Pieces of the Puzzle

Short Essays

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"What do like to do best in the whole world, Pooh?" "Well', said Pooh, what I like best…" and then he had to stop and think because although eating honey was a very good thing to do, there was a moment just before you began to eat it which was better than when you were, but he didn't know what it was called." From Whiney the Pooh. AA Milne

Humans and Other Animals

The human brain is a wonder of computational ability and the brain initiates and supervises its own training. The foundation of intelligence lies in the tuning ability of the brain. Tuning circuits appear in the first animals alive on earth. Animals must tune into what is going on around them in order navigate through a world-space to find required materials such as water and food. An animal is more intelligent if he or she tunes accurately into what is going on and finds what is needed without injury or death.

Every educated person needs to know that the mind, spirit, soul, heart, personality, self, feelings, hopes, desires, values, preferences, personality all exist in the brain. We have old metaphors such as the "heart," "spirit" or the "soul" that suggest otherwise, but the liberating truth is that it is all in the mind and the mind is all in the brain. All humans who survive are capable of tuning into the basic events that are occurring out there. With a little help from friends, family and community, humans who survive and thrive have passed the intelligence test of life.

The evolution of intelligence has been gradual and conservative. The earliest solutions to tuning into relevant information have been retained by the latest brains. Humans, despite their pretensions to be better than other animals, are intimately related to all other creatures on the planet and use similar strategies to survive. Humans are more complex and more destructive than other animals but otherwise are in the same business of getting food and surviving in a challenging, ever-changing world. Human intelligence and animal intelligence are made of the same stuff.

There is every reason to believe that the conscious experiences of humans are continuous with and similar to, if not identical with the conscious experience of other animals. The best assumption is that the fundamental and pristine consciousness that lies at the core of humans experience is the same consciousness experienced by other animals. There is no method of deciding how far back in time consciousness extends, but there is no reason to limit consciousness to primates or mammals when birds and many other animals appear to be conscious.

The degree of mindfulness ascends the evolutionary scale with insects and worms at the low end and primates at the high end.

If you imagine visiting the mind of another animal, you could ask how familiar would this mind be and how comfortable would I feel?

There is little doubt that the mind of apes would be very similar to our own and you would be familiar with most of the experiences. Visiting a whale's mind might be different, more like visiting an alien space ship in science fiction stories. You would recognize the same depth and complexity of consciousness and many of the same feelings but all the detailed information about the underwater world obtained by sonar and kinesthetic senses would not be familiar.

Humans who live intimately with dogs will have little difficulty understanding that the dog's mind has many common features with the human mind. Dogs adapt remarkably to human life and enjoy many of the same experiences the humans do. My first dog friend, Pablo, a large German Sheppard, sat in the passenger seat of my 1967 car as we traveled across Canada looking for a new home on the west coast. He enjoyed every moment of traveling and invented a repertoire of amusements and responsibilities which included singing, snapping at passing trucks, watching for girl dogs and wind riding. Wind riding consisted of sticking your head out the passenger window and mostly looking ahead with your ears back. For thrills, you would move your head up, down and sideways to feel the different pressures of the wind on your head. For the rest of his life, Pablo would sit every day in that car, parked in the driveway waiting for the next ride. He would be inconsolable if I drove away without him.

My latest canine companion, Sonny, was a good friend. He aged faster than me. I empathized with his aging plight as he empathized with me when I was ill. I admired his athletic prowess, his enthusiasm and his skills navigating on planet earth.

We were both survivors, but he would have done better than I would if the supermarkets had disappeared. I enjoyed participating in his wolf ways more than I enjoyed teaching him how to become human.


Sonny

Experiments designed to test animal "self-awareness" as a feature of consciousness are based on the wrong premises. Animals are conscious, but there is no test. Just as humans are conscious, but no combination of human tests will ever prove that.

I watched a documentary on animal intelligence; the commentary was surprisingly ignorant. Film clips of baboons interested in mirrors were shown. Baboons are remarkably similar to us in their social habits and get quite excited when the find mirror pieces in a human garbage dump. They look at their reflections with great interest. One baboon was shown holding the mirror in different ways at different angles and passing his hand behind the mirror trying to locate the image. The commentator claimed that baboon did not recognize his own image and he was looking for another baboon and therefore was

not conscious, a claim that should receive a dumb award (the human was dumb, not the baboon!)

The baboon was displaying all the intelligence of a conscious, smart animal and should receive a science award. He was trying to figure out where the image was located. To a curious scientist, the puzzles of mirror images continue to intrigue and perplex. When I pass a mirror, I am not sure who or what I am seeing there. I do not always relate to the image as myself and whenever I do, I am still not sure who "myself" is. For example, the guy in the mirror is much older than I am.

I am certain that recognizing your image in a mirror is not a test of consciousness, nor of intelligence. It may be a test of gullibility. Sonny, with all the innate wisdom of a wolf mind decided quickly that mirror images are not real – they have no smell. He will, however, lie down in front of the full length mirror in the bedroom and stare at his image. He is a natural meditator. If I walk into the room, he follows my progress in the mirror, wags his tail, but does not turn around.

The human mind and human behavior is more comprehensible if you recognize that the brain is a multi-layered modular assembly of functions that retains features hundreds of millions of years old. The newest features were invented in the past 1000,000 years. The idea is that the human brain we are now enjoying was more or less complete about 200,000 years ago. These are approximate durations and should not be held rigidly. This perspective, at least, allows us to recognize the antiquity of our basic tendencies.

A brand new baby is an old creature who could live in a cave and learn to make stone tools or live in an air conditioned house in the suburbs and watch TV.

As children grow and develop, you witness displays of old animal behavior, good and not-so-good, that must be selected and modified to achieve a modern, happy successful citizen of planet earth. Children teach us about human evolution. As we learn from children, we develop valuable insights into the workings of the human mind.

Each human brain is a more or less modern computer built into and on top of a museum of neurological parts. Human experience and behavior manifest this layered, multimodal assembly. Humans feel feelings that many animals feel and have social tendencies that all primates share. Some old feelings are wild and exciting and some are disturbing.

Some feelings come from a distant place and another time. Wild feelings and drives may interrupt the flow of a modern rational existence and propel an individual on an irrational adventure, sometimes leading to discovery and liberation; at other times, to disaster.

Humans are Social

Humans are social animals and generally depend on each other to provide rules of conduct, information, context and meaning. Mostly, humans are free to conform to the norms and expectations of the local group. Human's copy what other humans do and are usually limited to repeating the speech and behaviors of others. Innovations are small modifications to existing methods, ideas or beliefs. While there are a great variety of social organizations and diverse expressions of social interactions, there are a limited number of root tendencies that give rise to the many variations. Religious affiliation is mostly about group membership and the rivalry that exists among groups.

Human societies began with small groups that were more or less self-regulating entities. Group myths and rules provided common ground for group members. Families lived in local clusters, forming clans which joined together to form bands. Tribes were larger organizations based on looser affiliations of bands that defined and defended larger geographic areas. As tribal groups enlarged and became more powerful, local group myths grew into larger group myths complete with symbols and rituals that played a vital role in tribal cohesion. In the cohesion stories, tribal leaders grew larger than life often with supernatural powers.

This irregular and uncertain progression from small to large groups continues in human societies today. Humans live in the paradox of being isolated creatures with selfish interests, linked inextricably together by needs, thoughts, feelings, gestures and language.

Because of a deep assumption of the independent self, humans tend to exaggerate the importance and the autonomy of individual experience and individual action.

The idea of personal freedom is misleading. A self-determining individual is seldom if ever an independent agent acting only on his or her ideas and intentions. The more closely you look at any individual, the more you find group activity and the more you recognize that individuals seldom act alone. Even when humans do act alone, each person is an agent of a common understanding both innate and learned. Each person has the sense of others watching. A human tendency is to suffer loneliness and to become despondent or suspicious and hostile when alone for extended periods.

In this book, and other books I emphasize the importance of group activity and group identity. The aptitude and skills required for affiliations and bonding originated with interactions in small groups. Our tendencies developed in small hunter-gatherer groups; with humans who knew each other and depended on each other to find food, protect the young and defend the group from predators.

Rather than viewing society and culture as real things, an observer can recognize that humans live in groups that repeat and modify innate behaviors to produce prolific variations on a few underlying themes that are common to all societies. The smart observer will consider the grouping characteristics of humans and discern basic patterns and problems underlying the apparent complexity of modern civilization. As human populations expand and interactions become increasingly complex, innate abilities are stretched and distorted. The ability of individuals to relate to other humans remains limited and limits the effective management of enlarging groups.

At the level of the largest organizations, small groups decide on policy and procedures that affect many nations, even the fate the entire species. The tendency to impose rules and policies from the top down is, however, risky because individuals and small groups cannot understand the needs, values and beliefs of large numbers of local groups. Worldwide policies will tend to fail since they emerge from limited understanding and ignore the tendency for humans to relate most strongly to a small, local group. At the deepest level, humans discriminate and select only a few humans out of many to trust and share time and space.

The Meaning of Innate

Innate tendencies are buried deeply in our psyche and are often well concealed by overlying new ideas and tendencies. Innate tendencies are not rigid forms but are patterns of organization that collect individual, biographic content. Innate programs are the form and biographical details are the content. Humans, like other animals, continuously interact with their environment to bring their existing or anticipated state into congruence with a desired state. Humans and other animals are engaged in a continuous tracking operation to locate sources of food and water and to avoid danger.

The basic idea behind animal brains is to bring information about the outside world together with information from inside the body. Our survival depends on innate programming, refined by practice and expanded by learning. Images of the outside tend to be detailed and explicit in consciousness. Vision, hearing and smell are distance senses that inform about events far away. Sensors on the surface of the body inform about close contacts. Sensors in muscles and joints inform about our movement in spacetime and provide information about contact with the ground. Sense receptors inside the body are of various kinds and are not clearly represented in consciousness.

Inner sensors provide information to the brain about conditions in the body, often in the form of feedback to inform the brain about the consequences of actions taken.

Recurrent patterns of behavior in human societies reveal innate tendencies. Similarities in emotional expressions in animal and humans reveal innate tendencies. Brain function has evolved conservatively so that very old features of the reptilian brain remain intact in modern humans and the best new features such as language

have evolved naturally by the elaboration of older communication systems shared by many animals.

Old programs include our most negative qualities such as predatory and territorial aggression, anger and rage. Old programs include some of our most positive qualities such as the tendency to bond and form more or less cooperative social units with altruistic features. Humans groups are exclusive and territorial, however. Non-members are shunned, often hated and sometimes killed.

The old brain remains in control of our bodies and often controls the experience of mind. Old brain programming needs to be automatic and reliable. You do not require newborn schools to teach babies how to regulate breathing, heart rate, digestion and all other automated body control features that we take for granted. No school is capable of designing and installing language processors in the brain. Schools exercise the already-existing language processors.

Success at humanitarian efforts within a society reveals that portion of human attitudes, beliefs and behavior that can be modified and/or are supported by innate tendencies.

Failure of moral authority reveals the extent to which innate negative tendencies prevail no matter how diligent the effort to modify or suppress them.

You do not have to be scientist to understand that some people are nicer than others, some are smarter than others and some humans are dedicated killers, undeterred by the pacifist tendencies of their neighbors.

Our tendencies are expressions of programs built into our brains and they are not going to change in the near future. Each person must understand and modify these tendencies:

The tendency to criticize, blame and punish others is inevitable in humans and opposes the tendency to cooperate with and care for one another.

The tendency to form exclusive groups and discriminate against others is also universal and opposes the tendency toward tolerance and peaceful coexistence.

The tendency to covet the property of others, to lie, cheat and steal is also universal and opposes the tendency to respect the integrity of the other, to cooperate and share.

The tendency to anger, hatred and killing is also universal and opposes the tendency to recognize the common humanity in the other and opposes the intelligence of seeking ones' own well-being by protecting the well-being of others.

Rules imposed in the form of laws and restraint by force can never achieve the desired result since these devices can only control temporarily these innate negative tendencies.

The other option is to transform negative tendencies through a process of secular and spiritual education.

I and Thou

> "The cry is not yours. It is not you talking, but innumerable ancestors talking with your mouth. It is not you who desire, but innumerable generations of descendants longing with your heart." Nikos Kazantzakis

The human brain is committed to identifying and tracking other humans. A sense of a common or shared consciousness pervades individual consciousness. The deepest layers of brain organization are involved with sensing other humans and deciding how best to interact. Humans live in the paradox of being isolated creatures linked inextricably together by needs, thoughts, feelings, gestures and language.

A sense of a common or shared consciousness pervades individual consciousness. Each human is born with a deeply embedded sense of social structure. Human tendencies were not invented by modern society and are not going to change fundamentally until the construction of our brain changes.

The challenge of really understanding how humans operate and why they do the things they do has been taken up by several academic disciplines. No idea can possibly be right if it ignores human physical and mental continuity with all other living creatures.

Humans bond to each other in several ways. The most enduring bonds are kin-related, based on closely shared genes. Mothers bond to their babies and siblings bond to each other. Friendships are weaker and often temporary bonds that are based on the need to affiliate with others for protection, social status, feeding, sex and fun. Humans seek to bond with others and are distressed when they become isolated. Social conventions rely on bonding.

Descriptions such as “love, affection, friendship, loyalty, duty, faith, obligation” all refer to bonding.

The most celebrated and contested bonding is often described as "falling in love" and occurs between individuals who are not related. The experience of falling in love is a complex of feelings, perceptions and cognitions designed to bring to two people together in a tight, exclusive bond that supports reproduction.

The essential feature of falling in love is a fascination with another person coupled with a drive to be with them and to protect them. Men idealize their loved ones and suspend business as usual in favor of serving the needs of their potential spouses. Women are overwhelmed with maternal feelings and fantasies of home, the family, and assume the enduring devotion and support of the male. Both lovers will tend to feel euphoric and powerful. They feel that their devotion can overcome all obstacles and accomplish wonders.

Few humans escape the great longing for a soul mate and the painful loneliness when one is not found or found and then lost. The desire for a perfect mate is at the top of every human’s wish list. What is remarkable is that most humans never give up, even after several unhappy, even destructive or tragic relationships. Most are willing to try again. This is not a matter of choice but the expression of a deeply embedded drive to bond to another.

Artifacts are often used as substitutes for actual companionship. A picture, letter book, jewelry, or article of clothing can act as a temporary substitute for a real person.

Pets are often substitutes for human companions. Dogs are known for their loyalty and devotion, whereas human companions are less consistent.

There is no positive affiliation that protects humans from conflict. The most intimate relationships are marred by disputes and harmful actions. External regulation of human behavior in the form of peer pressure and impersonal rules is essential for both individual and group survival.

Because human mates often cannot live up to the deep expectations for a soul mate, the quest for a perfect communion is sometimes expressed in terms of devotion to a God or one of his representatives. Imaginative people make up a friend or invent a religion to reduce loneliness. Artifacts are often used to support the belief in a divine and omnipresent friend. Books contain the voices of other humans and can be relied upon to provide companionship when humans in the flesh are unavailable or too disagreeable to engage.

One of the key issues of human existence is the discrepancy between evaluating others and evaluating oneself.

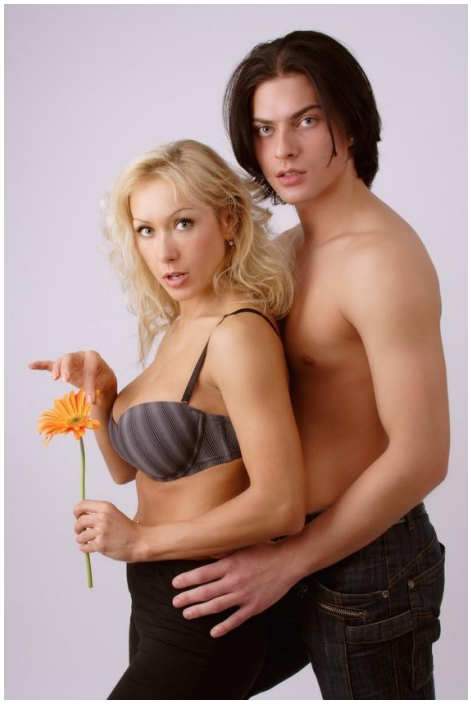
Humans evaluate and compete with each other in a continuous negotiation that involves strategy, criticism, conflict, and overt battles. The brain systems that evaluate others are not used in self-evaluation. It is easy to argue that humans, like other primates, are mostly interactive creatures, pre-occupied with what others are doing; however, humans have little or no cognitive ability for self-evaluation.

The ability to self-evaluate must be practiced in a sustained and intelligent manner over many years to become meaningful and

accurate. One human relies on another to evaluate behavior and therefore, human society has built in multiple and complex evaluative procedures that operate daily as external controls. In the simplest analysis, humans tend to judge others with more skill, more detail and more critically than they judge themselves. Each human peers out from a central illusion of a perfect self that must survive at all costs.

Humans tune into other humans and copy desirable statements and behaviors. The term "appropriate" suggests that language and behavior can be matched to suit the needs and standards of a specific group. Skillful humans learn to be appropriate in different social settings. Humans self-regulate in social settings by observing others and adjusting their own behavior to be more congruent with the behavior of others.

The ability to act appropriately is not necessarily linked to insight into the social process and, typically, a well-behaved human will return from the party with a collection of criticisms of others but little understanding of his or her own thoughts and behavior.



Intelligence

One of the variables in human populations is differences in intelligence. All children are not the same and different abilities are best advanced with different educational content and techniques. If the educational ideology is that all children are the same and that all children should follow a single educational path, then confusion, frustration and failure will remain dominant experiences in schools for students, parents and teachers. Reasonable teachers will recognize obvious differences in ability and compassionate teachers adjust their teaching methods to provide an enriched curriculum for smart students and more practice of basic skills to help less intelligent students retain their dignity. Low IQ children need more repetition, supervision, and support and do best with highly structured, rote learning. High IQ children will learn on the own and will respond well to intellectual challenges and open-ended inquiry. All children need help relating to one another and need good role models. The best role models are well-behaved, smart and well-informed humans who are successful in shaping their own lives.

There have always been good teachers who enhance the lives of students and bad teachers who intimidate students and leave lasting scars. There have always been good students who flourish despite bad teachers and bad students who fail despite the efforts of good teachers.

While there is some value in attempting to locate, describe and measure individual intelligence, the entire effort can be misleading. All education is a transmission from many people to one, but the individual student never acts alone. Humans interact continuously and intelligence is a group activity and not the property of an

individual acting alone. The ability to make friendships and sustain alliances is the most critical determinant of success in life. The ability to learn skills by copying the skilled behaviors of others is the basis of all advanced human accomplishment. To be effective, humans must learn and repeat procedures developed by others. Progress is achieved by incremental improvements in procedures that are otherwise copied without modification. A teacher is usually an intermediary who transmits copies, often as simplified versions.

Professional teachers seldom use the knowledge they transmit and may have an inadequate understanding of the content and relevance of the knowledge and skills they teach. They often teach obsolete ideas and skills.

Coherent social organization is achieved by a meta-brain. Many individual brains are coordinated in a network of interacting individuals. Human invention is incremental and innovations spread from human to human because the two central tendencies of humans are to copy and compete. Humans are used to social regulation through speech and explicit rules. They tend to overlook the more basic and pervasive social controllers that operate spontaneously from innate properties in the brain. In primate groups, individual animals are locked into in complex sets of social and kinship networks. The kin group is the most prevalent basic unit of organization and has a genetic basis.

Intelligence is organized around the interactions with others. Visual information gathering is dominant in primates and specialized area of the cortex is devoted to evaluating what others are doing.

Neurons in the inferotemporal cortex of macaques respond to faces and hand gestures, for example. Some neuronal groups are tuned to specific behaviors.

Essential features of intelligence are the identification of individuals by appearance and behavior and the evaluation of advantages and disadvantages of association with other individuals. Smart people are better leaders because they are better evaluators of the behavior and intentions of other members of their group and are more accurate in responding strategically to challenges from their subordinates.

Modern humans belong to many groups of different size and importance and will create a hierarchy of allegiance characterized by shifting loyalties and even reversals of allegiance. Tracking allegiances is a major task for intelligence and some people are obviously more gifted than others. Humans evaluate and compete with each other in a continuous negotiation that involves strategy, criticism, conflict, and overt battles. It is easy to argue that humans, like other primates, are mostly interactive creatures, pre-occupied with what others are doing.

Humans have limited ability for self-evaluation. One human relies on others to evaluate behavior and therefore, human society has built in multiple and complex evaluative procedures that operate daily as external controls.

One of the key issues of human existence is the discrepancy between evaluating others and evaluating oneself. The potential ability to self-evaluate must be practiced in a sustained and intelligent manner to become meaningful and accurate. In the simplest analysis, humans tend to judge others with more skill, more detail and more critically

than they judge themselves. Learning to self-evaluate requires a sustained effort supported by expert teaching and supervision.

The best teachers in the best schools help students to recognize the consequences of their behavior and modify their strategies, but this is uncommon. A good teacher must have learned self-evaluative skills and must have empathy with students who lack insight.

External regulation of human behavior in the form of peer pressure and rules is essential for both individual and group survival. Appropriate language and behavior match the needs and standards of a specific group. Intelligent and skillful humans learn to be appropriate in different social settings.

Less intelligent human have more difficulty adjusting their behavior and act inappropriately.

The innate rules of association built into our brain pertain to small groups and tend to become dysfunctional when individuals try to relate as members of large and anonymous groups. Large groups are still controlled by individuals and small groups with limited ability.

Enlarging organizations rely on repeating modular structures controlled from above. A large corporation has many repeating subunits linked and administered by a central office that is controlled by a small group of executive officers and directors. As the corporation grows, the executive officers do not become more intelligent, better informed and more expansive. Indeed, executives in growing corporations usually become isolated in their immediate social group and have difficulty grasping issues beyond the local group and self-interest.

The basic idea is that the cohesion of primate groups is limited by the information- processing capacity of their neocortex, which limits the maximum number of individuals with whom a human can maintain social relationships by personal contact.

From the viewpoint of a single person, only a small number of other humans can be recognized as individuals. Only individuals have thoughts, feelings, status and rights. All the rest turn into "the masses". If enlarging societies are to succeed, they must continue to organize around small groups that retain the features and advantages of small groups.

As humans adapt to living in very large groups, some peculiar attitudes emerge in an attempt to cope with a large number of other humans out there that you cannot know, cannot understand and cannot trust.

Since peoples' identities blur as their social distance increases, there is a tendency to use all inclusive, general and vague categories for everyone who does not belong to your inner circle. As you move further away from home, even the categories blur.

Language and Syntax

Humans speak naturally and spontaneously and learn the language spoken around them. Babies start to say words by 12 months. In the second year, a child develops vocabulary of about 250 words and makes simple statements. Children use correct sentence structures by the age of three. Vocabulary increases to about 2600 words at the age of six.

The motive for speech is to influence the behavior of and share information with other humans. The desired effect of speaking to others is to modify their behavior in ways that benefit you. Speech is used to review what has happened, to plan what should happen next and to sequence events. Speech has evolved from ancient animal skills of social interaction that have been concentrated in the temporal and frontal lobes of primates. Humans have enlarged cerebral hemispheres in general and expanded frontal lobes in particular. Distinctively human attributes rely on growing interactive circuits between frontal lobes and every other part of the brain. Spoken language is the key to interaction with other humans.

Babies spontaneously make non-verbal sounds that with brain maturation and practice gradually form some sounds into recognizable words. Speaking is a spontaneous feature of the brain, and all normal children will speak if they hear a language spoken; any language will do. Older infants imitate words they hear spoken and if adults engage them in conversation, will expand their vocabularies and start to make meaningful statements. Adults spontaneously speak "baby talk" to infants using high pitched, somewhat melodic and non-verbal sounds, exaggerated facial expressions and hand gestures.

Babies like the entertainment and babble and coo in response. This mimetic exchange marks the beginning of human conversation. Human conversations always retain an infrastructure of nonverbal sound communication.

The coherent, syntactical aspect of language is an overlay of more precise communication. Words go with gestures Young children point with a pudgy index finger and say the name their pointer indicates. Pointing and naming remains an endearing characteristic for the rest of a human life. Babies follow the path of language evolution. Their progress is from the description of the immediate and concrete objects to making abstract statements about events. The first thing you do when you are learning a language is point and name. You invent nouns. Little tykes can get a lot accomplished with their pointing finger and a few nouns. Tourists in a foreign country revert to the two-year-old strategy of pointing, naming, using pantomime to replace the verbs they do not know.

The distinction between syntax (sentence form) and semantics (sentence meaning) is fundamental to the study of language. Grammar is the reasoning part of language. The meaning of sentences requires understanding individual words and the syntactic frame in which the words are embedded. The brain activities associated with syntax and semantics occurs in distinct cerebral cortical areas that are interconnected. The underlying strategy seems to be based on grouping objects and actions into meta-categories with meta-rules that form the syntax or grammar of the language. The human brain stores nouns and verbs separately and has surprising habits of separating words and syntactical rules in sub compartments. You get something of this effect with computer

programs that store data and program segments in scattered blocks of memory and then keep a map of where all the pieces are. In addition to a map or as part of the map, the brain has series of assemblers that remember how to put all these pieces together.

Different languages can co-exist in one brain and speakers with different linguistic styles can co-exist in one brain. A single language, the one that is used most often, will dominate, however, and secondary languages will borrow from or compete with the primary language for representation.

You need a small collection of standard sounds or phonemes to make a language. The sounds are stored in the temporal lobe of the left hemisphere in most right-handed people. Humans acquire sounds when they are young and then shut down the sound library at about age ten. If you learn a new language after that, you speak with an accent because you still use the sounds of your original language and try to fit them into words of the new language. The new language has some of its own unique sounds that you cannot articulate so that your version of the new language sounds funny and a native speaker with experience of different accents can often figure out what your original language is.

Humans learn words by hearing phoneme combinations, morphemes, and imitating the sounds. Words are connected to meanings by association. You have to point and name to give new words meaning, but as you get older and more sophisticated, you can translate directly from a word in your known language to a word in the new language you are learning.

The left hemisphere stores most language function in right-handed people and two thirds of left-handers.

A basic understanding of brain language systems begins at Wernicke's area of the temporal cortex that receives auditory input. The posterior perisylvian sector assembles phonemes into words.

The speech output region of the frontal cortex is Broca's area. Neurologists have long thought that intervening areas of the cortex "associate" input and output. Damage to Broca's area leads to an inability to speak or lesser errors such as improperly pronounced words and word substitutions. Advancing studies of the human brain show greater complexity than early models allowed.

Reading and writing are the newest, least natural functions of the brain and appear to depend on more widely dispersed cortical activity. A reasonable argument is that spoken language is based on older brain systems that are more specialized and localized. Written language appears to borrow brain processing from many subsystems and is less specialized and localized. Written language is superimposed on spoken language and is, at least in the early stages of learning, derivative of speech. This means that visual symbols represent sounds and written words are learned by associating the symbols with the sound of words, already known. A phonetic approach to teaching written language makes neurological sense.

Languages differ in their content and construction and some appear to be easier to learn and use than others. Children who have difficulty learning to read and write are described as "dyslexic." English is a difficult language because written words are not necessarily phonetic. There are thousands of odd spellings that resist decoding by 'sounding out the word". In addition, there are many words that sound the same but are spelled differently.

American spelling has simplified some words by removing characters that have no phonetic significance; color replaces colour, for example.

There are about 40 phenomes in English, represented by different letter combinations. Easier languages to learn such as Italian have fewer sounds, represented by fewer and more consistent letter combinations. Some written languages were invented with rational and consistent rules, others evolved with irregular and inconsistent grammars. Korean writing, for example, was invented by a King and rationally represents sounds with a phonetically based alphabet. Korean names tend to have three short syllables such as Oh Me Kwon. The many short words in English such as articles and prepositions are omitted. In Thai, a similar simplification of grammar is prevalent with no distinctions made for verb tense. The timing of actions is indicated by a few words that refer to the past of the future.

English verbs tend to be stored in the left frontal lobes and seem to be linked to syntactical rules. Names can stand-alone but verbs and language rules go together. Adjacent areas of the left posterior temporal and inferior parietal cortex store the morphemes for color words. Damage to these areas disturbs the ability to say color names.

Complaining and Case Making

Humans are tricky animals. You really have to be careful what you say and to whom. Every human is evaluating every other human critically every moment of every day. The easiest conversation to have with a fellow human is to share grievances about a common rival or enemy. The preliminary moves in most new conversations probe the possibility for common enmities.

Trivial complaints are safer than major grievances. You have to be quite sure of common ground before launching a major assault on a mutual friend or family member. If you are persuasive, you can convert a neutral audience to share your enmity, but be careful, because you audience may go down the street and turn the tables on you.

Humans often have difficulty distinguishing between internal and external causes of dysphoria and most often look outside to explain why they are feeling badly. The tendency is to project internally driven dysphoria into the world outside, blaming someone or something for an uncomfortable inner state.

The explanation given for blaming the other person is rationalization, an argument that is constructed reasonably but is based on a false premise. You make up a story which explains why you feel the way you do. Conflict ensues if the recipient of blame notices the claims made against him or her are unfair. The first conflict fuels a new and recurrent conflict. If the relationship continues, the participants experience an expanding repertoire of dysphoric feelings and irrational arguments.

Sometimes the inner feeling states are projected outward and explained with ideas of reference in the form of "vibrations" or

"energy fields" given off by other people or places. When ideas of reference take over and a person feels controlled by forces outside, the psychiatrist diagnoses a major mental disorder, psychosis.

Projection and blame are common devices of journalists who write provocative opinion pieces. This journalistic version of case making is the bread and butter of professional writers and is commonplace in television journalism. Paranoia is the advanced version of projection and blame.

Complaints have a general form and it is difficult to find humans who do not complain. It is easy to find humans who complain all the time about almost everything and everyone they encounter. Complaining can be an individual response to group rules and commoners can challenge more powerful humans if they have the right complaints. Humans complain together as to establish affiliation and shared complaints can become an enduring social bond. Complaints often turn into cases, well-developed stories that accuse others of character flaws, wrongdoing, and simulate a courtroom drama, presenting evidence, determining guilt and announcing the penalty. Humans are natural prosecuting attorneys and do not need law school training to casemake on a daily basis.

Casemaking involves practice in the form of complaining conversations with others and self-talk. Selftalk is the inner narrative that runs continuously in every human mind that is otherwise not engaged. Case making self-talk is so implicit, covert and natural that the self-talker may not be aware that he or she is so involved in the process.

Not everyone has insight into the covert processes of their own mind and only a disciplined mind-watcher will have the opportunity to fully explore all the ramifications of spontaneous mind activity.

Cases build over time often involve self-aggrandizing fantasy and rehearsal of speeches that can be used to complain to others, or sometimes, to confront the accused. Females tend to make dramatic cases and act them out in front of friends as if they were auditioning for a part in a television drama. They test their stories on each other and reach consensus by sharing angry outbursts. Often, the guilt of the accused in determined more by the intensity of the storyteller's emotional display than by the substantial merits of the case. Women are specialists at sneak attacks, passive aggression and work covertly to build a case against an enemy. Men, in comparison, tend to be more demonstrative and their aggression is more easily seen. Men are strategic in the complaint department, at first finding allies with subtle put-downs and sarcasm. The idea is to discredit and marginalize anyone you do not like. When men feel secure that other men are allies and agree with their accusations, they become more demonstrative trying on insults against the common foe with derisive laughter and backslapping camaraderie. Groups of men are most dangerous when they achieve camaraderie, based on shared complaints and casemaking because they can generate enough aggressive energy together to physically attack their common enemy. A volatile men's group can create a new enemy in a matter of minutes.

Casemaking is an inevitable form of self-talk and may lead to hostility and aggressive behavior against the characters that play in the mind.

Casemaking is covert and the cases being tried in the minds of each human may only be revealed in anger or fear. The angry outburst of well-organized criticism, rebuke, even hate may be the first indication that your friend, lover, neighbor, or co-worker has been working on the case against you for months or years. Sometimes the casemaker is just as surprised as the accused at the vehement content of an angry outburst.

The self-talking casemaker is a self-contained prosecutor making an argument to a judge who is, of course, sympathetic to his or her argument because the judge is also the prosecutor.

In the mind of the casemaker, the defendant is always guilty, and punishments satisfy the need for revenge and restitution.

I doubt there is any human alive who does not make cases against others on a daily basis. When lovers and couples fight, they usually escalate the verbal duel by recalling more and more details of the case they have been working on in silence. The advice to deal only with the current situation and not recall past grievances is well taken and counteracts the tendency to repeat and embellish the prosecution of an old case that develops for many years.

Casemaking requires language, but the tendency to hold onto past wrongs is older and might be considered one of the innate cognitive packages. We speak in terms of resentment and holding grudges. Our likes and dislikes are developed at a subconscious, non-verbal level. Aversion is a strong response to another human. Aversion is described in terms of intense dislike, hate, or disgust.

There is no single module in the brain that creates grudges but there seems to be an innate form to the whole process.

Animal and human groups keep similar accounts. At stake are prestige, access to resources, sexual privileges and safety.

A cheater or deviant in the group continues to be identified and punished by discriminatory behavior. Once you have fallen in the pecking order, it is hard to recover your social status. You are attacked if you try and the group may conspire to expel you or kill you. For many animals, the only safety lies in staying in the group and ostracism often means death.

Casemaking by recalling past threats and offenses also maintains the boundaries of the group, creating aliens who are usually not allowed into the group. Casemaking and story-telling also prime a human group into aggressive attacks on aliens. An alien is any creature, real or imaginary, who is not a member of the group.

There are antidotes to negative case making, starting with the recognition that this process is occurring and needs attention. Too much self-talk distracts from being here now and casemaking tends to promote unhappiness, hate and conflict. Meditations are designed in part to recognize, diminish and ultimately control selftalk. As an antidote, mental hygiene requires recognition that self-talk's casemaking is unwelcome and not true.

Karma, the Interactive Principle

Humans have a sense of destiny, predetermination or fate. In Tantric teachings, karma was the creative process of Shiva (Cosmic Consciousness) playing with his own energy, Shakti (Creative Principle), manifesting the forms of the universe.

Buddhist philosophy anticipated modern science more than 2500 years ago with the understanding of a continuous universe in which each event has antecedent causes and all events are linked in a meshwork of interactions. The Buddhists used the term "karma" to refer to the interaction of the mesh of causation with the mind. In common use, karma refers to the bundle of tendencies that a person manifests in a lifetime. Karma may be viewed as a natural law that causes each person to accumulate bundles of tendencies and deeds, good and bad that influence their status after birth. The best of modern scientific thinking appreciates karma as the great network of cause and effect without giving it a proper name – often called the "laws of physics" and the "laws of nature."

Karma can be appreciated in the scientific sense of cause and effect but has the extra dimension of neuronal involvement and a monitor image of events that appears in consciousness. The case has been overstated that the "laws of physics" are immutable and enduring truths. Laws are inventions and we would be more accurate if we referred to the "best descriptions for now."

Karma is such a useful idea that we need an updated version that would define karma as a continuous emergence of events in the world out there and in the mind from antecedent conditions. Mind events and world events are meshed and are indistinguishable when

you look closely, but in practical terms, a normal human brain makes a strong distinction between external events and internal events.

Recall that the main task of the bodybrainmind is to bring external and internal events into a congruent relationship, based on the life needs of the body.

An infant is born with karma – a set of antecedent conditions and innate tendencies that will help to determine the experience, identity and behavior of the child. We now attribute about half of the child's karma to his or her genes and the innate tendencies programmed by the genes into brain structure and function.

Another large chunk of karma comes from the physical environment in which a child develops. Genes and the physical environment interact to produce individuals who share common properties and who have unique differences. Parents and close relatives provide custodial support of children. Peers provide skills, language and social learning. Social karma is learned from behavior and teaching of parents, siblings, schools, peer groups and the social environment that surrounds child.

Young humans copy the speech and behavior of those they live and play with. Young humans learn how the local group does things today. All groups follow ancient tendencies but inflect these tendencies with their own costumes, rules, customs, language and technology. The term "culture" describes the local beliefs and expressions of social life which are inflections of ancient tendencies. The surface appearance of local inflections is often so distinctive that the underlying common human tendencies may be obscured. Differences in language, costumes and customs create distinctive societies that appear to the casual observer to be unrelated.

The moral sense of Karma includes cycles of causation that more or less follow the path of reward and punishment. There is no judge overseeing human transactions, but an implicit order of cause and effect. Good deeds tend to cause more good deeds; bad deeds tend to cause more bad deeds. Bad deeds tend to be punished even if the punishment is indirect and delayed. Good deeds tend to be rewarded even if the reward is indirect and delayed. Harming others tends to create a disturbance in the mind of others and in your own mind that will continue to disturb you, probably for the rest of your life.

One of the reasons that bad deeds are often punished in the end is that humans have a long memory for harm done to them, their relatives and friends. Humans have an innate sense of "justice" that involves revenge and retribution. When one person harms another, an account is established in the minds of the concerned audience and the account is long-lived; it may be passed on for generations until the account is settled. When laws are broken, police and courts take on the karmic role and hold the account to be settled.

With or without lawful processes, the karma of revenge and retribution continues to play a determining role in every society. Most humans feel that there is a natural justice that supersedes the effort made by even the most diligent and fair of justice systems. The innate form of natural justice is and eye for and eye, a tooth for a tooth.

Revenge is natural and to be effective must match the wrong that was committed. If an offender is killed for a minor offense, the killing will be perceived as excessive and wrong. Relatives and friends will want to kill the person who avenged the first offense and when they

do, a recurrent cycle of revenge is established. Human conflict has a tendency to persevere and escalate and this is a law of Karma.

The moral aspect of karma need not be metaphysics. Understanding morality requires an implicit understanding of evolutionary psychology, anthropology, and neurobiology. People, who believe that God is a kind of Santa Claus who keeps a list of who is naughty and who is nice and distributes gifts and punishments accordingly, will have a hard time understanding that there is no need for a referee or scorekeeper out there. The scorekeeper is in the head of every human. The scorekeeper is also in the minds of other animals and the processes of planet earth. In a non-moralistic way, the earth keeps track of how much fossil fuel has been burned and responds to the Sunday afternoon drive in the shiny new sports vehicle with a destructive tornado that plucks the 100-year-old oak tree out of the ground and lands it on the cab of the new vehicle.

The wrath of nature has long been viewed as a moral force punishing wrongdoing and as an instrument of a vengeful god or gods. Planet Earth can be appreciated as the stage for a recurrent drama involving many players in a tight, interactive play. There is no overseer, but there is a continuous sequence of causes and effects. The human decision to buy and drive the red sports vehicle will send signals through the planetary system and some of those signals will return, transformed with consequences. The sequence could be simplified as: the decision to buy and drive the car, burn more gas produces more carbon and nitrous dioxides, which retain more heat in the atmosphere, add more energy to the storm; a tornado forms, travels, uproots the tree and smashes the car….

Emotions are Social Behaviors

Behavior in human groups is regulated by displays of status, intentions, body states, needs and distress. Emotions are obvious behavioral displays that add dynamics to human interactions. Emotions put animals and people in motion and emotional behaviors are body language communications among all animals. Emotions can be read with little or no learning and from a distance. The face is the bulletin board of emotions, complemented by head movements, arm and hand gestures.

The emotion is the outside part and feelings are the inside part of brain activity that links a human with other creatures. Feelings are inner body-mind states that are sometimes linked to emotions. The briefly popular discovery of "emotional intelligence" revealed a fundamental misunderstanding of the human mind. Emotions are ancient strategies of social regulation. Intelligence is built from and on top of emotions. Emotions are not a side issue to be tacked on when reading and writing fail to achieve desired goals in education. Emotions come before and go beyond the cognitive abilities that are considered to be important in schools.

You could argue that schools are artificial societies that isolate individuals, disturb and distort the natural flow of group processes that are the basis of human intelligence; this is perhaps why "emotional intelligence" was re-discovered in America as if it were a new dimension of the human experience.

The primary emotions are dyads: fear and contentment, pleasure and pain, affection and anger, crying and laughing, joy and terror, surprise and disgust. Crying and laughing are not usually considered emotions, but should be.

Indeed, these highly communicative behaviors are prototypes of emotion. Laughing and crying are the most demonstrative of emotional behaviors. The simplest case suggests that we laugh when we are happy and cry when we are sad. But laughter and crying are not so simple. These behaviors are versatile and are utilized by different, even contradictory programs. Humans can cry when they are happy and laugh when they are afraid. Children who are unsure about what is happening may go through a series of emotions in rapid succession.

A tentative smile becomes a grimace, becomes a hesitant laugh that becomes a flood of tears if the right reassurance is not forthcoming.

Laughter is associated with humor. Humans will laugh when a story is truly funny but are more likely to laugh to relieve tension and as a gesture of group cohesion. Laughing, like yawning, is contagious. Humor (or what passes as humor) is often aggressive, insulting or distasteful. As long as you keep laughing, aggression is not so threatening, but if the storyteller goes too far with his or her insults, the laughter stops and is replaced by indignation or anger.

People who like each other generally smile on sight and laugh easily if they stop and talk. Smiling usually means you want everything to be congenial, but there are exceptions. An embarrassed person may smile awkwardly in an effort to avoid criticism or rebuke. The wicked witch may smile sweetly as she invites you in for tea. The skilled interrogator may smile in friendly manner while describing the painful consequences of not telling him the whole truth; his smile suggests that he can be your friend, if only you would cooperate.

Crying can be a discrete display of tears or a dramatic social event with loud sobbing, cries and wailing. Dramatic crying is designed to stop business as usual and usually the crier gets the attention they need to feel better. There is a curious need for some sadness and most crying to be concealed from public view. Boys are taught that real men do not cry and girls, despite a more permissive license to cry, remain shy to cry in front of strangers. Crying is a display of helplessness and vulnerability, intended to alert the people who care about you and can help. Crying in front of strangers, especially a large group of strangers may attract the wrong response from people who will try to exploit your vulnerability. Crying is an effective display only if it unusual. A repeat crier will often be shunned or scorned by the same group that initially offered comfort. Most parents have a high tolerance for their own children's repeated crying, but most kids learn quickly that that the same tolerance may not be offered by other adults.

Feelings are conscious experiences that are real and important but have the elusive quality of all inside experiences. Only I experience my feelings. Humans recognize that others have feelings by watching behavior and listening to descriptions of what it feels like inside.

Feelings are also monitor images of body states. Humans often

cannot localize the source or the effects of their feelings and tend to blame others whenever they are not feeling well. Humans tend to become emotional when they are not doing well. Drives are linked to feelings but not necessarily linked to emotions. Hunger is a primary feeling as is thirst.

Humans are usually tuned into the feelings of other people and will often pick up subtle signals that that are not conscious or explicit. Hip people take about “vibes”; psychics see auras and ordinary folk have hunches, intuitions or just "feel" the body language of others. Humans might meet a new person and walk away saying “I don’t know what it was… but I didn’t feel comfortable talking to that man.”

Feelings are evanescent and can change abruptly. Criticism, an angry remark or an insult can switch a happy person to an angry person in seconds. An overly sensitive person may walk away from an argument in deep despair and may want to die. Drastic “thinking” is common.

Pessimistic, sometimes nihilistic thoughts are attached to this ancient feeling of dread; the occasion is always some threat to your status in a social group.

Meditation and Epistemology

In Europe and its colonies, philosophers, poets and writers were said to contemplate, think, reason, reflect, introspect and understand. This approach to epistemology is not well defined and the processes used by 'great thinkers" are generally not known or are misunderstood. Ancient Asian philosophies, on the other, were focused on that nature of the mind and examined consciousness in detail.

Cognitive sciences inherited the limitations of European philosophers and for many years no one would speak of meditation and consciousness was an unwelcome topic. We usually experience "great thinkers' by reading their books. Members of the philosophy departments at university will point to books and journal papers as evidence of the thought process and will cite intelligent argument or "reason" as the indispensable tool of philosophy.

Meditations are not considered to be indispensable tools and methods of the philosophical process. The casual or accidental meditator has insights while walking in a forest, sitting on a beach or talking to colleagues. Knowledge is a collage of facts, opinions and beliefs.

Insight into covert mind processes may be limited or lacking. Confusion is routine when you ask" "what is conscious and intentional?" or "what is the innate and spontaneous activity of the bodymindbrain?"

The practice of meditation is based on a fundamental disinterest in language and leads to ineffable experiences and away from membership in the local group. The term "Mystic" should not suggest an impractical practitioner of occult arts, but rather the ultimate philosopher-scientist who is willing to go beyond local preconceptions and deal directly with the mesh of experience with all its ongoing complexity. Deviation from the social norm, creativity and innovation go together. The Buddha manifests his identity as a professional philosopher by sitting upright in the lotus position, poised, calm and alert.

The lotus position is stable and can be maintained for hours. The Buddha has a gentle smile and his philosophical work looks effortless and natural.

The Buddha required no books, wrote no books and said nothing. He studied the processes of his own mind and focused on being present in the world. His PhD thesis required seven years sitting under the Bo tree, loyal to this basic technique.

The Buddha examined self-talk and all the other spontaneously arising contents of mind.

The Buddha discovered the reactive aspects of mind and the manifestations of desire. He discovered the constant contest between self-interest and generosity. He explored the possibilities of pride, greed, criticism, anger and hate. He explored the illusions of self. He revealed the truth of spacetime as a ceaseless and integral flow of events. He discovered the meshiness of events. All events are interconnected, an endless chain of cause and effect; without beginning and without a foreseeable end. He found compassion for all sentient beings caught in Samsara, the self-regenerating mind states known as needs, desires, passions, confusions, conflicts and impermanence. He discovered the way out of Samsara: enlightenment.

Even if we do not know exactly what enlightenment means, we all have a glimmer of hope that there is a state of grace available to us characterized by peace, happiness and profound understanding. The Buddha's path does not point you to a university degree, a career, a conference on the nature of the really real, an investment, or an expensive house as way stations or destinations on the path toward enlightenment.

The Buddha's path directs you toward disengagement from goal-oriented activities so that you can explore your own mind, develop insight into the really real and emerge with equanimity and compassion. Much of the work on the path is solitary and has little or no outward manifestation. To members of an action-oriented, hedonistic, consumer society, nothing is going on. The path toward enlightenment is a non-event and boring.

We can develop a sketch of how a highly developed mind might work and refer to an ideal or enlightened mind. The enlightened mind sees all, knows all, and identifies with none of the local conditions that would limit knowledge and understanding.

The enlightened mind creates the best conditions for the greatest insight, understanding and greatest opportunity to experience rapture. The enlightened mind recognizes the interrelationship of all living beings cherishes life and treats others with tolerance and compassion. The enlightened mind thrives in the natural world and never kills other sentient beings.

Surviving Human Nature

We are developing an understanding how humans have moved from the primordial existence of humans in nature, living in small groups to a social existence that involves living in enlarging cities that are part of larger economic and political organizations. Social organization appears to be basic to animal life. Coherent organization is achieved by a metabrain, tens to millions of individual brains coordinated in a network of interacting individuals. One of the functions of social organization is the distribution of individuals in spacetime and the regulation of their interactions. Large international meta-networks are new, unproven innovations in human social organization that may be doomed to fail since the human brain has limited capacity to understand and participate in anonymous systems.

Students of world affairs will have little difficulty identifying recurrent problems in the conduct of business and governments and the interaction of countries. History records the tedious and repetitious details of competition, conflict and destruction on an ever-enlarging scale.

The tendency in most academic and media discussions is to relate current events and then explain the causes of events in terms of local conditions. You can argue that none of the academic systems of commentary on human events such as history, economics, sociology, and political science really explain what is going on.

Human nature is the substrate for all events and human action tends be monotonously recurrent. The innate rules of association built into our brain pertain to small groups and tend to become dysfunctional when individuals try to relate as members of large and anonymous

groups. Groups of less than 150 members can self-regulate using innate behaviors that have evolved over tens of millions of years. As groups grow larger, humans require regulation using a system of rules and physical constraints that are an external form of behavior coding. The external behavioral coding requires systems of enforcement, capture, judgment and punishment of individuals who break the rules. The external system is ephemeral and must be renewed continuously.

Rules and regulations increase in scope and complexity as populations increase in size and density. No single human can know let alone obey all the rules of a modern society.

One confusion arises when we believe an idealistic proposition that progress is being made toward a more rational and consistent world. The evidence for a more rational world is limited to specific places for limited periods of time. I live in a well-organized and pleasant community. I understand that the privilege of living well is limited in time and space. My privileges could be suspended at any moment by any number of events natural and man-made.

A realistic appraisal of human events must consider that enlarging populations lose self-regulation and routinely become ungovernable at specific times and places. The history of civilization is characterized by recurrent cycles featuring the growth of cities and empires and their dissolution through natural disasters, drought, famine, war, disease and the excesses of tyranny. These cycles are also manifest in individual lives and have similar patterns on a miniature scale.

The idealist may fantasize egalitarian societies that coexist peacefully and honor universal rules of human rights. However, humans have a deep tendency to form groups, to develop and defend boundaries and to treat outsiders as enemies. This tendency is expressed in every aspect of human life and dominates the modern world despite concerted attempts to modify this tendency and create just societies. All groups have interests, privileges and costs of membership. All groups have hierarchies and competition for privilege and prestige.

Every effort to create tolerance and an ideal, egalitarian state encounters these deep, adverse tendencies and probably will never achieve stable and enduring societies.

The view that the good and the bad are products of a society is now yielding to the deeper insight that the dialectical nature of the human mind is built it; this dialectic generates culture, not the other way around. A well-meaning coalition of humans in Vancouver, for example, held a rally to "eliminate racial discrimination". Their premise was that racial discrimination is a learned behavior and can be eliminated by social policy and education. Human history overwhelmingly contradicts this idealistic notion. Discrimination is an essential feature of the human mind and is not going to disappear.

A more realistic philosophy of human life emerges as we recognize that it is impossible to permanently change human nature by social and political means, by education, persuasion, coercion and law. The practical question that continues to face policymakers is how much external regulation and what kind is required. As the numbers of humans increase and larger numbers live oppressed, in poverty with little hope, the need for external regulation will increase, but no-one knows how to manage such large numbers of unhappy humans.

The 20th Century was the century of human proliferation and domination of planet earth. Human activities became all pervasive. Human construction and destruction replaced the natural world in all habitable regions of the planet. Humans fought wars, experimented with different social, political and economic models.

Humans survived natural disasters, ruthless dictators, economic adversity and American-Russian roulette, the game of mutually assured destruction with hydrogen bombs. However, the bombs have not gone away and the threat of widespread destruction will recur unless a new level of cognitive effort is successful in creating a more rational and compassionate world with enforceable laws.

Despite advances in science and technology, humans have not achieved sustainable levels of population, food and energy production. Infrastructures are temporary and vulnerable. Political and economic systems are limited by the obvious cognitive limitations of the individuals and small groups who run them. Human conflicts and killings are deeply troubling but at the same time, much was accomplished in reaching for a sustainable, good life for some privileged humans. The rapid development of science, communications and culture exchange is unprecedented in the history of the planet. The smart, kind-hearted subtype of humans flourished despite the persistent presence of crude-thinkers and killers.

Smart kind-hearts developed powerful tools of communication to shape the future in a constructive manner. Well-motivated humans have experimented with international coalitions to support universal human rights, education, to fight disease and end poverty. Smart kind hearts have dreamed of a benevolent world government.

Human rights have been advanced as a universal ideal, but smart humans understand that persistent and unreasonable conflict is characteristic of their species. They understood that humans are changing the global climate and causing mass extinction of other creatures by destroying natural habitats worldwide. Human rights cannot be disconnected from animal rights and plant rights.

The character of the 21st century will be dominated by unsustainable population growth and migration, conflict, climate change, accompanied by shifts in wealth, power and influence. Recurrent human conflicts appear to be inevitable and challenge the most intelligent humans who imagine relief from a long history of the human abuse of humans. More humans have become better informed, more realistic and more deliberate in their analysis of human affairs. Others remain ignorant and do not understand how things actually work. Many remain both ignorant and belligerent.

You can argue that human rights and lawful conduct are obvious and desirable goals, but in practice, humans are critical, argumentative, and competitive; they cannot agree on a universal definition of rights and lawful conduct. Humans can no longer rely on outdated social, religious and economic ideologies based on misunderstandings of human nature, human history and planet ecology. They have to think themselves out of dangerous predicaments and they need new ideas of social organization. Each new human that arrives on the planet has to transcend innate behaviors that are self-destructive and harmful to their species and all other species. Humans have to re-examine what they care about and advance new vocabularies that allow them to proceed into new domains of thought and understanding.

The Philosophy & Psychology Project

The Philosophy & Psychology Project was developed by Persona Digital Publications, a division of Environmed Research. The foundation text, **Book of Existence and the Human Mind**, by Stephen Gislason was first published in 2005. A series of excerpts and adaptations of the "big book" was initiated in 2006 with the goal of making popular topics more accessible to potential readers in printed book and eBook formats.

The current book list:

Emotions and Feelings
I and Thou
Intelligence and Learning
Language and Thinking
Neuroscience Notes
Human Nature
The Human Brain
Children and Family
The Sound of Music
Surviving Human Nature

Philosophy & Psychology Project

My intention as a writer is to describe important ideas that I have encountered. I avoid polemics but consider different points of view. I am contributing to a common language of understanding that transcends professional and academic boundaries. I want to contribute to the education of students and scholars everywhere by offering an approach to a "philosophical psychology" that embraces many disciplines. I began writing about the study of the human mind over 40 years ago and filled notebooks with notes, diagrams, pictures and quotations from erudite thinkers who encouraged me and guided me with their articles and books. Along the way, I have written practical medical books for patient education.

My initial plan was to outline the main features of human nature. These were sketches for more in-depth investigations to follow. As in movie making, you start with a long shot to orient your audience and then zoom in with close-ups as you continue your story. I also have the structure of a symphony in mind. A composer travels through different subjects, moods and tempos as the symphony progresses. The main themes of a symphony are developed in the introduction and then reiterated in subsequent movements with further development and variations. I found Stephen Gould's description of his writing efforts to be compatible with my own point of view. Gould stated: "I believed, as almost all scientists do …that nature speaks directly to unprejudiced observers, and that accessible writing for nonscientists therefore required clarity, suppression of professional jargon, and an ability to convey the excitement of fascinating facts and interesting theories…I managed to formulate two personal precepts: first, I would try to portray all subjects at the same conceptual depth that I would utilize in professional articles; second, I would use my humanistic and historical interests as a "user-friendly" bridge to bring readers into the accessible world of science… I have tried to expand my humanistic "take" upon science and fuse the literary essay and the scientific article into something that might transcend parochial disciplinary divisions for the benefit of both domains (science, because honorable personal expression by competent writers can't ever hurt; and composition, because the thrill of nature's factuality should not be excluded from the realm of our literary efforts)."

I am a Canadian. I enjoy a privileged lifestyle in an attractive community, close to nature. Canada is a secular, multicultural society that tends toward humanitarian and liberal social policies. Positive features of Canadian society are the generous provision of social services, universal health care, free public education, unemployment insurance, and assistance for those in need. Canada has had a permissive immigration policy and readily accepted immigrants from all other countries in the world. Three of the most ethnically diverse cities in the world are Canada's largest cities, Toronto, Montreal and Vancouver. Tolerance for racial and ethnic diversity is high in Canada. For seven consecutive years, the United Nations Human Development report ranked Canada as the best country on planet earth to live. The UN survey ranks 174 nations according to how well people live, looking at health care life expectancy, income and education. In 1999, the best countries were Canada, Norway, USA, Japan, Belgium, Sweden, Australia, the Netherlands, Iceland, Britain, France, Switzerland, Finland, Germany, Denmark, Austria, Luxemburg, New Zealand, Italy and Ireland. These countries share common features that all humans can admire and emulate. This is not to argue that Canada is a perfect society since social perfection does not appear to be feasible. In 2001 Canada dropped below Norway and Australia in the UN's best country rankings.

As a scientist-philosopher, I have many vantage points. My writing sustained over several decades, integrates diverse points of view and different styles of expression. I allow my vantage point to shift from a detached observer viewing planet earth from the safety of distant space to an intimate and personal discussion of what life is like for me on a daily basis. I refer to members of our species as "humans." I was taught that the proper term was "human being," but however interesting the "being" part is, I prefer just "human" as the noun and adjective. Often, I am describing a physician's point of view since I spent 30 years serving in that role. Sometimes I am a visiting anthropologist making notes in a West Vancouver café. At other times, I am concerned about the confusions and misunderstandings common among my friends, co-workers and patients. At other times, I am a paleontologist or evolutionary psychologist, imagining what life was like on planet earth 100 million years ago or what humans were like 50,000 years ago. Sometimes I am a free spirit, a mystic, wandering this planet alone without profession or social status, an animal among animals, in love with nature and the primal feel of existence.