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## THE DEVELOPMENT OF ENTREPRENEURIAL COGNITION RESEARCH: AN EDITOR'S PERSPECTIVE

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### **Introduction**

Several questions seem to present themselves at this juncture in entrepreneurial cognition research: Is the presently developing stream of research in entrepreneurial cognition and information processing:

- A new paradigm?
- A shift in paradigm?
- The expansion of an existing paradigm? or
- The importation of someone else's paradigm to solve intractable research problems—so-called idiosyncratic milieus (MacMillan & Katz, 1992)?

The real question for me is: Is research in entrepreneurial cognition and information processing following the path toward a scientific revolution (Kuhn, 1970), or are we in the middle of another line-extension, dutifully developing increments to what is essentially “done”?

It is a pleasingly romantic notion to mentally clothe one's favorite work in the garments of the scientific revolutionary. But is it sound, or is it wise to do so? In these brief comments, I offer a perspective on these questions from the vantage point of an Editor of the ET&P Special Issue on Information Processing and Entrepreneurial Cognition.

### **Scientific Revolutions**

According to Thomas Kuhn, scientific revolutions necessitate “. . . a scholarly community's rejection of one time-honored scientific theory in favor of another incompatible with it (resulting from the failure to resolve) . . . a set of severe and prolonged anomalies that lead to . . . the creation of a new paradigm v. the continued articulation of an existing one” (Kuhn, 1970: 6, 33, 77). And, it is “competition between segments of the scientific community (that) is the only historical process that ever actually results in the rejection of one previously accepted theory or in the adoption of another” (Kuhn, 1970: 8).

So where do we now find ourselves? Are we ready to say—despite all protestations to the contrary—that we have in fact been in possession of a received theory of entrepreneurship for some time? Are we further ready to say that received entrepreneurship theory is now open to challenge due to the existence of a set of severe and prolonged anomalies that continue to resist explanation? If so we must be prepared to assert that there exists a basis for such a rejection—a new, but incompatible view of entrepreneurship that, if embraced, will withstand the legitimacy tests of new theory: to be able to resolve some of the present theoretical difficulties in entrepreneurship research: to simply relate previously unconnected things, predict phenomena which have not so far been observed, and be better testable (Popper, 1979: 46-48).

### **Received Theory in Competition with an Alternative View?**

For as long as I have been an observer, it has been good business NOT to have a theory of entrepreneurship. After all, within this seemingly egalitarian stance reside limitless sources of theoretical possibilities and proposals, empirical investigations, fundraising opportunities, and (dare we say it) occasions to publish, that—like any country without natural or defensible borders—has become the province of anyone with enough power to stake a claim to its territory. The field of entrepreneurship research, for example, serves (certainly nonexhaustively) as economics' black box (Baumol, 1968; Baumol, 1993), strategy's refuge from inertia-based arguments (Low & MacMillan, 1988), and as a quizzical but possibly pernicious manifestation within social science of humanity's closet preference for elitism—the notion of the “born” entrepreneur (Coulton & Udell, 1976; McClelland, 1968; Rotter, 1966). Received theory in entrepreneurship research appears to be: NOT to have a theory. And according to Kuhn, for there to be a serious challenge to this status quo, there must be a crisis, based upon unresolved anomalies. Is there one?

### **Severe and Prolonged Anomalies?**

Ten years ago, MacMillan and Katz suggested that due to data obscurity and infrequency, there remained at least eight unexplained phenomena in entrepreneurship research, . . . no satisfactory explanation for such things as: consistently entrepreneurial firms, habitual entrepreneurs, business angels, business failures, critical deals and hot IPO markets, creative solutions to obstacles, and the emergence of new industries (MacMillan & Katz, 1992: 2). Can we say now, ten years later, that explanations for these, and other like phenomena are adequate? Personally, I do not know of any of these phenomena that have been explained in the literature to my satisfaction. So—for the sake of argument—I think that it is possible to suggest that anomalies persist within entrepreneurship research. The critical question is: Are these anomalies severe? Or, in Kuhnian terms: Is there a crisis?

Well perhaps, by definition under the assumptions of “status quo,” there will never be a crisis. So maybe the question should really be: What about the socioeconomic status quo? Is it really acceptable to you, or to me? And, is the “normal science” (Kuhn, 1970) that we presently practice, and that is rooted in this status quo, acceptable in light of this

assessment? Should we, for example, assume away the public policy role of entrepreneurship research, and therefore justify the antiseptic study of entrepreneurship as akin to the geological study of rock formations? In my view—because of the interpenetrating nature of observer and phenomena—for us to do so would be to relegate ourselves to the role of fossils within the socioeconomic strata of our own data sets. If we *do* see a more contributory role to entrepreneurship research, we are then led to ask: Is the quantity and quality of entrepreneurship itself, that exists under the status quo, acceptable?

**Quantity.** Is there enough entrepreneurship in our economy? According to demographers, at any given time only five percent of people in our economy are engaged in entrepreneurship, and only 20 percent ever engage in entrepreneurship over the life of their careers (Evans & Leighton, 1986; Shane, 1996; Steinmetz & Wright, 1989). That's the status quo. Are we to conclude, therefore, that there is not room for more entrepreneurs, or that due to the inherent nature of entrepreneurship, there simply cannot or should not be a greater proportion of entrepreneurs within an economy? Do we have too few? Or do we have too many? And, does our not having a satisfactory answer to this question constitute a crisis, or merely a confirmation of the status quo right here within our first world economy?

Then what about the people living in second, third, and fourth tier countries in an increasingly globalized economy? Is there enough entrepreneurship there? Below, you will see TABLE 1, which summarizes certain worldwide GDP/ GNP data. Within this table you will observe that, for example, 52.7 percent of the world's purchasing power is held by 14.4 percent of its population; or that the average per capita GDP of the 50 countries in the first quartile is approximately 70 times the mean per capita GDP of the 50 countries in the fourth quartile. Do we have a theory of entrepreneurship that explains both the greater quantity of effective entrepreneurship that occurs within first tier economies, and moreover suggests what might be done to increase it in the second, third, and fourth tiers? Is our answer to this question grounds for a scientific revolution?

**Quality.** And then there's the failure rate. I recently looked on Brandow Company Inc.'s website "Bizminer.com," which has posted there, the US startup business risk index for the combined three years 1998 – 2000. According to these data, across 73 industries, 262,293 firms out of 565,812 new ventures failed. (OK so there are refinements in the meaning of "failed": some may have reorganized, others been acquired, and still others terminated for quality of life reasons, etc. etc.). But the point remains that according to this metric the ongoing operations of 46.4 percent of new ventures were disrupted, many involving bankruptcy, many resulting in the repudiation of obligations to suppliers and creditors, and many (perhaps all 262,293 cases) causing some or a great deal of just plain misery. In comparison, if there were to be a 46 percent probability that your new car purchase would be defective, would that be acceptable? Current results of the present status quo suggest a need to expand the quality movement into the new venture domain, right here in our first world economy, and perhaps globally too.

**Summary.** So on the basis of these data I have a few questions:

- Ceteris paribus, are the disparities I've just noted likely to persist?
- What I mean is: Are these disparities really anomalies that new theory might explain, but that "received" theory merely accepts as the status quo?
- Do you consider them to be severe?
- Do we have something within our research domain to contribute to new theory?
- Given your take on the status quo, do think that the incremental extensions of normal science will suffice?
- In short, is there a crisis of sufficient proportion to justify a paradigm shift?
- Is there a segment of the scientific community with a sufficiently well articulated set of alternative viewpoints that is prepared to enter their ideas into the competition for paradigmatic status within entrepreneurship research?
- Does entrepreneurial cognition research have the potential to fill one of these slots?

### **A New Viewpoint?**

So from the vantage point of an Editor of the ET&P Special Issue on Information Processing and Entrepreneurial Cognition I offer a perspective on these questions. We received 26 submissions from 5 countries. Of these, 12 authors or author teams were invited to revise and resubmit, but due to circumstances, only 10 chose to do so. Of these projects, six will be presented here at the conference. Some are theoretical; others are empirical (quantitative and qualitative). Together, they, and the other papers that will appear in the ET&P special issues on this topic provide markers along a developmental path that suggests a new viewpoint for entrepreneurship research.

For example, there will be a model presented that artfully summarizes the extant ENT cognition literature, and skillfully integrates it into propositions that can, in my view, form a foundation for the next phase of entrepreneurial cognition research. Other papers will further dimensionalize our empirical domain, exploring for example in survey research, the impact of thinking errors on opportunity recognition and self-efficacy and regretful thinking, or through experimentation, the role of entrepreneurial expectancy, including gender differences. Thanks to Saras' presentation, we now have a better understanding of entrepreneurship cognition research at the individual level of analysis, from someone who studied with Herbert Simon, one of the seminal "thinkers" about entrepreneurial "thinking." Further, we shall have the opportunity to consider theory papers that delve deeply into opportunity recognition and counterfactual thinking, and self-efficacy and entrepreneurial intentions at the level of the entrepreneurial team.

As editor, I have strongly encouraged many of the SI authors to help to move the ENT cognition literature forward. I have been looking to call forth from my highly talented colleagues a vision of what is possible within the various “rivulets” of the cognition “stream.” At present, in my opinion, research in entrepreneurial cognition has the potential to communicate a broader vision, but fails as yet to do so. I have steadfastly encouraged the SI authors to construct big picture essays as their discussion sections, and within to set forth the broader implications of their work by addressing questions such as: What do we learn from this study? What relationships are likely? How does this extend or expand theory? What hints do we receive about how entrepreneurs think? And, what are the implications for the businesses that they create and operate? In the forthcoming sessions, we shall hear some of what these authors have done with this challenge. Now, with this summary and introduction, I further expand the scope of this call. I ask you to consider (to coin a term) “thinking big.” It would be imperialistic to suggest that ALL roads lead to ENT cognition research. But it would be irresponsible not to recognize that the *time* for new and better explanations that ENT cognition research can provide *is now* upon us.

## **Conclusion**

I believe that we in entrepreneurial cognition research do have the opportunity to articulate a new viewpoint. My experience as an editor of the SI suggests that entrepreneurial cognition research may soon be ready to offer a serious challenge to our received NON-theory, e.g. just this year our own field studies led us to wonder whether the lack of entrepreneurship may result from the lack of specific entrepreneurial cognitions (Mitchell & Morse, 2002). But from my perspective, before we are fully ready, we must become much more familiar with these new arguments, with the constructs that populate and the methods we use to test them; and we must become more refined ourselves, in our capability to assess these new arguments within the peer review process: whether as normal or as revolutionary science.

I do believe that presently we have unexplained anomalies that justify this inquiry: that they are important, and that they are severe. So if a scientific revolution is in the wings: with whom or with what are we to compete? I suggest that in the broadest sense, this competition between segments of the scientific community should consist of the serious reevaluation of the frameworks that fail to address severe, important anomalies such as the ones I have identified in this presentation, wherever they may be found.

While I respect the realities of the status quo in their sheer momentum, I cannot in good conscience suggest to you as did Alexander Duell, Director of the US Patent office in 1896 reportedly stated to Congress that: “everything that can be invented has been invented.” There is a great need for ENT cognition research, and great promise for its fruits. Thank you.

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TABLE 1:  
1998 (US\$) World Economic Statistics<sup>1, A</sup>  
Ranked in Quartiles by Country

Description	Mean per Capita GDP	Population (millions)	Pop. %	GNP (est.) (billions)	GNP % (est.)	Purchasing Power Parity GNP (est.) (billions)	PPP <sup>B</sup> % (est.)
Average/Totals 1st Quartile	\$19,737	848.2	14.4	\$20,890	73.0	\$19,122	52.7
Average/Totals 2nd Quartile	3,933	1,002.1	17.1	5,221	18.2	7,953	21.9
Average/Totals 3rd Quartile	1,103	2,136.4	36.4	1,771	6.2	6,216	17.1
Average/Totals 4th Quartile	279	1,887.1	32.1	726	2.5	3,024	8.3
Average/Totals	\$6,263	5,873.8	100.0	\$28,607	100.0	\$36,315	100.0

<sup>1</sup> Sources:

United Nations Statistics Division <http://www.srch0.un.org> 9/21/00

World Bank: World Development Indicators 2000 [www.worldbank.org/data/wdi2000/worldview.htm](http://www.worldbank.org/data/wdi2000/worldview.htm) 4/16/01

Encyclopedias Britannica and World Book

(Note A: Some estimates computed where data were scarce.)

(Note B: Purchasing Power Parity (PPP) GNP is gross national product converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GNP as a U.S. dollar has in the United States.)