The purpose of my presentation today is to discuss the concept of negentropy expressed by Nicolaus of Cusa in his book “On the Vision of God,” so that we might better master the ideas necessary to reverse the entropy which will otherwise engulf America by the year 2000, if not earlier.

In a recent paper entitled “The Challenge for the Human Race: A Mission Task Orientation to Develop Science Beyond Its Current Limits,” Lyndon H. LaRouche, Jr. wrote:

I suggest that we look at the famous work by Nicolaus of Cusa, his “On the Vision of God.” Cusanus reaches the same definition of what I have called negentropy as I defined in 1952. That is, the notion, for example, in an economic process, that a viable economic process is one in which the per capita and per hectare or per square kilometer energy of the system, that is, of the economic social reproductive system, is increasing, but that at the same time, the relative free energy to energy of the system, is also increasing. That kind of system, and organizations which correspond to that kind of system, are what I term as the phenomena to which the term negentropy is properly applied, rejecting the definition of negentropy which is derived from the negative H-theorem, that is, from the Boltzmann conception of negative entropy.

LaRouche continues:

So throw out negative entropy as a definition of the phenomenon to which the term negentropy is often applied, and go to the biological definition of the phenomenon of life, what we mean by the difference between living and non-living processes defines for us the difference between what we call negentropic and entropic phenomena. The term entropy and the term negentropy, should be regarded as attempts to supply terms which we would then seek to explain, for the difference between living and dying or dead processes.
LaRouche concludes:

In “On the Vision of God,” Cusanus outlines a development of species in this way, that essentially if one were to describe what Cusanus is saying in “On the Vision of God,” one would say that he is defining species, or a succession of species, which are distinguished in their succession, by an increase of the energy of the system per individual and in respect to nature per capita, per square kilometer or per hectare while at the same time the ratio of free energy to energy of the system, is being increased. That is what the Periodic Table describes. That is essentially what all living processes describe. And that is essentially the key to the difference between living and non-living processes.

The notion that the universe is characterized by the principle of maximization of entropy based on the First and Second Laws of Thermodynamics, and that any apparent exception to this principle referred to as negative entropy ultimately results in an increase in entropy, is a pseudo-scientific conception, which if it becomes dominant in the thinking of any society, as it has become in large part today, results necessarily in the death of that society due to its inability to increase its potential relative population density.

The increase in potential relative population density which the human species has experienced as a result of the Council of Florence in 1439-40, is directly attributable to the opposing, actually scientific view that the universe is characterized by a principle of negentropy, and that man as the highest expression of the negentropic development of the universe is capable of continuing the creative development of the universe insomuch as he is in the living image of God.

The neo-Malthusians view this increase in potential relative population density as negative entropy, that is, as a violation of the principle of entropy. According to their view the world’s population must be reduced and industrial development curbed not in order to prevent the entropic exhaustion and death of the universe, which they regard as inevitable, but merely to postpone it. Theirs is not a culture of life, but rather a culture of death based on non-living processes.

If this cultural paradigm is to be reversed, we must ground ourselves in the opposing negentropic conception of life, which was expressed by Nicolaus of Cusa in “On the Vision of God,” written in 1453, and in a number of his other works.

Today the very concept of evolution gives rise to a false debate between the Darwinian, materialist conception of evolution and so-called Creationism, as based upon a literal interpretation of the Bible. However, in his writings, Nicolaus of Cusa presented a third concept, which can only be described as a Christian concept of evolution. The idea that God’s creation of the universe does not contradict the concept of evolution is not original to Cusanus. St. Augustine put forward such a conception in his commentary “On Genesis,” in which he argued that all things that are generated take their origin and development, each in its proper time, from the original principles or seminal reasons of things which God placed in them. (A, p. 103)

In “On the Vision of God,” Cusanus uses the example of a nut tree to demonstrate that if we want to know the essence of a created thing, we must ascend in our mind’s eye from the visible domain to its First Cause in the invisible domain. He takes this approach based upon the Apostle Paul’s statement in Romans 1:20, that “[e]very since the creation of the world, his invisible attributes of eternal power and divinity have been able to be understood and perceived in what he has made.”

Cusanus argues: If I seek the power and beginning of a nut tree which I see with the sensible eye, I must look with my mind’s eye to see that the tree existed potentially in its seed. However, since the seed has power only with respect to this species of nuts, I must reflect upon the entire seminal power of all the trees of various species. If, then, I wish to see the Absolute Power of all the powers of such seeds, I must pass beyond all seminal power to the Beginning, which gives being to every power, whether seminal or non-seminal. He continues:

This absolute and superexalted Power gives to each seminal power the power whereby it enfolds a tree potentially, together with all that is required for a sensible tree and all that follows from the being of a tree. Accordingly, this Beginning and Cause has within itself—as Cause, and in an absolute and enfolded manner—whatever it gives to the effect. In this way I see that this Power is the Face, or Exemplar, of every arboreal species and of each tree. In this Power I see this nut tree not as in its own contracted seminal potency but as in the Cause and Maker of that seminal power. And so, I see that this tree is a certain unfolding of the seed’s power and that the seed is a certain unfolding of Omnipotent Power. (DM, p. 143)

Moreover, I see that in the seed the tree is not a tree but is the seminal power, and the seminal power is that from which the tree is unfolded, so that in the tree there can be present only what proceeds from the seed’s power. Similarly, in its own Cause, which is the Power of powers, the seminal power is not seminal power, but is Absolute Power. And so, in You my God the tree is You Yourself my God; and in You it is the Truth and Exemplar of itself. Likewise, too, in You the seed of the tree is the Truth and Exemplar of itself. Of both the tree and the seed You, O God, are the Truth and Exemplar. (DM, p. 145)

In this discussion of the nut tree, Cusanus puts forward the idea that all creation is enfolded eternally in God as Cause and unfolded in time as effect. God, therefore, both transcends the universe and is present in it.
Since all things were made through the Word, the Word is present in all things. Or as Cusanus writes in “On the Vision of God,” “since God is the Absolute Form of all formable forms, He enfolds in Himself the forms of all things.” (DM, p. 123) Since God is the Absolute Being of all things, He is present to each and every thing. God is not the universe, as a pantheist would argue, because He precedes the universe, which He has created. He is “all in all,” therefore, in such a way that He is nothing of everything. Thus although God is not a creature and therefore cannot be seen by the sensible eye, He is nonetheless the invisible Cause and Essence of each and every creature, a concept which Cusanus locates as expressed by the Apostle Paul, who wrote that God “is before all things, and in Him all things hold together” (Col 1:17), that God is “all in all” (I Cor 15:28), and that “God is not far from us, for we are in Him and we are moved” (Acts 17:27-28).

The creature does not exist through itself, but rather derives its specific form from the Form which exists through itself. Therefore, if we wish to know the Nature of the creature we must see the invisible in the visible, the cause in the effect, the truth and exemplar in the image.

Those who argue that the universe is entropic, do so because, like Aristotle, they deny that man is capable of elevating his mind above inductive and deductive forms of discursive rationality to the level of creative intellect. Because Aristotelian logic defines as its first principle the law of contradiction, it rejects as impossible the coincidence of opposites, such as the idea expressed by Cusanus in “On Learned Ignorance” that “every created thing is, as it were, a finite infinity or a created god,” in contradistinction to God, who is Absolute infinity and uncreated. (LI, p. 93) But to arrive at a true understanding of the laws of the universe, and to enter Paradise, as Cusanus writes in “On the Vision of God,” one must vanquish the lofty rational spirit (DM, p. 161) of Aristotelian logic, which guards the gate of the wall of Paradise.

Today we hear a lot about a concept of self-realization, according to which man divorced from God reduces himself to a bestial state. However, Cusanus argues that for man to truly realize his potential, he must rise to the level of being an adopted son of God. Since man is created in the image of God, he can only be his true self to the extent he conforms to his own Cause and Exemplar. When God says to him: “Be your own and I will be yours,” (DM, p. 147) Cusanus understands that to mean that we are our own, i.e. our own true selves, when the senses serve reason and we are in harmony with the Word.

When we rise to the level of creative intellect, then we are capable of seeing that the universe is not entropic, but rather unfolds nегentropy, precisely because it is enfolded in God, Who is eternal.

One of the major obstacles to conceptualizing how God could have created the universe out of nothing in eternity which precedes time and how at the same time it can be said that the universe evolves in time, is the tendency to view eternity from the standpoint of succession. But as Cusanus points out:

Now, posterior to most simple eternity no thing can possibly be made. Therefore, infinite duration, which is eternity itself, encompasses all succession. Therefore, everything which appears to us in a succession is not at all posterior to Your Concept, which is eternity. For Your one Concept, which is also Your Word, enfolds and unfolds. . . . All things exist because You conceive them. Now, You conceive in eternity. But in eternity succession is—without succession—eternity itself, i.e., Your Word itself, O Lord God. Any given thing that appears to us in time was not conceived by You before it existed. For in eternity, in which You conceive, all temporal succession coincides in one and the same now of eternity. Therefore, where the future and the past coincide with the present, nothing is past or future. (DM, p.167)

In 1715, Gottfried Wilhelm Leibniz derided the entropic concept of the universe advocated by Sir Isaac Newton and his follower Samuel Clarke by pointing out that “[a]ccording to them God has to wind up his watch from time to time. Otherwise it would cease to go. He lacked sufficient foresight to make it a perpetual motion.” (L, p. 205)

In “On the Vision of God,” Cusanus points out that in God’s Clock, succession is present without there being succession in the Word, or Concept, that in this most simple Concept are enfolded all movements we experience as in succession, that whatever occurs successively is the unfolding of the Concept, so that the Concept gives being to each successive thing and that the reason each event was nothing before it occurred is that it was not conceived before it existed. Cusanus then concludes: “So let the concept of a clock be, as it were, eternity itself. Then, in the clock, movement is succession. Therefore, eternity enfolds and unfolds succession, for the Concept of a clock—a Concept which is eternity—both enfolds and unfolds all things.” (DM, pp. 169-171)

In “On Actual-Potential,” Cusanus uses the example of a boy playing with a top to show how Eternal Being is all things at once and how the whole of eternity is within the present moment (see Figure 1):

Let us describe a circle, be, which is being rotated about a point a as would the upper circle of a top; and let there be another fixed circle, de. Is it not true that the faster the movable circle is rotated, the less it seems to be moved? Suppose, then, that the possibility-to-be-moved is actual in it; i.e., suppose that the top is actually being moved as fast as possible. In that case, would it not be completely motionless? Since the motion would be infinite velocity, points b and e would
be temporally present together at point d of the fixed circle—without its being the case that point b was temporally prior to point c. (For if b were temporally prior to c, the motion would not be maximal and infinite.) And yet, there would not be motion but would be rest, since at no time would points b and c move away from the fixed point d. Hence the maximal motion would at the same time also be minimal motion and no motion. In that case, just as the opposite points b and c would be always at point d, would they not always also be at the opposite point from d, namely, at e? Would this not likewise hold true for all the intermediate points of the circle bc? Therefore, the whole of the circle would at every instant be simultaneously present at point d. And the whole of the circle would be not only at d and e but also at every other point of the circle de. Let it suffice, then, that by means of this image and symbolically we are somehow able to see that (if the circle bc were illustrative of eternity and circle de were illustrative of time) the following propositions are not self-contradictory; that eternity as a whole is at once present at every point of time and that God as the beginning and the End is at once and as a whole present in all things. (CI, pp. 83-84)

Having developed the above concepts I would now like to quote from a number of Cusanus’ other writings, in which he is more explicit in regard to his conception of creation as the unfolding of that which is enfolded in the Word.

In “On Learned Ignorance,” Cusanus writes:

We see that by the gift of God there is present in all things a natural desire to exist in the best manner in which the condition of each thing’s nature permits this. (LI, p. 49)

In God as in an end all natural movements find rest; and in Him as in infinite actuality all possibility is realized. (LI, p. 79)

The same holds true regarding the earth, the sun, and other things; unless they had been latently present in matter—present in terms of a certain contracted possibility—there would have been no more reason why they would have been brought forth into actuality than not. (LI, p. 106)

The motion of the planets is an unrolling of the first motion; and the motion of temporal and terrestrial things is the unrolling of the motion of the planets. Certain causes of coming events are latent in terrestrial things, as the produce is latent in the seed. Hence these thinkers said that the things enfolded in the world-soul as in a ball are unfolded and extended through such motion. (LI, p. 112)

Matter has from its aptitude for receiving form—a certain appetite. . . . Form desires to exist actually but cannot exist absolutely, since it is not its own being and it is not God. . . . While possibility ascends towards actual existence, form descends, so that it lifts, and perfects, and terminates possibility. (LI, p. 112)

The highest species of the one genus coincides with the lowest species of the immediately higher genus, so that there is one continuous and perfect universe. (LI, p. 126)

Therefore, no species descends to the point that it is the minimum species of some genus, for before it reaches the minimum it is changed into another species; and a similar thing holds true of the would-be maximum species, which is changed into another species before it becomes a maximum species. When in the genus animal the human species endeavors to reach a higher gradation among perceptible things, it is caught up into a mingling with the intellectual nature; nevertheless, the lower part, in accordance with which man is called an animal, prevails. . . . Accordingly, it is evident that species are like a number series which progresses sequentially. . . . Whether we number upwards or downwards we take our beginning from Absolute Oneness (which is God)—i.e., from the Beginning of all things. Hence, species are as numbers that come together from two opposite directions . . . . (LI, p. 127)

In “On Conjectures,” Cusanus writes:

Each of the elements therefore can enfold in itself the three others, as in the cone of a three-sided pyramid, such that the unity of one is the actuality of the other elements, and thus a composition arises peculiar to each element. (TNCF, p. 102)

Therefore, the universality of the elements ascends to the most specific as the point to the body, by means of syllables and words, as potentiaility to actuality. . . . For the individual is, as it were, the end of the flux of the elements and the beginning of their reflux. (TNCF, p. 103)
Corporeality proceeds upwards into spirituality. Because the descent of the spirit is the ascent of the body, you must combine both... (TNCF, p. 116)

Hence the vegetative spirit conceals in its darkness the intellectual; and certain signs of it appear in the branches as support, in the leaves and in the skin as protection of the fruit. Nevertheless, we experience more intellectual signs among animals, where the spirit is clearer; for we experience the signs of intellectual vigor more clearly and nearly in the senses, still more in the imagination and more amply in rationality. (TNCF, p. 117)

The corporeal nature climbs upward stepwise to the sensitive and indeed such that its ultimate ordering nearly coincides with the sensitive. (TNCF, p. 125)

In "On Genesis":
Moses also expresses this elegantly, when he says: "God formed man of the dust of the earth and breathed into his face the breath of life and he became a living soul," so that he expresses in this way the earthly man, who is also called Adam, the earthly; according to the extrinsic as body, which is summoned from the dust of the earth or the nature of the elements, and according to the intrinsic as the vital power, which is from the breathing in of the divine spirit or the participation in the divine power, so that thus from this moment the living man is one true man. (TNCF, p. 227)

In "On the Game of Spheres":
Elemental power is hidden in chaos and sensitive power is hidden in vegetative power, and in that vegetative power the imaginative power, in the imaginative power, the logical or rational, in the rational the intellectual, in the intellectual, the intellectible, and in the intellectible the Power of powers. (GS, p. 111)

As is clear from the above, Cusanus conceives of the unfolding of species enfolded in God's Word as a transfinite number series. Since God is both the center and the circumference of the universe, this number series can be visualized as both a descent and an ascent. In "On the Vision of God," Cusanus points out by comparison that "he who counts unfolds and enfolds, alike: he unfolds the power of oneness, and he enfolds number in oneness." (p. 171)

In "On Beryllus," Cusanus gives the following figurative representation of this process (see Figure 2):

Let the line $AB$ be a similitude of the truth and stand between the first truth and nothing. Let $B$ be the end of the similitude in respect to the nothing, $B$ should be folded over $C$ in an enfolding motion toward $A$, and thus represent the motion, with which God summons from non-existence into existence. The line $AB$ is fixed, so long as it egresses from the origin as $AC$ does, and movable, so long as it is moved enfoldingly over $C$ toward the origin. In this motion, $CB$ with $CA$ causes various angles, and $CB$ unfolds by means of this motion different similitudes. First it causes in a less formal similitude an obtuse angle, which is its being; then in a more formal similitude an angle, which is its life; and then in the most formal and most acute angle it causes its understanding. The acute angle participates more in the activity of the angle and in its simplicity and is more similar to the first Origin.

And it is in the other angles, namely, in that of life and of being. Likewise the angle of life is in that of being. And what intermediate differences there are between being and life and understanding and what can be unfolded, you will see likewise in the enigma. (TNCF, pp. 311-12)

For Cusanus, this evolutionary process in the universe which proceeds from the elemental to the vegetative to living beings culminates in Man, who is both $imago Dei$ (the image of God) and a microcosm, who both mirrors and acts upon the macrocosm.

In order to understand in what way man is the image of God, we must first consider Cusanus' conception of the Triune God. Although Cusanus develops the concept of the Triune God in many ways in his writings, perhaps the most illustrative for our purposes is the concept of the
Thus Cusanus writes:

Although the motion that gives life to the animal ceases with the declining health of the body, nevertheless the intellectual motion of the human soul, which exists and functions without the body, does not cease. For this reason that motion, which intellectually moves itself, is self-subsistent and substantial. That motion which is not self-moving is an accident, but that motion which is self-moving is a substance. (GS, p. 65)

Therefore, what dies is not the substance of man, but rather only that which is accidental to his substance.

Cusanus further maintains that the macrocosm, i.e., the universe as a whole, is self-moving and therefore perpetual. In “On the Hunt for Wisdom,” he argues that God, Who is eternal, creates the potential-to-become of all actual creatures out of nothing, and that this potential-to-become of the universe is perpetual. Thus he says: “The whole world can never cease.” (TNCF, p. 479) In “On the Game of Spheres,” he further argues that “also perhaps that substance which is called the sensitive or vegetative soul does not perish through the death of an animal or the withering of a tree although it does not operate as before.” (GS, p. 73) The reason that he believes that this is the case is because “the world soul is the sensitive soul in sensitive things, the vegetative soul in vegetative things, and the elemental soul in elemental things.” (GS, p. 75) Similarly, in “On the Vision of God,” Cusanus writes: “O Lord, I see that Your Spirit cannot be lacking to any spirit, because it is the Spirit of spirits and the Motion of motions; and it fills the whole world. But whatever things do not have an intellectual spirit Your Spirit governs by means of the intellectual nature that moves the heavens . . . .” (DM, p. 263)

Thus, according to Cusanus, not only does the individual human soul not cease, but also neither does the world as a whole nor the substance of sensitive, vegetative, or elemental souls perish.

What distinguishes man from an animal, is that the latter lack the free power that is in us. In “On the Game of Spheres” Cusanus writes: “Nature can never impose necessity upon our spirit, but the spirit can impose necessity upon nature.” (GS, p. 73) As a result of his free spirit, man can invent new modes of social reproductive behavior, whereas a beast must follow the impetus of nature. According to Cusanus: “Therefore they are impelled to do those things that they do by their nature, so that all the members of each species hunt and make nests in the same way.” (GS, p. 71)

It is in connection with Cusanus’ conception of man as having the free will necessary to invent something new that we see most clearly a reflection of LaRouche’s concept of negentropy as characterized by an increase of the energy of the system and at the same time an increase in...
the ratio of free energy to energy of the system. Although the unfolding of the universe occurs negentropically in that all things, as Cusanus says, “desire to exist in the best manner in which the condition of each thing’s nature permits this,” man, since he has free will, can increase his dominion over nature by choosing to increase his conformity to God.

As Cusanus writes in “On the Vision of God”:

I must see to it that, as best I can, I be made more and more capable of receiving You. But I know that the capability which conduces to union is only likeness . . . Therefore, if by every possible means I make myself like unto Your goodness, then according to my degree of likeness thereto I will be capable of receiving truth . . . My being is such that it can make itself more and more capable of receiving Your grace and goodness. And this power, which I have from You and by virtue of which I possess a living image of Your omnipotent power, is free will. Through free will I can either increase or decrease my capability for receiving Your grace. (DM, p. 127)

Man, therefore, is not only imago Dei, but capax Dei. He has the capacity to become increasingly Godlike or Deiform. In “On the Vision of God,” Cusanus argues that man can attain union with God. In imitation of Christ, man can become an adopted son of God. To explicate this capacity in man, Cusanus compares it to the capacity for successive increase in both mineral and sensible life. He writes that “there is a single spirit of the source of gold. As a result of the influence of the sun or the heavens this spirit is more and more purified until at last it is fashioned into gold. . . .” (DM, p. 257) Similarly “in man the sensible spirit . . . under the influence of the heavens . . . becomes successively increased—to the point where it is posited in perfect actuality.” (DM, p. 257) Cusanus then writes that the intellect, which is not constrained by the influence of the heavens but is altogether free, if it subjects itself by faith to the influence of the Word of God, “is perfected and grows and is made progressively more capable of receiving the Word and progressively more formed, and similar to the Word. And this perfection, which comes in this way from the Word, from which the intellect has being, is not a corruptible perfection but is Godlike.” (DM, p. 259)

From this standpoint, it should be clear that entropy exists in the same way that evil exists. It has no positive being, and therefore only exists to the extent that man through the misuse of his free will departs from the good. Therefore, rather than being a law of the universe, entropy is merely the evil consequence of man’s own decision to decrease his capability of receiving the grace and goodness of God by refusing to bring his intellect into conformity with God’s Word.

In “On the Vision of God,” Cusanus concludes that Christ has taught only two things—faith and love:

Through faith the intellect approaches unto the Word; through love it is united therewith. The closer the intellect approaches, the more it is increased in power; and the more it loves the Word, the more it is fashioned in the Word’s light. But the Word of God is within the intellect, which need not search outside itself. For it will find the Word within, and it will be able to approach the Word by faith. And through prayer the intellect will be able to obtain the capability of approaching more closely. For the Word will increase the intellect’s faith by imparting its own light. (DM, p. 261)

These are the ideas which gave rise to a Golden Renaissance in the arts and sciences in the fifteenth century and which resulted in the most significant rate of increase in man’s power over nature in human history. These are the ideas of God, man, and nature which the prevailing culture of death in our society today is determined to expunge. And these are the ideas which we must master once again if we are to achieve the reverse paradigm shift necessary to prevent the continued rapid disintegration of civilization.

The task before each and every one of us, as LaRouche writes in “History as Science,” is to become “wittingly imago Dei,” or as Cusanus writes in “On the Vision of God,” to find the Word of God within our own intellects, to become self-moving in the image of God and thus to increase our capax Dei, so as to become more intelligent and loving instruments of the continued unfolding of God’s negentropic purpose. As Cusanus writes in “On Learned Ignorance,” since God as the life of all rational spirits is their center, “it is not the case that, with respect to location, He is seated on the circumference rather than at the center. And, therefore, He who is the ‘Fount of life’ for souls, as well as their goal, affirms that the Kingdom of Heaven is also within men. [Luke 17:21].” (LI, p. 145)

NOTES
1. Jasper Hopkins, A Concise Introduction to the Philosophy of Nicholas of Cusa” (Minneapolis: University of Minnesota Press, 1978). (CI)