & Thagard, 1996: 262).

Asserting that individual cognition must be important in IE, we advance a number of speculative propositions (Table 2) with an aim to stimulate further conceptual and empirical research on the interplay of experience and reasoning in the context of internationalization. International Entrepreneurship (IE) is concerned with the extension of entrepreneurial activity across borders

(entrepreneurial internationalization - EI), and international comparisons of entrepreneurial behavior (Jones et al., 2011; McDougall & Oviatt, 2000). In this paper, we are primarily concerned with the former and in particular to better understand how individual entrepreneurs or managers use prior experience in reasoning, in pursuit of international opportunity towards market entry, mode or exit considerations. Mode and location considerations are at the core of theorising in international business, (Buckley, Devinney & Louviere, 2007), and feature strongly in internationalization theory (Jones & Coviello, 2005), while opportunity is considered a defining process in IE (Oviatt & McDougall, 2005). Our approach is cognitive and levelled at the individuals' reasoning processes that precede and complement internationalization behavior (Jones & Coviello, 2005).

Table 2 corresponds in structure and sequence to Table 1, which distinguishes HR and AR on three levels: A. general theoretical assumptions; B. the processes by which experience and reasoning are interlinked; and C: limitations and effects. In relation to each of these levels respectively, we map key concepts from IE, namely: 1) the international context of IE in which the approaches may have utility, 2) the interplay between the individual's experience, the internationalization context and reasoning, and 3) the likely effect and limitations of HR and AR on internationalization dynamics (temporal and spatial patterns of internationalization). In Table 2, therefore, we distinguish the practical and theoretical utility, effect and limitations of HR and AR and advance speculative propositions for conceptual and empirical debate that we believe have high potential to advance IE research.

[Insert Table 2 about here]

CONCLUSIONS AND FUTURE DIRECTIONS

Of particular relevance and interest for IE is how heuristic and analogical reasoning, as well as other cognitive theories might distinguish entrepreneurial compared to more traditional internationalization patterns over and above the behavioral markers of established modes, country locations and timing of the same (Jones & Coviello, 2005). It seems reasonable to suggest that HR might underpin incremental country entries in which there is little change in the mode employed, and countries entered are perceived as similar, at least superficially, to those previously experienced. On the other hand, familiarity and deep experience of an industry may support AR and systematic structural alignment of the domestic industry, at various levels with those abroad. Speculatively therefore, AR may underlie findings that some professional firms deliberately seek countries that share the same language or institutional structure (Coeurderoy & Murray, 2008). Also intriguing are the findings of Zheng et al. (2012) in that firms are able to transfer alliance experience gained in the domestic market to new alliances overseas through the mechanism of analogical reasoning. Importantly, the latter two studies, as well as Bingham and Eisenhardt (2011), Bingham et al. (2007) and Michailova and Wilson (2008) examine reasoning, as a firm rather than individual level process, and draw attention to the need for formal learning processes to promote the transference of experiential knowledge from one context to a novel one. Clearly, alternative interpretations on the role and efficacy of experiential knowledge are possible, and conflicting findings are likely to continue until future research deepens insight into the interplay between experience and reasoning; and between individual cognition and firm-level behaviour.

Turning now to internationalization processes, it seems reasonable to suggest those building on accumulating experience and HR, rather than AR, are likely to be rapid if each successive decision is reasoned in a similar way to the previous and commencing from an initial home (or initial) country bias and familiarity. Repeated experience in a task enables and reinforces the development of heuristic decision rules or frames (Bingham et al., 2007; Bingham & Eisenhardt, 2011; Mitchell, Smith, & Seawright, 2000; Mitchell, Smith, Morse, Seawright, Peredo & McKenzie, 2002). Therefore individuals (and firms) learn to select country markets that are familiar in that they fit the frame previously constructed (Coeurderoy & Murray, 2008), or draw on similar heuristics - thus successive country entries can be made quickly. What is not known is the extent to which bias associated with HR might lead to a path dependent internationalization process and limitations in capability development (Autio, George & Alexy, 2011), including abilities to recognize, enact or exploit new opportunities due to bias associated with e.g. home market familiarity (Coeurderoy & Murray, 2008). Despite the superficiality of experience retrieval in HR, it is entirely possible that a development pathway established through HR could enable the accumulation of expertise on a very specific type of internationalization process (e.g. export development) therefore supporting efficient and rapid internationalization decisions based on learned, transferred and agreed heuristics (Bingham and Eisenhardt, 2011; Bingham et al., 2007). A possible trade-off might be the ability to simultaneously develop breadth of experience across different industries, or significantly different countries, leading to difficulties in identifying novel international opportunities, or ability to reason effectively in situations that are entirely new or more complex than those previously encountered. This contrasts to AR, which is likely to be more powerful in discovering or creating opportunity (Gavetti et al., 2005; Grégoire et al., 2010).

Because AR involves the linking of multiple experiences from memory with similar features of a focal problem at deep - attributional, relational and systemic levels, creative solutions are likely to be found and new opportunities created (Smith & Ward, 2012). Christensen and Schun (2007), and Grégoire at al. (2010) suggest that remote analogies that are further removed from the problem scenario are more likely to produce creative decisions or solutions. These implications of AR correspond with theories from other fields e.g. the combinative capabilities approach (Kogut & Zander, 1992), and social capital's structural holes (Burt, 2004) that explain the creation of value through novel combinations of complementary assets (Schumpeter, 1934), and have considerable utility in IB. From this, it is reasonable to assume that the deeper and more diverse experience the entrepreneur has (Bingham et al., 2007; McDougall et al., 1994), the more likely it is that her experience will be useful to the firm in seeking new opportunities if analogical reasoning is encouraged, and learning from it transferred to organization-level analytical processes. Evidence from strategic management shows that analogical reasoning is particularly effective in novel and complex situations where there is both breadth and depth of industry experience, with breadth of experience improving performance over depth when managers pay attention to actual similarities and differences between industries (Gavetti et al., 2005).

By extension, the same effect is posible in internationalization where breadth over depth of country as well as industry experience, may increase marginal returns to performance in opportunity development (Reuber, 1997). Thus while it is known that both breadth and depth of experience underpin entrepreneurial internationalization and the establishment of INVs (Oviatt & McDougall, 1994), we have little understanding to date on the extent to which it is the reasoning process applied to experience that is important in distinguishing INVs from other firms, or

dynamic internationalization pathways from traditional ones. INVs, that are quickly able to establish and coordinate diverse value activities across several countries, benefit from the experiential knowledge held by their founders (Oviatt & McDougall, 1994). It is also worth considering that INVs are noted predominantly in studies of knowledge intensive industries (Bell, 1995; Coviello & Munro, 1997; Jones, 1999; Knight & Cavusgil, 2004; Madsen & Servais, 1997) in which the complexities of technologies and technological processes as well as prior training of scientists in analogical information processing (e.g. Nersessian, 2008) might predispose entrepreneurs to AR.

We propose that HR and AR are particularly promising theoretical approaches to advance International Entrepreneurship (IE) in which innovative, proactive and risk-seeking behavior distinguishes entrepreneurial internationalization (EI) from more traditional forms (Jones et al.,2011; Oviatt & McDougall, 1994), but where there is only partial understanding of the reasoning preceding those behavioral patterns. They are also promising with regard to the novel and complex nature of even the most simple internationalization considerations, which by their nature involve diversification into new country contexts, or diversification into new functional modes of activity, where outcomes are uncertain and risky. At a practical level, we propose that both incremental and immediate pathways to internationalization, opportunities followed, and the decisions through which they are realised, rely on a reasoned comparison between what is previously known through experience, and the situational contexts that are yet unknown in making new international endeavors. Equally, we believe that analysis based on comparison between, industries, countries, or modes of operation is invaluable whether arrived at through cognitive processes or through external computation as a behavioural process at the level of the firm. The process of analogising elicits important differences as well as similarities thus alerting

entrepreneurs to opportunities and potential operational challenges that need consideration in new international endeavors.

Because heuristic and analogical reasoning rely on comparison between prior experience, or experiential knowledge and new situations, they provide mechanisms for rationalisation where uncertainty is high, and information inadequate, conditions that prevail in cross-border business decisions. Identifying similarities between what is known and what is not yet known also alerts the individual to differences between situations or scenarios which if systematically pursued may mitigate the risks of e.g. mode extensions into different and possibly unsuitable countries. Therefore we believe the education and training of entrepreneurs in reasoning-by-comparison analytical methods should be made available through business schools, training programmes, and policy support interventions.

Finally, most people use HR and AR in everyday life, most often without conscious awareness of their own processes of reasoning. Until we know more about how individuals reason in specific situations such as launching a new venture or extending a venture into new countries we cannot fully understand the ways in which prior experience becomes useful in internationalization considerations, or impacts the pathways and performance of internationalising firms. For these reasons, we call for empirical study on the utility and effects of individual experience and reasoning towards decision-making and opportunity enactment when it extends across national borders. We also call for conceptual and empirical studies in IE examining the proclivity and capability of internationalising entrepreneurs for reasoning-by-comparison, and evaluation of the efficacy of comparative reasoning in computational analysis in determining successful internationalization outcomes. In particular, we believe that reasoning-

by-comparison theories, notably HR and AR provide a sound basis for theoretical and empirical development of the field, and call for their development and application in IE research.

To that end, our intended contributions are as follows: Firstly, we draw attention to the individual in IE as the focus of study rather than the firm or the entry mode, and advance that cognitive approaches may have potential to explain apparently conflicting results on the role of experience in internationalization when examined solely at behavioral level. Secondly, through critical review, we delineate the nature of individual experience and highlight that experience as a sense-making or reasoning process is under-theorized in IE. This we believe represents an exciting avenue for conceptual development. Thirdly, with regard to reasoning, a contribution lies in our review and synthesis of comparative reasoning concepts, HR and AR from the domains of behavioral economics and cognitive psychology respectively. We believe we also make a contribution by bringing together a conceptualization of cognitive processes that shows them operating differently through current experience and memory recall (Evans, 2012). In so doing we show that both HR and AR are not necessarily mutually exclusive and may interact, but operate in different ways and serve different purposes. Fourthly, by identifying the core components of HR and AR in a comparative table we contribute to future research in IE by laying foundational concepts from theories of cognition on which measures and scales for empirical studies in IE may be built. Fifthly, we advance a table of speculative propositions focusing on the interplay between experience and comparative reasoning in relation to key issues in IE concerning mode and country location considerations, international opportunity, and internationalization dynamics. Sixthly and finally, we hope that we make a contribution back to the basic research areas of behavioral economics and cognitive psychology from which the theoretical concepts for this paper are drawn, by extending application of HR and AR theories

into the real-world of applied research – in this case that of International Entrepreneurship (Lowenstein, 2012). The extent to which we are successful relies on future application from IE scholars, and commentary and critique from those in basic research.

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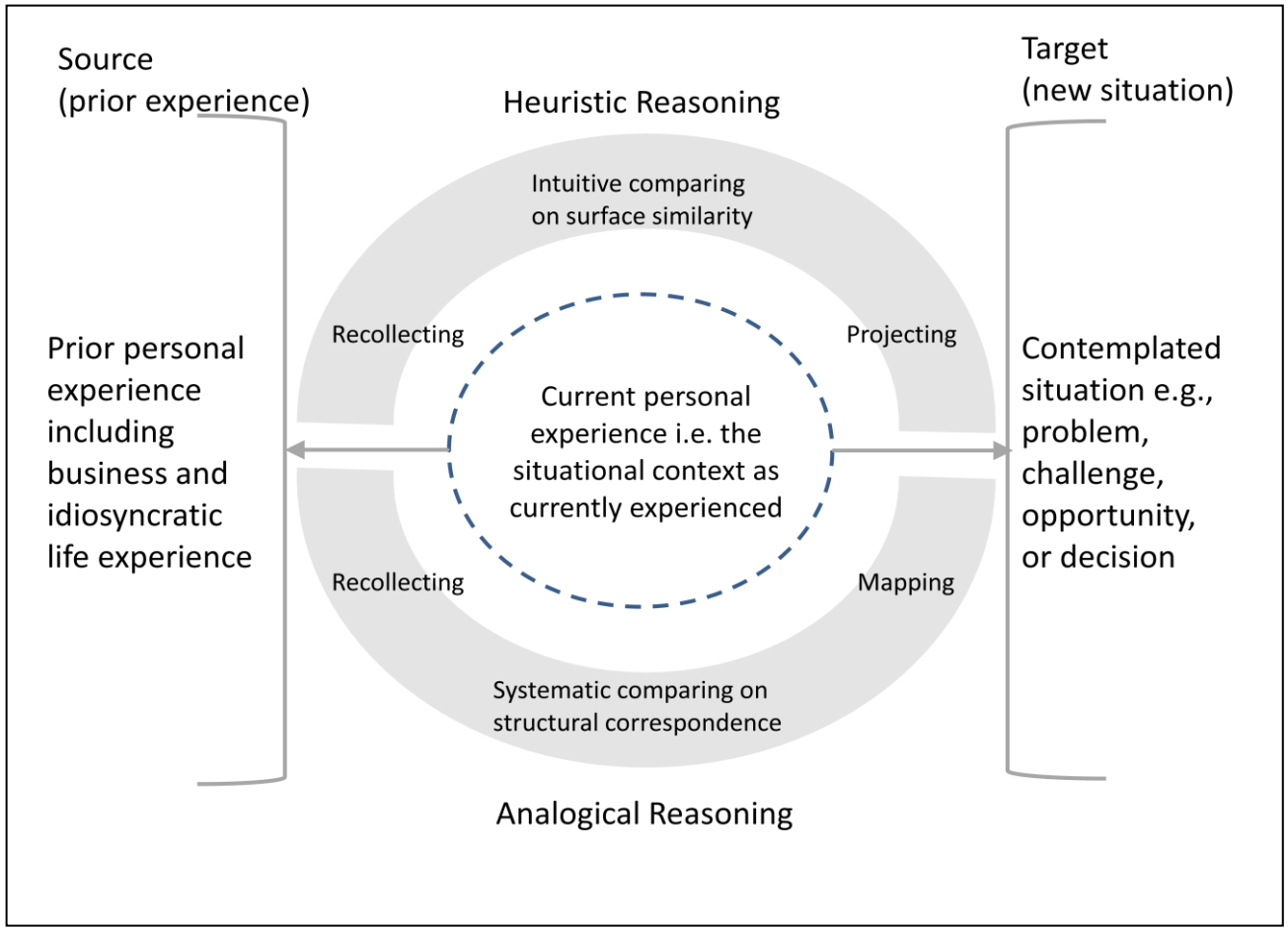
Figure 1: Comparison-Based Reasoning: Linking Previous Experience to a New Contemplated Situation



Source: The authors.

Table 1: A Comparative overview of heuristic and analogical reasoning

	Heuristic Reasoning (HR)	**Analogical Reasoning (AR)**
A) General Theoretical Assumptions		
Type of reasoning	Intuitive. Deductive.	Intuitive and deliberate. Inductive and inferential.
Purpose	The purpose of heuristic reasoning is to make judgments under conditions of uncertainty[1] on the basis of perceived similarity between a representative source and a target or between several choice categories.	To understand a novel situation in terms of one that is already familiar[2]. The fundamental purpose of analogical reasoning is to form new conjectures from inference through the process of mapping perceived correspondences between source(s) and a target[3]
Basis of comparison between source and target	Surface similarity[4]: • Partial/selective • Stereotypical	Structural correspondence[5]: • Attributional • Relational • Systemic
B) The Interplay Between Experience and Reasoning		
Priming/framing effects of current experience on reasoning	The immediate or recent past primes memory recall for example, "— the person's currently active concepts, generic facts, rules, particular past episodes, goals, plans and so on,"[6] and influences reasoning. Current experience also includes: emotional state, and percipient immediacy, uncertainty, information availability and (un)familiarity.	
Process of recalling prior experiences (sources).	Sources are recalled through intuitive association and filtering based on[8]: • Representativeness • Saliency / Vividness • Recency	Sources are recalled and assembled through intuitive association and deliberation[9]: • Noticing • Retrieving • Compiling • Constructing
Analytical processes used in associating source experiences with the target problem.	Projecting: • Anchoring and adjustment[10]. • Extending cause-effect estimations from representative source to target resulting in an "if-then" type of hypothesis, leading to decision judgment.	Mapping: • Systematically identifying correspondences that align elements of the source(s) and target (structural alignment).[11] • Mapping highlights correspondences, which triggers conjecture and new propositions regarding the target.[12]

C) Limitations and Effects		
Limitations on reasoning	Based on estimation: • Biases e.g. – Insufficient adjustment – Over-attribution – Over–confidence	Subject to constraints[13]: • Similarity • Structure • Purpose
Reasoning effect	The construction of heuristics i.e. rules- of-thumb that serve as short-cuts in decision-making.	The construction of; abstract learning schemas, new and creative inferences and solutions.

Source - The authors, drawing on:

1. Tversky and Kahneman, (1974)
2. Holyoak and Thagard, (1996: 32)
3. Holyoak (2012: 234),
4. e.g. Kort and Vermeulen, (2008)
5. Gentner, (1983); Halford, (1987); Holyoak and Thagard, (1996); Holyoak, (2012)
6. Kokinov and Petrov, (2001: 76)
7. In this paper we focus on experience as the source and the target as the focal problem under consideration; individuals hold experience in memory and recall it in response to the target and current primers.
8. Tversky and Kahneman,(1973, 1974)
9. Holyoak and Thagard, (1996: 192)
10. Epley and Gilovich, (2006)
11. Gentner, (1983); Halford, (1987); Grégoire et al., (2010)
12. Holyoak, (2012: 249)
13. Holyoak and Thagard, (1996: 247)

Table 2: A Non-Exhaustive list of speculative propositions on experience and reasoning in IE[1]

Section A: Speculative propositions on the general utility of HR and AR as types of reasoning in the context of IE		
	Heuristic Reasoning (HR) is likely:	Analogical Reasoning (AR) is likely:
International mode/ location considerations:	• to be useful in closely familiar market entry considerations, and • where the organisational context is little changed from a previously made entry. • to be useful with regard to decisions on low commitment entries; entries to countries with low psychic distance, and repeat decisions where a previous mode is repeated in a new country or vice versa. • to be useful for rapid successive entries of the same type under pressure of time.	• to be useful in unfamiliar, or novel and complex international mode and country considerations; and • where the organisational context is changed or likely to change from a previously made entry. • to be useful for high commitment entries; entries to countries with high psychic distance, and for complex multi-mode and/or cross-industry entries. • to be useful where the mode/location consideration involves building country markets for new technologies.
Opportunity evaluation:	• where the international opportunity signal from the environment is familiar but serendipitous or unsolicited, e.g. from foreign buyers, or resulting from a deliberate search on a few, superficial criteria.	• in response to unfamiliar serendipitous or unsolicited opportunity as well as predetermined international opportunities. AR is likely to be most effective in creating or discovering new international opportunities across organisational, industry or country domains.
Section B: Speculative propositions on the interplay between individual's experience and HR or AR reasoning in internationalization[2]		
	Heuristic Reasoning (HR) is likely:	Analogical Reasoning (AR) is likely:

International mode/ location considerations:	• to predominate where: the individual has little industry/international experience to draw on, has broad but superficial experience, or is routinely familiar with making decisions of a particular type on e.g. entry modes, in a particular industry, or into a particular country.	• to predominate where: the individual has significant depth and breadth of industry/international experience, or previous intense involvement in complex problem solving, or international decision-making.
	• to predominate where the individual's recent country involvement was intensive; or where prior experience was superficial, but very recent or of significant personal salience	• to predominate where irrespective of prior international experience the individual has direct experience of solving complex problems through systematic comparative analysis, or is trained to do so.
	• to be inefficient where s/he is ignorant of the intrinsic novelty/complexity of the focal internationalization problem, or where reflection on previously made decisions/choices was inadequate.	• to be efficient where s/he is aware of the novelty or complexity of the focal problem, e.g. the details of complex alliances with international partners. Where s/he has both broad and deep experience gained over many international sojourns, and where there was reflection on previous reasoning and its outcomes
	• to be efficient where the individual's prior experience involved living, working or education in a particular country, therefore deep and based on context familiarity. Also where familiarity lies with the type of internationalization decisions that she routinely makes.	• to be inefficient where the individual's familiarity with the new international situation is based on routine, non-complex considerations such as a decision to extend the firm's existing exporting activity to another but known country.
	• in unfamiliar situations where it is the normative reasoning approach for the individual concerned.	• in familiar situations where it is the normative reasoning approach for the individual concerned.

Opportunity evaluation:	• to be efficient in screening out many international opportunities, e.g. from standard but unsolicited orders or from a superficially constructed set of location choices, based on prior experience and pre-established heuristic decision-rules.	• to be inefficient in screening out many international opportunities due to the great number of possible analogies, but effective in the discovery of new international opportunities or the evaluation and exploitation of a shortlisted few.
Section C: Speculative propositions on the effects and limitations of HR and AR with regard to internationalization dynamics		
	Heuristic Reasoning (HR) is likely:	Analogical Reasoning (AR) is likely:
Sequencing and complexity of international entries	• to be effective in entry, decisions subsequent to first entry or in late first entries; in entries where the mode closely reflects the operation mode in the domestic market; and for simple entry modes e.g. export modes. • to be effective for decision choices between known alternatives e.g. enter/do-not-enter decisions, or mode/location choices made on previously established decision rules (heuristics); or decisions of a one-off or incremental nature.	• to be effective in first entry considerations; novel and complex considerations involving for example: the development of international networks and markets for a new technology, through structural alignment in complex arrangements requiring many levels or stages of consideration; • to be effective where synergistic effects or wide organisational impact is anticipated, such as in mode-switching, establishing international partnerships and investments involving the coordination of many resources and activities across multiple borders.
	Heuristic Reasoning (HR)effects and limitations	Analogical Reasoning (AR) Effects and Limitations
Temporal and SpatialPatterns of Internationalization	• New entries realised through HR could be either very rapid in succession, or more gradual. • Due to biases, internationalization patterns may appear stochastic and may include failed entries and rapid withdrawals, as well as missed opportunities. • Where HR is effective the internationalization pattern is likely to be traditional, linear and path dependent exhibiting either steady or rapid growth	• New entries realised through AR could be fast, slow or simultaneous in succession. • Due to constraints in the individual's ability to identify similarity, combine concepts and focus the purpose for the reasoning, AR may not be applied, or may be used ineffectively. • Where AR is effective the internationalization pattern is likely to be dynamic and flexible and show diversification with balanced growth due to AR's systematic application

	and based on established heuristic decision-rules.	and reflection. Capabilities for analogical reasoning by broadly and deeply internationally experienced entrepreneurs are likely to underpin the internationalization patterns of INVs.
1. Throughout we assume that HR and AR may substitute for or alternatively operate alongside objective reasoning, depending on percipient: uncertainty, information availability, and immediacy. We note also that HR and AR may be used in conjunction with each other. 2. For both HR and AR, the individual's current involvement in the on-going, real-time experience as the venture unfolds and internationalises primes the memory to search for experiences relevant to the focal problem.		