ENTREPRENEURIAL COGNITION RESEARCH AND ECONOMIC DEVELOPMENT

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ABSTRACT

In the past, the separation of the production and the distribution of wealth has been accepted as the natural state of affairs. In the information age, this separation need no longer be the case, because—due to the communications revolution and advances in entrepreneurial cognition research—production and distribution are, or can be, much more closely connected, as every producer acquires and utilizes a fundamental understanding of key entrepreneurial thinking patterns. Entrepreneurial cognition research and economic development can be ever-more-closely linked, as researchers examine under-, over-, and effectively-governed transactions as seen through the entrepreneurial thinking lens.

EXECUTIVE SUMMARY

This paper explores and suggests an entrepreneurial-cognition-based research stream dedicated to raising, researching, and hopefully resolving issues in the entrepreneurial cognition – economic development link. Below, I briefly summarize this essay under these headings.

Raising the Issues

As shown in Tables 1 and 2, the "economic tiered" global economy is out of balance.

TABLE 1: 1998 (US$) World Economic Statistics[A] Ranked in Quartiles by Country (Note 1)

Description	Mean per Capita GDP	Population (millions)	Pop. %	GNP (est.) (billions)	GNP % (est.)	Purchasing Power Parity GNP (est.) (billions)	PPP[B] % (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

TABLE 2
1998 Economic Statistics (US$) by Economy
Ranked in Quartiles based on Total Number of Countries

	ECONOMY	$GDP	POP	GNP	PPP GNP
	First Quartile				
1	Luxembourg	43,475	0.4	16.4	
2	Bermuda	38,652	0.1	2.8	
3	Leichtenstein	35,910	0.0	1.0	
4	Switzerland	35,910	7.0	284.1	191.0
5	Norway	33,203	4.0	152.0	116.0
6	Denmark	33,085	5.0	175.2	126.0
7	United States of America	31,059	270.0	7903.0	7904.0
8	Japan	29,956	126.0	4089.1	2982.0
9	Iceland	29,946	0.3	8.1	
10	Finland	27,934	5.0	125.1	106.0
11	Sweden	26,790	9.0	226.5	176.0
12	Germany	26,183	82.0	2179.8	1807.0
13	Ireland	26,098	4.0	69.3	67.0
14	Austria	25,911	8.0	216.7	187.0
15	Netherlands	24,956	16.0	389.1	350.0
16	Belgium	24,692	10.0	259.0	241.0
17	Hong Kong SAR	24,581	7.0	158.2	139.0
18	Singapore	24,577	3.0	95.5	80.0
19	Monaco	24,481	0.0	0.7	
20	United Kingdom	23,934	59.0	1264.3	1200.0
21	Italy	20,659	58.0	1157.0	1173.0
22	San Marino	20,407	0.0	0.5	
23	United Arab Emirates	19,506	3.0	4.7	51.0
24	Canada	19,439	30.0	580.9	691.0
25	Qatar	18,065	0.6	10.5	
26	Israel	17,041	6.0	96.5	101.0
27	French Polynesia	15,900	0.2	3.2	
28	New Caledonia	14,647	0.2	3.0	
29	Puerto Rico	14,488	4.0	58.0	
30	New Zealand	13,985	4.0	55.4	61.0
31	Spain	13,972	39.0	555.2	628.0
32	Kuwait	13,946	2.0	27.9	
33	Netherlands Antilles	13,827	0.2	2.7	
34	Brunei Darussalam	13,719	0.3	4.3	
35	Andorra	13,166	0.1	0.9	
36	Martinique	11,866	0.4	4.3	
37	Cyprus	11,631	0.8	8.8	
38	Greece	11,463	11.0	123.4	147.0
39	Bahamas	11,395	0.3	3.3	
40	Portugal	11,080	10.0	106.4	145.0
41	Guadeloupe	10,591	0.3	3.8	
42	Reunion	10,513	0.7	7.3	
43	Iraq	10,195	22.0	224.3	
44	Slovenia	9,798	2.0	19.4	29.0
45	Bahrain	9,684	0.6	6.1	
46	Antigua and Barbuda	9,370	0.0	0.3	
47	Malta	9,110	0.4	3.3	
48	French Guiana	9,094	0.1	0.7	
49	Barbados	8,717	0.3	2.3	
50	Argentina	8,257	36.0	200.3	424.0
	Second Quartile				
51	Saint Kitts and Nevis	7,440	0.0	0.3	
52	Seychelles	7,378	0.1	0.6	
53	Saudia Arabia	7,259	21.0	143.4	218.0
54	Korea (Republic of)	6,956	46.0	398.8	616.0
55	Palau	6,448	0.0	0.1	
56	Uruguay	6,333	3.0	20.0	28.0
57	Oman	5,946	2.0	11.9	
58	Libyan Arab Jamahiriya	5,930	5.0	29.7	
59	Czech Republic	5,486	10.0	53.0	126.0
60	Lebanon	5,326	4.0	15.0	17.0
61	Chile	4,921	15.0	73.9	126.0
62	Gabon	4,787	1.0	4.9	7.0
63	Croatia	4,758	5.0	20.8	30.0
64	Syrian Arab Republic	4,757	15.0	15.5	41.0
65	Brazil	4,673	166.0	767.6	1070.0
66	Hungary	4,644	10.0	45.7	99.0
67	Trinidad and Tobago	4,622	1.0	5.8	9.0
68	Cook Islands	4,521	0.0	0.1	
69	Mexico	4,324	96.0	368.1	714.0
70	Venezuela	4,107	23.0	82.1	133.0
71	Poland	4,096	39.0	151.3	292.0
72	Saint Lucia	4,081	0.2	0.6	
73	Slovakia	3,787	5.0	19.9	52.0
74	Mauritius	3,727	1.0	4.3	10.0
75	Estonia	3,682	1.0	4.9	11.0
76	Dominica	3,630	0.1	0.3	
77	South Africa	3,404	41.0	136.9	343.0
78	Malaysia	3,317	22.0	81.3	171.0
79	Panama	3,287	3.0	8.3	14.0
80	Turkey	3,071	63.0	200.5	419.0
81	Botswana	3,069	2.0	4.8	9.0
82	Grenada	2,997	0.1	0.3	
83	Lithuania	2,895	4.0	9.4	23.0
84	Iran	2,850	62.0	102.2	317.0
85	Saint Vincent/Grenadines	2,815	0.1	0.3	
86	Costa Rica	2,793	4.0	9.8	20.0
87	Belize	2,741	0.2	0.6	
88	France	2,739	59.0	1465.4	1248.0
89	Jamaica	2,707	3.0	4.5	9.0
90	Latvia	2,638	2.0	5.9	14.0
91	Peru	2,521	25.0	60.5	104.0
92	Columbia	2,515	41.0	100.7	239.0
93	Suriname	2,454	0.4	1.0	
94	Cuba	2,194	11.0	24.1	
95	Tunisia	2,138	9.0	19.2	48.0
96	Australia	2,125	19.0	387.0	409.0
97	Fiji	1,982	0.9	1.7	
98	El Salvador	1,941	6.0	11.2	24.0
99	Russian Federation	1,936	147.0	331.8	907.0
100	Dominican Republic	1,925	8.0	14.6	36.0
	Third Quartile				
101	Thailand	1,890	61.0	131.9	338.0
102	Micronesia, Fed. States of	1,841	0.1	0.2	
103	Namibia	1,834	2.0	3.2	9.0
104	Guatemala	1,760	11.0	17.8	38.0
105	The FYR of Macedonia	1,753	2.0	2.6	8.0
106	Romania	1,698	23.0	30.6	125.0
107	Algeria	1,689	30.0	46.4	137.0
108	Paraguay	1,629	5.0	9.2	23.0
109	Ecuador	1,620	12.0	18.4	37.0
110	Tonga	1,614	0.1	0.1	
111	Marshall Islands	1,509	0.1	0.1	
112	Bulgaria	1,470	8.0	10.1	39.0
113	Liberia	1,458	3.4	5.0	
114	West Bank and Gaza	1,433	3.0	4.3	
115	Kazakhstan	1,368	16.0	20.9	67.0
116	Belarus	1,360	10.0	22.3	65.0
117	Maldives	1,350	0.3	0.4	
118	Morocco	1,302	28.0	34.4	89.0
119	Jordan	1,280	5.0	5.3	12.0
120	Swaziland	1,279	1.0	1..235	
121	Vanuatu	1,276	0.2	0.2	
122	Samoa	1,255	0.2	0.2	
123	Egypt	1,211	61.0	79.2	193.0
124	Nigeria	1,153	121.0	36.4	89.0
125	Yugoslavia	1,124	11.0	12.4	
126	Cape Verde	1,085	0.4	0.4	
127	Georgia	974	5.0	5.3	19.0
128	Albania	972	3.0	2.7	10.0
129	Philippines	894	75.0	78.9	280.0
130	Cote d'Ivoire	889	14.0	10.2	21.0
131	Honduras	870	6.0	4.6	14.0
132	Sri Lanka	848	19.0	15.2	55.0
133	Guyana	846	0.9	0.7	
134	Ukraine	834	50.0	49.2	157.0
135	Djibouti	800	0.5	0.4	
136	China	777	1239.0	923.6	3779.0
137	Papua New Guinea	756	5.0	4.1	10.0
138	Solomon Islands	712	0.3	0.2	
139	Cameroon	702	14.0	8.7	20.0
140	Congo (Rep.)	691	3.0	1.9	2.0
141	Kiribati	594	0.1	0.1	
142	Turkmenisatn	582	5.0	2.9	
143	Zimbabwe	548	12.0	7.2	29.0
144	Azerbaijan	537	8.0	3.8	17.0
145	Armenia	533	4.0	1.7	8.0
146	Angola	528	12.0	4.6	12.0
147	Afganistan	523	26.0	13.6	
148	Senegal	518	9.0	4.7	12.0
149	Guinea	515	7.0	3.8	12.0
150	Indonesia	478	204.0	130.6	490.0
	Fourth Quartile				
151	Uzbekistan	470	24.0	22.9	49.0
152	Pakistan	458	132.0	61.5	217.0
153	Haiti	443	8.0	3.2	11.0
154	Nicaragua	442	5.0	1.8	9.0
155	Korea (Dem. P. Rep.)	430	23.0	9.9	
156	Lesotho	425	2.0	1.2	5.0
157	India	422	980.0	427.4	2018.0
158	Zambia	413	10.0	3.2	7.0
159	Benin	399	6.0	2.3	5.0
160	Mongolia	384	3.0	1.0	4.0
161	Equatorial Guinea	377	0.4	0.2	
162	Republic of Moldova	374	4.0	1.7	9.0
163	Kenya	373	29.0	10.2	28.0
164	Kyrgystan	366	5.0	1.8	11.0
165	Gambia	355	1.0	0.4	2.0
166	Yemen	354	17.0	4.6	11.0
167	Uganda	347	21.0	6.6	22.0
168	Ghana	346	18.0	7.3	32.0
169	Togo	344	4.0	1.5	6.0
170	Viet Nam	336	77.0	26.5	129.0
171	Mauritania	328	3.0	1.0	4.0
172	Comoros	305	0.5	0.2	
173	Sudan	305	28.0	8.2	35.0
174	Bangladesh	299	126.0	44.2	177.0
175	Central African Republic	296	3.0	1.1	4.0
176	Myanmar	282	44.0	12.4	
177	Cambodia	255	11.0	2.9	14.0
178	Mali	254	11.0	2.6	7.0
179	Lao People's Dem.Rep.	250	5.0	1.6	8.0
180	Rwanda	225	8.0	1.9	
181	Burkina Faso	221	11.0	2.6	9.0
182	Tajikistan	219	6.0	2.3	6.0
183	United Rep. of Tanzania	213	32.0	7.2	16.0
184	Eritrea	210	4.0	0.8	4.0
185	Sao Tome and Principe	210	0.1	0.0	
186	Madagascar	208	15.0	3.7	11.0
187	Bhutan	199	0.7	0.2	
188	Nepal	197	23.0	4.9	27.0
189	Bolivia	177	8.0	8.0	18.0
190	Somalia	177	7.2	1.3	
191	Bosnia-Herzegovina	161	4.0	0.6	
192	Niger	159	10.0	2.0	7.0
193	Malawi	156	11.0	2.2	6.0
194	Sierra Leone	154	5.0	0.7	2.0
195	Chad	150	7.0	1.7	6.0
196	Ethiopia	107	61.0	6.2	35.0
197	Burundi	103	7.0	0.9	4.0
198	Guinea-Bissau	100	1.0	0.2	1.0
199	Dem. Rep. Of the Congo	98	48.0	5.4	35.0
200	Mozambique	92	17.0	3.5	13.0

Economies in the first quartile, representing 1/7 of the world's population (14.4 %), produced over 50 percent of its purchasing power (52.7%), while economies in the third and fourth quartiles, with over 2/3 of the world's population (68.5%), produced only 25 percent of world purchasing power. Naturally this has dramatic implications for society.

At the society level, economic results are most clearly manifest in standard of living outcomes. Although performance at the society level may include factors that are not necessarily all economic in nature (e.g. the quality of art, or satisfaction from religious observance, etc.); it can certainly be argued that the combined economic performance of a society is a necessary and fundamental pillar that supports a given standard of living. (Thus, for example, in the first tier, only 7 of every 1000 children die before age 5; but in low-income economies more than 90 such children die (WorldBank, 2000)—an infant/child mortality rate that is a multiple of 12 times higher. This circumstance alone drastically lowers an important element in the standard of living for 83 poor families: affecting the quality of life for 300 to 500 people in every 1000, depending upon family size.)

Forced wealth redistribution approaches have not worked; and foreign "aid" programs show mixed results. There exists a real and present need to advance a new vision in economic development powered by entrepreneurship—specifically by entrepreneurial thinking. When the late Mancur Olson's made the statement: ". . . the best thing a society can do to increase its prosperity is to wise up," (1996), he spoke directly to the question: Why do some people, or groups of people, achieve higher levels of economic development than others? Olson's statement also echoes psychologist William James (1890) suggestion that (paraphrased) "we become what we think about." According to these scholarly authorities, "wising up" to increase prosperity is about better thinking that creates and supports a global entrepreneurial thinking revolution.

Entrepreneurial cognition research explores the relationship between the attainment of economic results and human thought—specifically how entrepreneurial cognition relates to new value creation. And it appears that entrepreneurial cognition research has progressed to the point that the link between entrepreneurial thinking and economic development can be systematically explored (Mitchell, et al., 2002, 2004, 2007). In this article I propose research that directly affects the issues of the economic development imbalance. I argue that entrepreneurial cognitions create the necessary information for people to better utilize the dynamics of economic transacting in the value creation process, I explore the possibilities to better utilize entrepreneurial thinking to increase prosperity, and I call for the necessary focused research for the future.

Researching the Entrepreneurial Cognition – Economic Development Link

In Figure 1, I denote one version of the thinking – doing link between entrepreneurial cognition and economic development.

FIGURE 1
Proposed Linkages

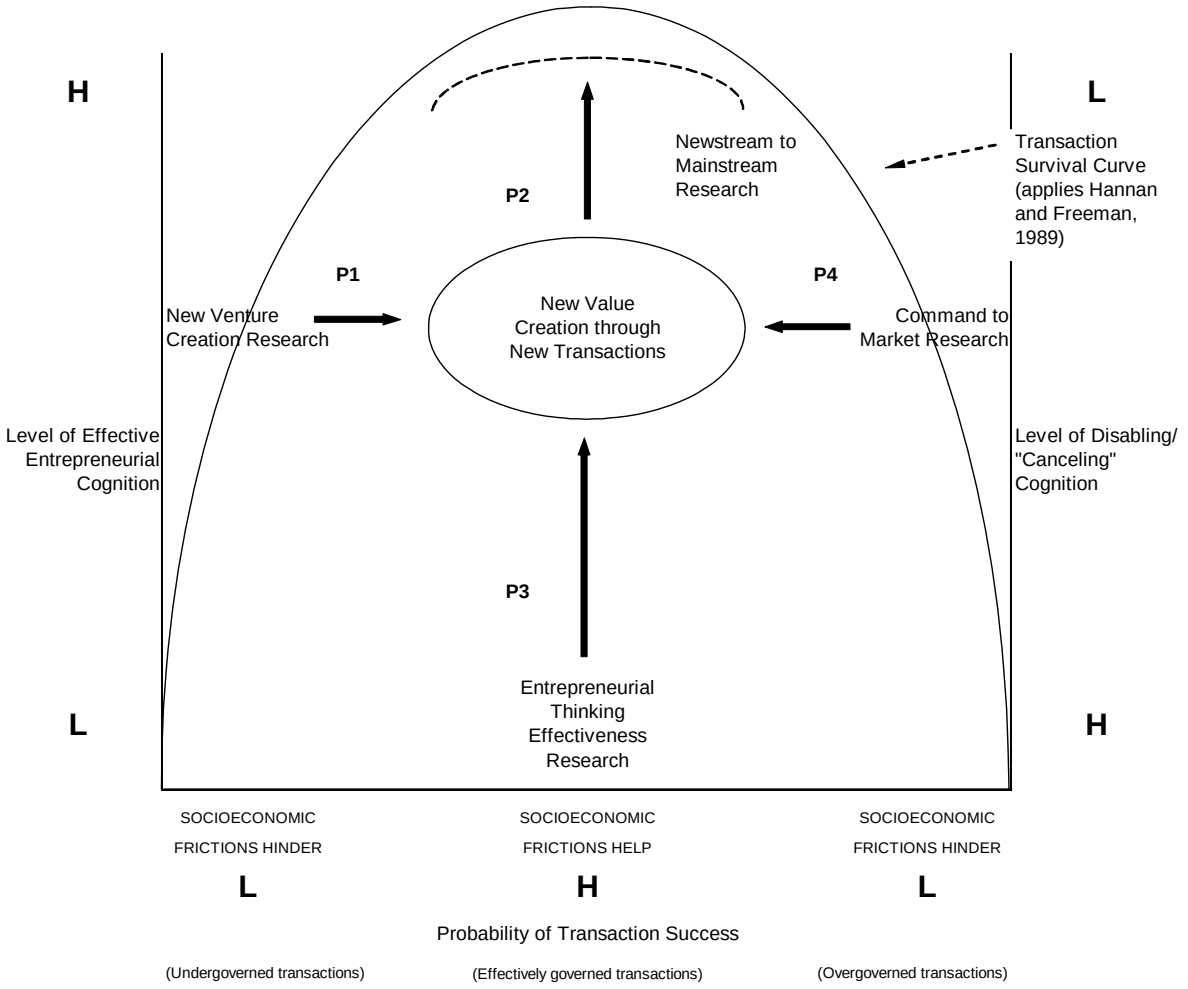
Δ Entrepreneurial Cognitions → Δ Attributes (BR, O, S) → Δ Social Frictions (TCs) → Δ EcDev (Outcomes)

The appealing premise that is the basis for this thinking – outcomes linkage suggests that at the transaction level of analysis (like the domino effect) a series of changes beginning with changing entrepreneurial thinking (cognitions), which then changes the transaction attributes (bounded

rationality, opportunism and specificity), which in turn changes social frictions (transaction costs), thereby changing economic development (outcomes) (e.g. Mitchell, 2001; Mitchell, et al., 2003).

In Figure 2, I illustrate the systematic manner in which four entrepreneurial-cognition-based research literatures can increase our understanding of thinking – outcomes-based process of new value creation.

FIGURE 2
Some Suggested Relationships for
Future Research and Outreach Attention



Four general research propositions flow from this analysis according to the following logic. Figure 2 is derived from the notion that new value creation can be seen to be the increase of new transactions, or of existing transaction streams (e.g., Mitchell, 2003) through the entrepreneurial thinking-driven change process illustrated in Figure 1. In the figure, I attempt to illustrate the variety of research opportunities that are related to level of effective entrepreneurial cognitions; and also in areas where canceling (disabling/ dysfunctional) economic cognitions (e.g., Gurnell, 2000) are influential. Interestingly, the combination of these two comparisons looks remarkably

like the mortality curve identified by population ecology scholars (Hannan & Freeman, 1989) for firms within an industry-level population. Depending upon the level of helpful v. hindering socioeconomic friction, the zones of potential transaction occurrence/ survival are situated as a function of expected levels of entrepreneurial cognitions and canceling cognitions.

Accordingly, the propositions that follow are cast in this frame, by which I mean that the "constructs" in the proposed relationships are four unique "research streams," and the outcome construct is new "value creation through new transactions." Four types of research initiatives are suggested in three groupings, with corresponding propositions.

1. Under-governed transactions. Under-governed transactions are those transactions that have insufficient entrepreneurial cognitions (knowledge base or problem solving processes (Charness, Krampe, and Mayer, 1996)) available for guidance, which as a result fail due to slippage (Mitchell, 2003). New venture creation initiatives are particularly prone to this deficiency. Accordingly I propose,

   Proposition 1: *The level of effective entrepreneurial cognition is positively associated with the reduction of unproductive socioeconomic frictions, and with an increase in the level of successful new-venture based transactions.*

2 & 3. Effectively-governed transactions. There appear to be at least two types of effectively-governed transactions: (a) those which are already in existence, where expansion of mainstream into newstream activities (Kanter, et al, 1990) consists of the effective bridging from old to new, and (b) those where transactions are already in existence, but the level of performance of these transactions (Rumelt, 1987) can be improved. Both of these initiatives are characterized by glide and traction (Mitchell, 2003), which, while effective, remain susceptible to qualitative improvements. Accordingly I propose,

   Proposition 2: *The level of effective entrepreneurial cognition is positively associated with the use of productive socioeconomic frictions, and with an increase in the level of successful newstream-to-mainstream transactions.*

   Proposition 3: *The level of effective entrepreneurial cognition is positively associated with the use of productive socioeconomic frictions, and with a decrease in the level of unsuccessful mainstream transactions.*

4. Over-governed transactions. Over-governed transactions appear where obstacles to entrepreneurial thinking are sufficiently high that these transactions are likely to fail due to drag (Mitchell, 2003). The primary initiative of this type is the "command" or "plan to market" initiatives that are faced by transition economies. Accordingly I propose,

   Proposition 4: *The level of effective entrepreneurial cognition is positively associated with the reduction of unproductive socioeconomic frictions, and with an increase in the level of successful new market-economy transactions.*

Hopefully the foregoing analysis communicates the idea that due to inadequate information utilization (as exacerbated by the lack of requisite entrepreneurial cognition) it can be hypothesized that whole categories of possible transactions are missing, which entrepreneurial cognition research can identify in the service of greater economic development. Within each of these initiative zones exist specific research questions that—if answered—could contribute markedly to the induction of these economic possibilities (e.g. see Mitchell, 2003).

Toward Resolving the Economic Development Impasse

Where a thinking – doing linkage is proposed, it follows that actions toward resolving the economic development impasse should be "thinking-based." Accordingly, in this essay I also propose global "entrepreneurial economic literacy" initiatives that respond to this opportunity. This proposal is anchored by an entrepreneurial cognition/ economic development vision, which, simply stated, suggests: *Through a new vision for increasing new transactions through entrepreneurial thinking (cognition), every person should have the opportunity to be increasingly productive, and to benefit from the new value created*. Thus I argue in this paper that increasing prosperity through economic development is about better thinking that creates and supports a global entrepreneurial thinking revolution, and I call for the research necessary to help make this a reality.

NOTES AND REFERENCES

Note 1: Sources for Tables 1 &2

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(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.)

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