For Alice Fassitt Jupiter

And the other architects of the legacy of
The Camelback House
In Paradise
George Carroll Fassitt 1892-1960
Adele Nelson Fassitt 1895-1988
Mary Fassitt Demery Murphy 1919-1985

And For
St. Katharine Drexel 1858- 1955
Apostle to the Oppressed
# CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreword</td>
<td>IX</td>
</tr>
<tr>
<td>Introduction</td>
<td>11</td>
</tr>
<tr>
<td><strong>Part One</strong></td>
<td></td>
</tr>
<tr>
<td>The Tenets of Cognitive Evolution</td>
<td>13</td>
</tr>
<tr>
<td><strong>Part Two</strong></td>
<td></td>
</tr>
<tr>
<td>Existence in Time:</td>
<td></td>
</tr>
<tr>
<td>Mathematical Values</td>
<td>23</td>
</tr>
<tr>
<td><strong>Part Three</strong></td>
<td></td>
</tr>
<tr>
<td>Metamorphoses:</td>
<td></td>
</tr>
<tr>
<td>Virtuous Persistence</td>
<td>29</td>
</tr>
<tr>
<td><strong>Part Four</strong></td>
<td></td>
</tr>
<tr>
<td>Paradigms of Belief:</td>
<td></td>
</tr>
<tr>
<td>The Place of Mind in the Universe</td>
<td>67</td>
</tr>
<tr>
<td><strong>Part Five</strong></td>
<td></td>
</tr>
<tr>
<td>The Spirit of Inquiry:</td>
<td></td>
</tr>
<tr>
<td>Differentiating Belief from Knowledge</td>
<td>139</td>
</tr>
<tr>
<td><strong>Part Six</strong></td>
<td></td>
</tr>
<tr>
<td>Digitizing the Genome of Reason:</td>
<td></td>
</tr>
<tr>
<td>Clues to the Origin of g</td>
<td>187</td>
</tr>
<tr>
<td><strong>Epilogue</strong></td>
<td>197</td>
</tr>
<tr>
<td><strong>Afterword</strong></td>
<td>199</td>
</tr>
<tr>
<td>Reference Notes</td>
<td>213</td>
</tr>
<tr>
<td>Bibliography</td>
<td>219</td>
</tr>
<tr>
<td>Index</td>
<td>225</td>
</tr>
</tbody>
</table>
FOREWORD

The genetically close relationship of the Homo sapien with all expressions of life is documented in the genes which contain relics of our evolution going back eight hundred million years or more.

Findings The Human Genome Project
February 15, 2001

A readable text of the Book of life, the Homo sapien genomic landscape, allows research of the previously unfathomable. Quick to respond scientists have lined up on both sides of the issues of free will and determinism, randomness and predictability, without purpose and with God.

The Theory of Cognitive Evolution accommodates the seemingly contradictory, and holds that we are correct in describing chemical evolution as movement from non-life to life, but that we consequently err in describing biological evolution as the journey from simple life to intelligent life.

The far earlier than traditionally believed introduction of intelligence into life organisms requires that we redefine intelligence, instinct, and adaptation, for adaptation in plants and instinct in animals are evidenced also in the high order level of Homo sapiens. Flange or webbed feet,
genitalia aprons, highly specialized speech apparatus for production of the click language sounds are evolutionary evidence of adaptation of form and uncommon pre-geometry, extraordinary navigational abilities of some primitive peoples are neurological instinct in humans.
INTRODUCTION

We race toward the new world where intellect promises to be the most coveted capital. Instruments that measure intelligence have proved to be increasingly reliable in identifying mental talent in individuals and groups. But there are winners and losers in the tabulations. Evidence mounts that there are significant correlations between measured Intelligence Quotients and economic and social indices. Further extrapolations of data point to the emergence of insulated pockets of cerebral strength disturbingly isolated from masses of the population, and tending toward insular breeding patterns.

Though we recognize intelligent behavior, and can diagnose an individual’s probability of demonstrating it, we have not reached a consensus as to what it is, and the respective roles of genetics and environments in determining the degrees of its appearances. The debate is serious. Discernible patterns of its distribution can be read to suggest that some racial and ethnic groups are biologically intellectually inferior. By inference, others are biologically superior in intelligence.

Can the superior and the dull expect to share a common evolutionary future? Can society survive a recognized hierarchy of humanity?
The Theory of Cognitive Evolution holds that there are biological residues or imprints that result from the application of Homo sapien intelligence. Demonstrations of inequality among men exist not because of a genetic master plan but because of the equality of the species. Cerebral life is released or limited in accord with lineage, intrauterine experience, the patterns of thought internalized with the acquisition of language, and the culturally imposed identity of self.

Race and ethnicity are irrelevant to genius. The same cannot be said of cultures. Though categorically equal, cultures are decidedly unequal in cerebral impact.

Among no men can conclusions predicated on fallacy demonstrate truth. Illiteracy does not spawn literature.
PART ONE
THE TENETS OF COGNITIVE EVOLUTION
THE TENETS OF COGNITIVE EVOLUTION

COGNITIVE EVOLUTION IS A THEORY OF THE EVOLUTIONARY BIOLOGICAL INTERCONNECTEDNESS OF SURVIVAL, ADAPTATION, INSTINCT AND INTELLIGENT BEHAVIOR IN LIVING ORGANISMS.

The theory of Cognitive Evolution addresses how the brain makes mental behaviors possible. It is the result of an intensive analysis of interdisciplinary scientific efforts to codify the physiological underpinnings of cognitive functions in Homo sapiens. The theory proposes a new definition of biological evolution, and reaches other conclusions believed to be of scientific interest in areas as distinct as neurophysiology, psychology and computational theory.

Cognitive Evolution suggests that high order mental behaviors of Homo sapiens are rooted in the same biology as why moths are attracted to light, how worker bees know their assignments, how ants know the mechanics of executing the architectural design of an ant hill, or how a female cat knows to open the umbilical sack after giving birth.
I. All Life is Intelligent.

Though we are correct in describing chemical evolution as the movement from non-life to life, it is submitted that we are mistaken in our definition of biological evolution as the movement from life to intelligent life. Instead, the theory of Cognitive Evolution suggests that the definition of life is in fact the internal possession of intelligence at the cellular level, providing even the one celled organism with the capacity to change in accordance with rudimentary but nevertheless intelligent behavior in carrying out its life processes.

Life is in fact an organism’s embodiment of internal chemical capabilities which make possible the receipt and utilization of nourishment, the ability to respire and remove wastes and the ability to reproduce by virtue of the operation of internal intelligence at the cellular level.

Early viruses believed to be in a ‘twilight zone’ between non-life and life were such because they displayed halting emerging intelligence not sufficient for the internal maintenance of the becoming organism.

II. All Life Displays Intelligent Behavior.

To the extent that instinctive behavior is intelligent or purposeful behavior, the question we must address is, ‘Does the line of demarcation between instinctive behavior and intelligent behavior really exist?’ The theory of Cognitive Evolution holds that there are no lines of demarcation among structural adaptations in plants, instinctive behaviors in insects, birds and animals, and intelligent behaviors in Homo sapiens.

If we begin from the top of the intelligence pyramid and proceed downward, at what juncture does a mammal, fish,
bird, insect or plant display internal chemical processes absent intelligent purpose? If ivy adapts to its environment by sprouting suction cups for support, the internal chemical processes, which produced the needed support, did display intelligent or purposeful behavior.

III. ALL LIFE DEMONSTRATES INTELLIGENT BEHAVIOR BY THE REGULATORY AND CONTROL FUNCTIONS OF GENES, WHICH ARE EXPRESSED AS SURVIVAL, ADAPTATION, INSTINCT AND INTELLIGENT BEHAVIORS.

A key to understanding how the human brain makes possible mental experiences is a clearer comprehension of the changes in the conditions of chemicals or hormones within an animal’s body that are the stimuli for behavior which is labeled instinct.

Genes work by regulating specific chemical processes and control chemical and enzymatic reactions in cells. These regulatory and control features display the operations of internal intelligence at the cellular and systems levels. It is suggested that an understanding of the operation of intelligent behavior at the cellular level that produces adaptation behavior or instinctive behavior is the evolutionary key to understanding intelligent behavior at the level of the higher functions of the human central nervous system.

IV. THE INITIAL REPORTS OF THE HUMAN GENOME PROJECT ESTABLISH THAT EVOLUTIONARY RESIDUE IS EMBEDDED IN HUMAN GENES.
Cyberg 2005, 163
Dalian University of Technology, 113, 114
Darlington, C.D., 106, 152, 215, 216
Das, Gopal D., 50
Dehaene, S., 83, 86, 87, 88
Deoxyribonucleic acid (DNA), 49, 63, 64, 65, 66, 70, 169, 189, 190, 192, 193, 194, 196, 199, 214, 215
Descent of Man, 36, 38
Deutsch, Martin, 100
Diamond, Marian C., 56
Divinity, 124, 206
Douglass, Frederick, 124, 126, 128, 129, 130, 183, 216
East Africa, 164
Ebonics, 103, 178
Einstein, Albert, iv, 56, 72, 81, 89, 91, 141, 224
Einstein in Berlin, 90
Einstein, Maja, 90
Eliot, T. S., 196
Encyclopædia Britannica, 82, 220
Engelmann, Siegfried, 99
English as a Second Language, 103
etiquette disputes, 116
Eriksson, Peter S., 52
eugenics, 147

event-related potentials (ERPs), 86

evolution, ix, 15, 16, 27, 32, 37, 39, 40, 43, 51, 55, 63, 65, 66, 70, 90, 91, 94, 99, 105, 121, 122, 124, 131, 133, 147, 151, 176, 190, 195, 196, 216, 222

evolutionary, x, 11, 17, 18, 35, 36, 40, 41, 43, 66, 88, 92, 106, 117, 118, 119, 134, 195, 211, 214

evolutionary genomics, 214

experience, 12, 20, 21, 22, 43, 44, 45, 47, 61, 62, 110, 118, 127, 129, 131, 133, 157, 158, 160, 178, 182

Federalist Papers, 134, 216

flat worms, 192

Fore tribe, 190

form, x, 18, 19, 20, 21, 26, 27, 28, 37, 38, 39, 41, 43, 44, 52, 60, 66, 71, 79, 84, 90, 91, 95, 102, 103, 121, 133, 145, 147, 149, 163, 168, 201, 202

Freemen, Frank, 110

French, 86, 149

Fridjhon, Peter, 155

Fuchs, Eberhard, 52

function, 19, 28, 35, 41, 44, 46, 47, 54, 55, 57, 62, 63, 65, 70, 80, 90, 101, 123, 166, 168, 201

Future Shock, 119
Index

94, 99, 111, 121, 131, 132, 145, 146, 147, 162, 166
Horwitz, Barry, 114
Howard, B.C., 216
Howard University, 173
Hubble, Edwin, 141
Huguenots, 149, 150
Human capital, 152
Human Culture, 147
Human Genome Book of Life, 200
Human Genome Global Mapping Effort, 199
Human Genome Project, ix, 17, 25, 27, 175, 192, 214
humanity, 11, 39, 48, 93, 119, 133

illiteracy, 12, 131, 178
imagination, 183
inbreeding, 120, 148, 149, 171
incest taboo, 120, 122, 216
Indian, 138, 155, 157, 158, 165, 223
inequality, 12, 22, 70, 99, 122
Inferior Parietal Lobe, 32, 77, 221
inferior parietal lobule, 33, 73, 77, 78
Inferior parietal neurons, 79
INSERM, 83
instinct, ix, 17, 18, 34, 35
intellect, 11, 34, 41, 45, 73, 89, 95, 106, 108, 197

Intelligence, iii, iv, 11, 19, 27, 35, 36, 37, 94, 106, 154, 155, 159, 167, 189, 197, 199, 215, 222, 223
Intelligence Journal, 155
Intelligence Quotient (IQ), 11, 19, 37, 70, 94, 95, 142, 143, 144, 145, 146, 147, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 165, 166, 167, 169, 170, 171, 172, 173, 174, 175, 177, 178, 222
Intelligence, Race and Genetics: Conversations with Arthur R. Jensen, 167, 222
IQ and the Wealth of Nations, 142, 152, 153, 161, 166, 222
Ivy league, 171

Jefferson, Thomas, 183
Jensen, Arthur, 143, 145, 168, 173, 176
Jensenism, 146, 147, 155, 159, 167, 168, 173
Jews, 149
JFK Medical Center, 33
Jim Crow, 177, 178
Joseph, Rhawn, 32, 77, 101
Journal of Clinical Investigation, 33, 223
Journal of Experimental Neurology, 56
Journal of Experimental Psychology, 112, 115, 221
Journal of Neuroscience, 55, 220

Keller, Helen, 115
Kempermann, Gerd 50
Kentucky 2003 State Assessment of Adult Literacy Report, 46
Kentucky Adult Literacy Survey, 46
Knowledge & Decisions, 203, 216, 223
Kuru, 93, 190, 191

Lake Woebegone, 171
Lancet, iv, 72, 224
language, x, 12, 18, 21, 33, 38, 49, 56, 80, 81, 83, 84, 85, 87, 88, 89, 91, 96, 100, 101, 102, 103, 104, 105, 110, 112, 114, 119, 124, 127, 128, 129, 130, 166, 199, 200, 202, 208, 215, 222
learning, 20, 21, 39, 40, 43, 45, 49, 51, 52, 54, 55, 60, 61, 85, 100, 104, 114, 115, 118, 126, 131, 157, 158, 159, 160, 162, 163, 173, 199, 220
Learning Propensity Assessment Device (LPAD), 157
Levenson, Thomas, 90
life, ix, 12, 16, 17, 18, 25, 26, 27, 28, 34, 36, 37, 38, 42, 43, 47, 48, 49, 53, 59, 60, 65, 69, 70, 89, 90, 94, 95, 96, 106, 112, 120, 124, 133, 135, 145, 147, 166, 171, 182, 183, 189, 192, 195, 196, 202, 209, 216, 220, 221
Life and Times of Frederick Douglass, 124, 220
Linguists, 133
literacy, 20, 21, 43, 44, 46, 47, 96, 102, 117, 122, 123, 129, 131, 152, 160, 183, 199, 222
Live Science.com, 32
Lynn, Richard, 152
magnetic resonance imaging (MRI), 113
Manica, Andrea, 32
Marmoset, 52
mathematical intuition, 83, 90
McCrone, John, 41, 105
McEwen, Bruce S., 52
McMaster University, iv, 72, 77
mediated learning, 159, 160
Melanesian Fore, 93, 215
Mental
compartmentalization, 210
Miele, Frank, 167, 173
molecular behavior, 194
Monticello, 183
Murphy, Greer M., 56
Murray, Charles, 152, 213, 215, 221
National Assessment of Adult Literacy, 46, 222
National Institute on Deafness and other Communication Disorders, 114
Nature, 32, 36, 85, 87, 214, 219, 220, 221, 222, 224
Neanderthal, 93
Negroes, 137
neurogenesis, 49, 50, 51, 52, 53, 54, 55, 59, 61, 62, 148, 220
Neurol, 73
neurological instinct, x
neuronal form, 21
neuronal regeneration, 51
neurons, 18, 19, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 71, 78, 128, 147, 190, 191, 192, 194, 210, 221
Neuropsychiatry, Neuropsychology, Clinical Neuroscience, 221
New Guinea, 93, 190
New Scientist, 113, 114
New think, 177, 178, 179, 180
New York University, 159
Nobel Foundation, 189
Nobel Prize, 25, 190
non-life, 16, 26, 27
North Carolina Supreme Court, 184
Notes on Virginia, 183
Nottebohm, Fernando, 51
nucleic acid, 190, 191, 192, 194, 195, 196
Ogburn, William, 118
O’Neill, David H., 163
orchestrated, 25, 39
Orwell, George, 208
parietal cortex, 58, 74, 113
parietal input, 81, 102
Penzias, Arno, 25
Peoples of the Earth, 214, 215, 223
Pinel, P., 83, 219
Planaria, 191
porterage, 163, 165
Power Shift, 119, 223
Prep for Prep, 172
preverbal numerical abilities, 88
primates, 50, 52, 91, 148, 220
Princeton University, 55, 81, 111, 220
prion protein, 190, 191, 194, 195, 196
prions, 189, 190, 191, 192, 193, 194, 196
Prusiner, Stanley B., 189
Psychology, Public Policy and Law, 159

rain forest, 93
raw intelligence, 45
Research Studies
Altman (1963) and Kaplan (1981), 58
Alvarez-Buylla et al., 2001, 56
B. Shanon, New Ideas Psychol. 2, 75 (1984), 85
Barnea and Nottebohm, 1994, 60
Bernier and Parent, 1998, 58
Bernier et al., 2002, 61
Bezzi and Volterra, 2001, 56
Blinkov & Glezer, 1968, 77
Bookheimer, et al., 1995, 79
Bruce et al. 1982, 1986, 79
Bruce, Desimone & Gross, 1986, 78
Burton & Jones, 1976, 78
C. Frenck-Mestre and J. Vaid, Mem. Cogn. 21, 809 (1993), 85
Cajal S. London
MIT Press, 1989, 73
Cameron et al., 1993, 59
Chernigovskaya & Deglin, 1986, 102
Conel, 1937-1943, 77
Crossley & Ellis (1997), 164
Dayer et al., 2005, 61
Domenet, et al., 1994, 79
Fagan & Holland, 2002, 160
Flechsig, 1901, 77
Geschwind, 1965, 78, 79
Gould et al., 1999a, 59, 60
Gould et al., 2001, 58
Grieve and Viljoen, 157
Grieve and Viljoen (2000), 157
Gross, 2000, 60
Herman et al., 1989, 60
Hyvaerinene & Shelepin, 1979, 79
J. I. D. Campbell, Cognition 53, 1 (1994), 83
Index

Jones & Powell, 1970, 78
Joseph & Gallagher, 1985, 77
Joseph 1982, 79
Joseph et al., 1984, 77
Kornack and Rakic, 2001a, 58
L. Rueckert, et al., Neuroimage 3, 97 (1996), 86
Lemaire et al., 2000, 60
Luria, 1980, 101
Luskin, 1993, 58
M. E. Raichle, et al., Cereb. Cortex 4, 8 (1994), 87
M. Kline, Mathematical Thought from Ancient to Modern Times (Oxford Univ. Press, New York, 1972), 88
Menard, et al., 1996, 79
Oram & Thomas (1995), 164
Paulesu, et al., 1993, 79
Price, 1997, 79
R. Vandenberghhe, C.
Price, R. Wise, O.
Josephs, R. S. J.
Frackowiak, Nature 383, 254 (1996), 87
Rose and Konnerth, 2001, 56
Runyan et al., 2006, 61
Rushton and Skuy (2000), 155, 157
S. Dehaene, et al., Neuropsychologia 34, 1097 (1996), 86
S. Dehaene, The Number Sense (Oxford Univ. Press, New York, 1997), 88
Seltzer & Pandya, 1978, 78
Seri et al., 2001, 56
Shaywitz, et al., 1995, 79
Shors et al., 2001, 61
Skuy and Shmukler (1987), 158
Skuy et al. (2002), 159
Skuy, Hoffenberg, Visser, and Fridjhon, 158
Skuy, Hoffenberg, Visser, and Fridjhon (1990), 158
Snyder et al., 2001, 59
Sternberg et al., 2002, 160
Stevens CF. network
Neural Computation 1989, 73
T. Dantzig, Number
The Language of Science (Free Press, New York, 1967), 88
van Praag et al., 1999a,b, 60
Wang et al., 2000, 59
Warburton, et al., 1996, 79
Welker WI, Campos GB.J
Comp Neurol 1963, 73
Witwatersrand, Skuy et al. (2002), 158
Zaaiman et al. (2001), 155, 157
Zeki, 1974, 78
Reiman, Eric, 114
Rockefeller University, 51
Rock, John, 137
Roll Jordan Roll: The World the Slaves Made, 181, 220
Romero, Patricia, ed., 216
Rosenzweig, Mark R., 53
Ruffin, Thomas, 184
Rushton, J. Philippe, 155
Saga Medical School, 32
Sahlgrenska University Hospital, 52
Salk Institute of Biological Studies, 49
SAT, 173
Scheibel, Arnold B., 56
Schiff, Nicholas, 33
Science, 32, 83, 87, 88, 89, 214, 219, 220, 224
Scientific American, 61, 220, 221
Scientist, 32, 56, 219
Shang, Hong, 31
Shaw, A.G.L., 214
Shockley, William, 147
Sickle-cell anemia, 63, 64
Skuy, Mervyn, 155
slavery, 127, 134, 136, 138, 181, 182, 183, 185
Social Change, 118
Social engineering, 97
society, 11, 37, 39, 42, 46, 94, 95, 98, 103, 106, 107, 108, 116, 117, 119, 121, 131, 135, 148, 150, 168, 176, 179, 182, 185, 203, 205, 208, 211, 216
South Africa, 149, 155, 156, 157, 223
South Africa’s University of the North, 155, 156
Sowell, Thomas, 173, 203, 216
speak, 36, 40, 41, 43, 90, 102, 105, 107, 112, 166, 169, 206
speaking, 41, 103, 113
species, 12, 19, 22, 35, 38, 43, 63, 65, 88, 94, 119, 120, 131, 145, 166, 167, 168, 196
speech, x, 18, 21, 40, 44, 127, 199, 214
speech center, 21, 44, 199
St. Augustine’s High School, 178
Stanescu, R., 83, 219
State Assessment of Adult Literacy, 46
sterility, 109
Stone Age, 48
stratification, 95, 107
structural integrity, 27, 28, 195
sub-Saharan, 32, 154, 155, 158, 163, 222
sub-Saharan Africa, 32, 154, 155, 158, 163, 222
Supreme Court of the United States, 137, 176, 179
Suzuki, Lisa, 159
Symbolic arithmetic, 87
Table etiquette, 116
Tang, Yiyuan, 113
Tasmanian Aborigines, 48
Teaching Disadvantaged Children in the Preschool, 99, 215, 220
The Academy of Achievement, 175
The American Mathematical Monthly, 111
The Ape That Spoke, 41, 105, 215, 222
The Columbian Orator, 126, 127, 128, 129
The Evolution of Man and Society, 106, 119, 150, 215, 219
The Hoover Institution Stanford University, 203
The Human Genome Project and Beyond, 192, 219
The Little Universe of Man, 152, 219
The New York Times, 200, 216, 223
The Oxford Companion to the Mind, 215, 223
The Psychology of Invention in the Mathematical Field, 81, 89, 220
The Sunday Times, 217, 223
Theory and Practice of Psychological Testing, 110, 216, 220
Theory of Cognitive Evolution, ix, 12, 106, 177, 206
Theory of General Relativity, 90
Theory of Relativity, 90
Third World, 174, 197
threshold, 19, 21, 34, 39, 145, 168
Tianyuan Cave, 31
Time magazine, 191
Toffler, Alvin, 119, 213
Tong, Haowen, 31
Tredoux, Gavan, 148
Trinkaus, Erik, 31
Truk Islanders, 42, 214
trunk, 42
Tsunehiko Hanihara, 32
Tukey, John W., 111

United Kingdom
Department for International Development (DFID), 163
United States Supreme Court ruled, 136
University at Timbuktu, 197
University of California at Berkeley, 53
University of Cambridge, 32
University of Chicago, 195
University of Illinois, 53, 62
University of Wisconsin-Madison, 32
US Department of Health, 99
valine, 64
Vanhanen, Tatu, 152, 222
Venter, J.C., 214
viral disease, 93
Virginia Act of 1705, 184
visuo-spatial cerebral networks, 84, 89
visuo-spatial circuits, 87
visuospatial intelligence, 74
Voss, Henning, 33
Washington University, 31
water, 26, 28, 54, 106, 108, 175
Watson, James, 189
web of slavery, 200
White, 65, 126, 144, 155, 156, 157, 162, 169, 170, 173, 176, 178, 179, 223
White American students, 173
White families, 144, 169, 170
Whites, 143, 155, 156, 158, 177, 183
Wilson, Edward O., 148
Wilson, Robert, 25
Witelson, Sandra F., iv, 72
Xue, Qilin, 112, 221
yeast-prion research, 195
Zhang, Shuangquan, 31
Zimbabwe, 165