Philosophy

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Can Information Philosophy

Value

Is the Good something that exists in the world? Existentialists thought not. They thought we have freedom, but saw freedom as *absurd*, because there are no values to help choose. Without values, no evaluations. Most religions place the origin of good in a supernatural Being. Existentialists denied that Being. "God is dead," they said, and thus denied any essential objective Good.

The traditional source of normative values, of morality, of ethics, of what one "ought to do," has been religion. It is often said that science, the empirical study of the natural world, cannot possibly help us to define the good. DAVID HUME is often cited as saying we cannot derive "Ought" from "Is." This is sometimes called the "fact/value" dichotomy. Science, it is said, can help us to do what we decide to do. It can help with prudential or instrumental decisions about "means," but not with moral decisions that depend on the intrinsic value of "ends."

It is difficult to generalize about the thousands of religions invented over the ages by their prophets and founders, but most include a code of moral behavior. Some founders told their followers that they had simply discovered the correct moral codes. Some prophets claim to have been explicitly told the "truth" about good and evil in a conversation with God, or by a mystical vision. With founders and prophets mostly long gone today, moral codes are typically handed down by various traditions.

The power of the institutions that has grown up around world religions lies entirely in their ability to limit the knowledge of their members to their beliefs about the "truth." Where these traditions vary in their beliefs, and they do disagree in fundamental ways, they cannot possibly all be right, unless all cultural beliefs are relative, which they may well be at the present time.

Humanists think that good and evil are human inventions, that value systems are relative to a local community or society. "Man is the measure of all things." Comparative ethics is the study of disparate value systems in the hope of finding come commonly held

rules, for which one can claim some universal or objective significance, for example, the golden rule, "Do unto others" or commandments like "Thou shall not kill." Some philosophers make human life an objective good. Some make one own's life the ultimate good. Some think the good is the maximization of pleasure, or happiness, or well-being, for all humans (or maybe just one own's family, tribe, community, or nation?),

Modern bioethicists hope to avoid all this relativism by situating value in all life, seeing humanism as short-sighted, if generalized, self-interest. A variety of ancient religions looked to the Sun as the sustainer of all life and thus found an objective good outside of human life. They anthropomorphized the sun or the "bright sky" as God. Dark and night were stigmatized as evil and "fallen." Echoes of these ancient views persist in our metaphors of light, of enlightenment, as good.

Philosophers have ever longed to discover a cosmic good. The ideal source of a cosmic good is perhaps as remote as possible from the Earth in space and as distant in time. Many theologians and philosophers think it must be "outside space and time." For PLATO, it was a timeless Good to be found in Being itself. For his student ARISTOTLE, it was a property of the first principles that set the world in motion. For KANT, it was a transcendental and "noumenal" God outside the everyday "phenomenal" world of experience.

Information philosophy has found that the story of human evolution does not start with DARWIN and DNA. It starts much, much earlier, at the very beginning of the universe. For those of you thinking that your origins and place in the universe might be found outside of animal evolution, beyond a mere material explanation, you might be happy to learn that your most distant beginning was in the primeval formation of *immaterial*, abstract information, a kind of metaphysical spirituality you can tie directly to the information content of your innermost thoughts.

Has information philosophy discovered the cosmic good? Does it at least identify the prerequisite source of anything resembling

the Good? Yes, it does. Does it resemble the Good anthropomorphized as a God personally concerned about our individual goods? No, it does not. But it has one outstanding characteristic of such a God. It is *Providence*. Information philosophy has discovered the fundamental process in the universe that provides for our well-being. It provides the light, it provides life, it provides intelligence. For all of these things, should we not be thankful and reverent toward such a creative process, attitudes humans normally feel towards a providential god?

Information philosophy replaces the difficult problem of "Does God exist?" with the more tractable problem "Does Goodness exist?" Humanists situate values in reason or human nature. Bioethicists seek to move the source of goodness to the biosphere. Life becomes the *summum bonum*. Information philosophers look out to the universe as a whole, beyond the obviously beneficent Sun to find a cosmos that grew from a chaos. The growth of that cosmos continues today, in a cosmic creative process that formed the galaxies, stars, and planets, that led to life and then to the evolution of the information-processing minds that created language and logic. It is this process that we propose creates objective value.

Exactly how that is possible requires a subtle understanding of the second law of thermodynamics in an expanding and open universe. The second law is the tendency of isolated systems to become more disorderly, to increase the "entropy," a quantitative measure of disorder. When entropy increases in a closed system, information is destroyed irreversibly.[1]

A very small number of processes that we call *ergodic* can reduce the entropy locally to create macroscopic information structures like stars and planets as well as microscopic ones like atoms and molecules. And most important to human beings, this creative process is not only responsible for our existence, it has made us creative individuals in its own image! In what sense? It is that we are creative beings. We are co-creators of the world we live in, wielding a power to create, for better or for worse, that is unparalleled in the history of the world.

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1   See appendix B for entropy flows in the universe.

Every living thing is an information processor and communicator. But the handling of information suggests four different levels of processing among the animals - instinctive, learning, predictive, and normative (reflective).

• The lowest organisms are created with a fixed amount of information that is essentially constant their entire lives. Their behavioral repertoire is almost completely instinctive. They have little or no learning capability. Their automatic reactions to environmental conditions are "built in," transmitted genetically. Information about past experiences (by prior generations of the organism) is only present implicitly in those inherited reactions.

• Animals with a learning capability can acquire new information during their lifetimes. Their past experiences condition their current choices. Mostly habitual reactions are developed through experience, including instruction by parents and peers.

• The ability to predict the future evolved in animals with an *experience recorder and reproducer* (ERR) that can play back beyond the current situation. These animals have foresight and imagination that help them evaluate the future consequences of their choices. They can generate *alternative possibilities* for future actions, based on the playback of multiple past experiences in similar situations.

• Normative information appears in human societies that have externalized and codified their past social experiences. Future actions are evaluated based in part on ideas about the past, in addition to the individual's actual experiences. Conscious deliberation about community and universal values influences the choice of behaviors.

All four levels are *emergent*,[2] in the sense that they did not exist in the lower, earlier levels of biological evolution. The emergence of human beings also marks the emergence of information and information processing that is going on outside of biological organisms. The storage and retrieval of information in the form of writing, then printing, and now the world-wide web, has enabled the transmission of knowledge to leap over vast distances in space and time.

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2   See chapter 27 on emergence.

Francis Bacon saw clearly that knowledge is power. Information philosophy defines knowledge as information that has meaning[3] for humans, in the sense that it expands the possible alternative actions to let us choose the best means to achieve our ends. The power of this knowledge is shown in the exponential growth of humanity on the planet. A mere ten thousand years ago the biomass of humans and their domesticated animals was less than one percent of the biomass of terrestrial vertebrates. Today it is near ninety percent. Humans have taken over the planet.

The *Sum* of human knowledge will soon be accessible to anyone in the world with a tablet computer or smartphone. We estimate this will be nearly the entire human population by the year 2020. If this comes to be the case, there is an opportunity to expose young children to the most universal of human values, perhaps before they have been indoctrinated by their local cultural values.

This will be vehemently opposed by conservative governments and fundamentalist religious forces whose hold on power depends on keeping young minds closed to "outside" ideas.

A battle rages between cosmic ergodic processes and chaotic entropic processes that destroy structure and information. Anthropomorphizing these processes as good and evil gives us a dualist image that nicely solves the monotheistic problem of evil." If God is the Good, God is not responsible for the Evil. Instead, we can clearly see an impersonal *Ergod* behind *Providence* – the cosmic source without which we would not exist and so a proper object of our reverence. And Entropy is the "devil incarnate," as Norbert Wiener described it.

The fundamental moral guide to action found in information philosophy is then very simple – when faced with a moral dilemma, we ought to choose to preserve information structures against the entropy. Beyond moral standards, the discovery of a cosmic source of value suggests a basis for societal and legal norms.

Celebrating the first modern philosopher, René Descartes, we call our model for value the *Ergo*. For those who might want to anthropomorphize on the slender thread of discovering a natural

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3   See chapter 11 on meaning.

Providence, call it *Ergod*. No God can be God without being Ergodic, standing in opposition to forces of darkness and destruction.

Ergodic processes are those that resist the terrible and universal Second Law of Thermodynamics, which commands the increase of chaos and entropy (disorder). Without violating the inviolable second law overall, ergodic processes reduce the entropy locally, producing pockets of cosmos and negative entropy (order and information-rich structures). *Ergo* is the ultimate *sine qua non*.

The idea of a moral science has a long history. John Stuart Mill's Logic of the Moral Sciences was a major influence. Translated into German as *Geisteswissenschaft*, or science of the spirit, Mill's "moral science" was then back-translated into English as the Human Sciences or what has become the humanities in today's universities. Of course, David Hume and his great English colleague, Adam Smith, a hundred years before Mill, had given us great insights into what they saw as "natural" moral sentiments or feelings. Hume thought he could make a science of human nature based on laws as definite as Isaac Newton's laws of motion. But this was to be a failure.

Maybe so, but we believe a moral society should be and can be informed by the best scientific knowledge about human origins, human capacities, and our current status in the universe.

An Information-based Moral Code?

The first rule of an information-based morality is that all choices should be made so as to minimize the destruction of abstract information and concrete information structures. All natural processes increase the entropy. A very few (life, gravitation) decrease the entropy locally. These we call *ergodic*. In principle, one should calculate the entropy increase and the negative entropy gain for each choice and maximize production and preservation of information.

Because abstract information can be duplicated and disseminated at near-zero cost in the information age ("information wants to be free"), our second rule is that we should share all information (our knowledge *Sum*) to the maximum possible extent. Practically, this means nourishing and educating all the world's children, especially

the females, who are more likely to assist in this project of nourishing and education than are the males.

By contrast, a concrete "information structure," or "wealth" in the form of low-entropy information-rich matter and energy, is subject to the laws of economic scarcity. The natural distribution of wealth and income among individuals follows statistics like Pareto's "80/20" rule, where the largest percentage of wealth is "normally" concentrated in a minority of the population.

Some inequality is the unavoidable consequence of the "normal" distribution of human intelligence and capability due to chance. It is also the avoidable consequence of the historically random distribution of opportunity, including the inheritance of material property. Redistribution of wealth through a progressive taxation system is the means to regulate income and wealth inequality to a societally acceptable norm that allows even the least capable humans to exercise their creative freedom to their limits.

A Minimum Moral/Political Message?

Information philosophy has established that every human being is uniquely capable of creating new information. This includes the abstract ideas of our ancestors that have become the Sum of human knowledge. It also includes the creation of concrete information structures which add to the stock of material wealth, although material objects are subject to the laws of economic scarcity. From this, we can formulate our basic insight into human freedom and creativity,

Thoughts Are Free, Actions Are Willed, Self-Determined,

Limited Only by Creative Control Over Matter and Energy.

Everything we know and much of the material value that we enjoy today is the product of past and present creative human beings. It is therefore of vital interest, a core value, for human society to protect that free creative power for everyone.

We can say it is in the interest of future society that every human being should have the right to exercise their ergodic freedom to create new ideas to the maximum of their individual potential.

This right requires a minimum standard of well-being and education, and a minimum of constraints on self-expression so society can hear those new ideas.

The right to exercise this creative freedom comes with a responsibility, an obligation to protect that freedom and opportunity for others, and to see that the fruits of that creativity are distributed as fairly as possible to all humanity, while preserving adequate property rights for the creator.

This is a kind of freedom that some philosophers have only dreamed of. Sadly, many more have denied this creative freedom as logically or physically impossible. We are finite beings, they say, compared to the infinite powers that they mistakenly imagine are in charge. It is their own limited imaginations that have sadly embraced the idea of such infinite powers.

The fact is that human beings are the universe's highest form of pure information creator, a natural outgrowth of the universe's cosmic creative process. Humans are inferior to the cosmic process in its power over useful matter and energy. That is the providential gift of the negative entropy or *Ergo* in the form of incoming solar radiation. But humans are superior to the cosmic process as the creators of ideas. Ideas are *immaterial*, potentially *immortal* if added to the *Sum* of human knowledge.

Additions to human knowledge mean that the lives of our descendants will almost always be richer and fuller than those of our ancestors, both materially and spiritually. As ALBERT EINSTEIN knew, it is our ideas that let us comprehend the almost incomprehensible nature of the universe.

Unfortunately, as the material wealth and overall well-being of humanity has greatly increased, and world poverty is nearing elimination, there is also an increase in *anomie*. As agricultural and industrial productivity has soared, without the need to struggle every day to provide our livelihood, we may face the danger of a life of leisure that lacks a sense of meaningful purpose.

Beyond individual, family, tribe, and nation, can we develop the sense of a universal *telos,* understanding why we live, love, and die?[4]

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4   See the end of chapter 28 on the origins of information and life.

An Information-based Social Contract?

With reference to past declarations of human rights, the discovery of a universal and objective standard of value by information philosophy suggests the following elements of a universal social contract, to be accepted by individuals reaching the age of consent, in order to have full participation in society.

As a person coming of age in human society, I freely consent to the following limits on my natural free agency, in order to preserve a more perfect society.

As I seek maximum freedom and opportunity for myself, I will protect equal freedom and opportunity for all other human beings.

As I am free to think whatever thoughts come to my mind, my self-determined actions will be responsible, limited only by the equal rights of others.

As I seek to gain my maximum allowable share of economic wealth and personal well-being, I will do my best to help others earn their own maximal shares.

As I seek to acquire the knowledge that will ensure my own future well-being, I will help disseminate that knowledge to the world, insofar as knowledge is our common human creation and inheritance from our ancestors, and since the cosmic creation process provides more than enough negative entropy for everyone.

I will do nothing to others, nor advocate such things, that I do not expect would be done to me in similar circumstances, according to the laws of society. Liberty consists of doing anything which does not harm others.

I respect the limited protection of an individual's right to their created intellectual and material property, but eventually some ideas become common property. These include the laws that govern our social behaviors. Laws should forbid only actions harmful to society. Anything which is not forbidden by law should not be prevented.

All persons can contribute personally or through their representatives to the formation of the laws. Laws must be the same for all, either as they protect, or as they punish.

All persons, being equal in the eyes of the law, are equally admissible to all public places and employments, according to their capacity and without distinction other than that of their virtues and of their talents.

Since the laws are our common property, I will not use my financial or political power to change those laws in order to advance my own personal cause, or that of my family, my business, my community, not even my nation. My power to change the laws I will limit to my powers of persuasion and my power through the ballot box to approve legislation.

I will respect the right of others to hold and to express conflicting beliefs. But I will not impose my beliefs on others, for example, by insisting they be encoded as laws of society. I will not allow others to impose their own beliefs on me, other than by their powers of public persuasion.

My right to think freely and to determine my own actions means that I take responsibility for them, and will accept punishment for my illegal acts which harm others.

No one can be punished except under a law approved by the legislature, with information about the law published before the fact of any particular offending action.

Punishment may include incarceration to prevent further physical harm to others. Government has a monopoly on the use of force to prevent illegal behavior, because it is necessary for the common good. But that force must be only that necessary and must minimize harm to the offending person.

A person is presumed innocent until proven guilty, but if arrested for cause, does not have the right to resist arrest by authorities. Resistance is itself illegal. However, if the arrest is found to have been unjustifiable, a person is deserving of appropriate compensation for the harm, the loss of abstract freedom, and possibly loss of material value such as wages.

No one should face arrest for an act that does no physical harm or dangerously threaten such harm to others. No law should prevent behavior simply because others find that behavior objectionable.

No form of speech expressing unpopular opinions, however harmful to the feelings of others, shall be cause for arrest.

Information and Negative Entropy as Objective Values

Perhaps the most radical suggestion of information philosophy is the idea that the negative entropy flows in the universe - which make possible the creation of all passive information structures as well as dynamic, interactive, purposeful living things - should be considered as an objective basis for the concept of value.

The Nobel-prize-winning economist Nicolas Georgescu-Roegen once proposed negative entropy as the ultimate source of all economic value.[5] Information philosophy agrees.

Critics may complain that there can be no single criterion for the good, that any tool can be both harmful and helpful, we ask them to look deeper.

A knife in the hands of a surgeon can save a life, in the hands of a killer take one. But just look at the information implications to judge the moral value of this example. Consider the evil in a single thermonuclear weapon, which can destroy information structures faster and more thoroughly than any other human invention. How can we have built and maintain thousands of these devices, each one capable of destroying all the lives in one of the world's largest cities?

Imagine a panel of ethicists choosing the better alternative in cases of moral dilemmas. Then imagine a panel of scientists calculating the increase in entropy (destructive disorder) versus the preservation of information (negative entropy) in each case. We suggest there would be a high correlation between moralists and scientists on the better alternative.

For centuries, values were considered a theological question, something given to humanity. Then humanists began to make human life the ultimate basis. Some philosophers assign infinite worth to each life, to block any comparative worth analysis.

In recent decades, bioethics has shifted the locus of values to the earth's biosphere and beyond to the overall environment.

Information philosophy hopes to enlarge the sphere of ethics to the cosmos itself, where the process of information creation appears as a sort of divine *providence*.

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5   *The Entropy Law and the Economic Process*, Harvard, 1971.