

## **Preliminary Threshold Standards for Entrepreneurial Cognition Research**

In the Winter 2004 Special Issue of *Entrepreneurship Theory & Practice*, a preliminary set of threshold standards for entrepreneurial cognition research have been published. At the 2002 Victoria Conference on Information Processing and Entrepreneurial Cognition, it was recognized in our discussion sessions that for entrepreneurial cognition research to advance, a clear delineation of both quantitative and qualitative methods was necessary. We are fortunate to have in this Special Issue two articles which address, respectively, each of these topics: the article by Baron and Ward, which focuses on quantitative methods, and the article by Hindle, which addresses qualitative methods.

### *Quantitative Research*

Baron and Ward introduce a broad array of quantitative research tools available in the cognitive science toolbox, which may significantly advance our understanding of entrepreneurial cognition. In providing an overview of recent entrepreneurial cognition research that outlines the research questions examined and methods employed, Baron and Ward conclude that while entrepreneurial cognition researchers have investigated a broad range of topics and issues, and have generally found that cognitive factors play an important role in key aspects of the entrepreneurial process, there remain interesting issues not addressed that would be informed by methods developed by cognitive scientists that are not yet deployed in entrepreneurship research. Paraphrased, these issues include: (1) Do entrepreneurs prefer heuristic to systematic thinking?; (2) Do entrepreneurs possess different knowledge structures than others and do they apply them more effectively?; (3) Do entrepreneurs have greater capacity to focus their attention on pertinent information?; (4) Do entrepreneurs reason or make decisions differently than other persons?; and (5) Are entrepreneurs better than others at recognizing complex patterns and is that related to opportunity identification?

To begin to address these issues and broaden the range of issues that could be addressed in entrepreneurship research, Baron and Ward advocate the inclusion of new methods by cognitive entrepreneurial researchers that have been developed by cognitive scientists. Reaction time and the number and pattern of correct responses and errors are two types of measures that provide quantifiable means for investigating cognitive processes that cannot be directly observed. The nature and structure of knowledge possessed by entrepreneurs could be identified by identification tasks, such as naming or lexical decision, listing procedures, and rating procedures that are the “tools of the trade” for cognitive scientists. Priming tasks, where two stimuli are presented in succession, can be used to understand and “map” how various kinds of information are related or interconnected in the cognitive systems of entrepreneurs. Memory measures such as free recall, the Stroop task, and recognition tasks can be used to understand working memory and the ability of entrepreneurs to focus on important information and to ignore extraneous information, and assess declarative knowledge (factual information), procedural knowledge (how to do things), and prospective memory (remembering to do the things one intends to do in the future). Decision-making and choice tasks can be used to understand decision making strategies and positive and negative use of heuristics. Creative activities and creative generation tasks can be used to understand the generative thinking of entrepreneurs. Finally, Baron and Ward discuss how behavioral and neuropsychological measures such as eye

movements, electroencephalography, or functional magnetic resonance could be used to draw conclusions about the nature of underlying cognitive representations and mental processes.

### *Qualitative Research*

In his article “Choosing qualitative methods for entrepreneurial cognition research: a canonical development approach,” Hindle introduces and prescribes a canonical development approach for how entrepreneurship researchers can determine the domain of entrepreneurship research and the set of research questions, methods, techniques of data collection, and techniques of data analysis within. At the heart of his treatise is the thesis that the fields of entrepreneurship research in general, and entrepreneurial cognition in particular, will be severely compromised unless researchers, reviewers, and editors adopt a broader acceptance of qualitative methods and methodological variety. He argues that because the field of entrepreneurial cognition is most concerned with the vulnerabilities of human rationality, it is appropriate that this sub-domain lead the way in determining a structured, manageable approach to the problem of which, if any, of the sets of techniques, loosely labeled ‘qualitative methods,’ are appropriate to advancement of the field.

The canonical development approach, similar to the building of canon-law, uses precedents established in practice and debate as a base from which innovation in new issues, new methods, and new insights can be both be grounded in prior learning and perspectives, and be the basis by which such learning and perspective are shaped or change as a field progresses. Fundamental to this approach, Hindle argues for open-mindedness and “an attempt to understand and value multiple perspectives without resiling from the ultimate need to make a judgment.” By overcoming our particular biases in perspective, being tolerant and understanding of other perspectives, and being clear on where we position our work in the “philosophical quartet” of axiological, epistemological, logical, and ontological issues, we can begin to engage in principled debate of which research methods, as strategic devices, are appropriate for which research issues and questions. To guide the development of such a canon, Hindle identifies Forbes (1999) review of 34 entrepreneurial cognition articles as a starting point and integrated this with a framework for choosing qualitative research methods that specifies three interrelated domains: a philosophical context domain, a research question domain, and a methodological content domain, and outlines basic choices within. The philosophical context domain and the methodological content domain are inclusive – common to scientific inquiry. It is the research question domain that is unique to the field of interest. Hindle does not advocate any particular approach or any particular set of methods, but does provide illustrative application of the use of the canonical development approach to the specification and justification of methodologies appropriate for specific research questions. By offering this canonical approach, Hindle raises the bar of debate, and effects grounds for a more inclusive approach to entrepreneurship and entrepreneurial cognition research.