



Entrepreneurial expertise and the use of control



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ABSTRACT

Significant evidence has accumulated describing the importance of expertise. As this knowledge is extended, it is critical to understand when expertise matters and how. We unpack expertise in entrepreneurial decision making by presenting 412 founder/entrepreneur subjects with a unique tool involving four scenarios so we can measure an element of theoretical relevance to expertise in the entrepreneurial domain, efficacy at applying control and prediction strategies to situations which vary in environmental predictability and controllability. Results show that entrepreneurial expertise yields significant decision-making improvements in the situational use of control strategies – those strategies conceptually associated with uncertain new ventures, products and markets.

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1. Introduction

A role for entrepreneurial expertise has begun emerging through scholarly work integrating literature from cognitive psychology (Ericsson, 2006a; Glaser, 1984) with that of entrepreneurship (Mitchell, 1994; Dew et al., 2009). In this research, we seek to advance the conversation beyond the bromide that 'expertise matters' into questions of what matters about expertise – specifically what decision making task(s) do entrepreneurs become better at through the accumulation of expertise? Drawing on effectuation, posited as one logic of entrepreneurial expertise (Sarasvathy, 2001; Gabrielsson and Politis, 2011), we investigate the use of control-based strategies (Wiltbank et al., 2009) as a function of expertise and characteristics of the environment.

2. Literature

2.1. The study of expertise in psychology

The investigation of expert heuristics using modern approaches began in earnest about 40 years ago, focusing on understanding the nature of chess masters. One of the earliest expert studies (de Groot, 1946, 1978), found that contrary to received wisdom, expert chess players identify the best moves in their initial perception of the game rather than through

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detailed analysis and thought. In their study of expert chess players, [Chase and Simon \(1973\)](#) further concluded that intelligence alone had no correlation with expertise in chess. More complex factors accounted for differences in performance such as how players store information, perceive problems and generate solutions ([Glaser, 1984](#)). How these factors connect with outcomes is now better known within the psychology literature ([Ericsson, 2006a](#)) where a body of research reports that, via experience and deliberate practice in a domain, experts develop higher level skills and knowledge which are a visible artifact of a change in underlying cognitive systems, a change that leads to superior performance in a domain ([Unger et al., 2009](#)).

2.2. *What experts are good at, and why*

A primary outcome reported in the expertise literature is that experts display quicker and more accurate problem solving in their domain owing to superior decision-making skills and knowledge ([Ericsson, 2006b](#)). Expert decision-making skills and knowledge may manifest in several different ways, sometimes as declarative (factual) knowledge, but often in the form of expert scripts (highly developed, sequentially ordered knowledge: [Mitchell et al. \(2000\)](#)), heuristics (short-cut rules of thumb used in decision making: [Dew et al. \(2009\)](#)) and pattern recognition capabilities ([Gobet and Simon, 1996](#)). Based on extensive research on chess experts, Gobet and Simon argue that pattern recognition is a generalizable capability at the root of expertise. Pattern recognition provides individuals with prototype frameworks that represent typical members of a category and serve as templates for comparing against perceived phenomena. This allows for rapid sense making and problem solving ([Klein, 2009](#)). As individuals accumulate expertise, their prototypes become better developed in terms of clarity, richness of content and sharper focus on key attributes ([Baron and Ensley, 2006](#)). [Klein \(2009\)](#) argues that experts look at a situation, recognize what to do, and typically make decisions based on their first judgment of the circumstances. For highly expert individuals, this can be very fast. Under “blitz” conditions (5 min games) chess experts have to rely heavily on recognition processes, yet they solve one third to half of all moves within 10 seconds ([Campitelli and Gobet, 2004](#)). This highlights that experts very quickly search for good alternatives based on their experience, typically testing them in a flash using mental simulation (rather than consciously deliberating over and simultaneously comparing several alternatives) ([Gobet and Simon, 1996](#)).

2.3. *The limits of expertise, and the reasons thereof*

Of course the scope of expertise to generate superior performance has limits. Researchers learned quickly that expertise is highly domain-specific ([Ericsson and Smith, 1991](#)) and that experience is a necessary but not sufficient condition for the accumulation of expertise. The repeatability of specialist tasks and the availability of unambiguous feedback are both crucial to the development of reliable expertise because these allow individuals to deliberately practice ([Ericsson et al., 1993](#)). Deliberate practice involves effortful, individualized, self-regulated activities with feedback aimed at improving performance. Work by [Tetlock \(2005\)](#) highlights the inapplicability of expertise to one important domain: prediction. Tetlock studied 284 expert forecasters of world political and economic trends between 1988 and 1992. His results showed expert predictions only slightly better than chance. Furthermore, he found that experts did not predict any better in their specialty than in domains unfamiliar to them. Worse still, they refused to update their beliefs when shown contrary evidence, indicating a lack of adaptation. Tetlock’s studies illustrate that expertise is difficult to develop when: (i) problems are unique and unrepeatable; (ii) past data aren’t necessarily relevant; (iii) probabilities change; (iv) the relative importance of variables changes; (v) new variables of relevance may appear (Black swans); (vi) other humans act strategically and creatively to thwart predictions; and (vii) feedback is imprecise. In short, the very nature of political and economic trends mitigate against the effectiveness of deliberate practice and learning to develop expertise in prediction in this domain.

2.4. *The specific content of entrepreneurial expertise: situational application of control*

The limits of expertise in the domain of prediction are highly germane to debates among scholars regarding the domain of entrepreneurial expertise. Some researchers have argued and presented data indicating that aspects of entrepreneurship can be mastered to an expert level ([Unger et al., 2009](#)) whereas others have made the opposite case that learning in the entrepreneurship domain is too difficult to generate expertise, and that instead entrepreneurship is largely a matter of innate talent or luck ([Frankish et al., 2012](#)). Effectuation research offers the insight that one aspect of entrepreneurial expertise lies precisely in recognizing the innate unpredictability of the environment and adapting one’s decision making heuristics to that situation ([Gustafsson, 2006](#); [Dew et al., 2009](#); [Read et al., 2009](#); [Wiltbank et al., 2009](#); [Chandler et al., 2010](#); [Brettel et al., 2011](#); [Mauer et al., 2011](#); [Fischer and Reuber, 2011](#)). [Wiltbank et al. \(2006\)](#) develop this insight into a framework that suggests analyzing situations along the dimensions of predictive and non-predictive control and [Wiltbank et al. \(2009\)](#) provide early evidence of the usefulness of this framework in private equity decision making. This framework provides a basis for examining differences between novice and expert approaches. [Wiltbank et al. \(2006\)](#) argue that the entrepreneurial (transformative) quadrant has been least explored in extant research compared with adaptation, planning and visionary approaches, yet it is precisely this space that characterizes new ventures ([McMullen and Shepherd, 2006](#):133). Since they are highly practiced in this domain, expert entrepreneurs should develop appropriate decision making heuristics in this space.

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