

A New Look at Scientific Enquiry

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A. Why a philosophy of science?

In our age nearly everyone is looking up to what scientists have to say. They are considered to be the experts from whom we can learn what we need to know about our world. The discoveries made by scientists in many disciplines have been nothing short of spectacular. Their methods of enquiry and the testing to try to prove sophisticated theories are often painstaking and ingenious. Their work is frequently subjected to intense peer review, and they continue to add to the world's collective scientific knowledge at a dazzling rate.

It is no wonder therefore that the general public tends to accept at face value the constant stream of pronouncements by scientists. Most of us are simply not able to make any sort of judgement about the accuracy of most of these pronouncements. There is a certain awe and a feeling that reputable scientists are seldom wrong in their published views because of the exhaustive techniques believed to have been used to arrive at their conclusions.

Yet, notwithstanding the undeniable accomplishments of science, we find many sharp disagreements and clashes between scientists. These expose major cracks and gaping holes in the collective scientific wisdom. Certainly, human affairs can hardly be described as unequivocally moving in the right direction, despite all the explosive scientific discoveries.

We read about things that are going wrong in spite of the advice from scientists, be they economists, jurists, sociologists, psychiatrists, political scientists and others. This makes us wonder why some scientists can be so unproductive, while others produce near-miracles.

We are therefore quite justified in asking who and what scientists are and

even what is meant by the word "scientist", especially since many cloak themselves in a certain aura of irrefutability and logic.

Some years ago I attended a meeting of the science section of COR (Coalition on Revival), whose members were all scientists. But when the question was posed at the very beginning of the meeting: "What do we mean by science?" there was some confusion. One of the members, a noted professor of a well known Christian college, suggested that "it is knowledge". When asked whether the knowledge that God exists belongs in the category of science, there was some embarrassment. Clearly not all knowledge is of a scientific nature.

In the course of history there has been a slow development in the understanding of what differentiates a scientist and his activities from what the rest of us do when carrying out our every day activities.

In what follows I will try to acquaint our readers with an attempt, made by the jurist and philosopher Herman Dooyeweerd, to trace the cause of many of man's ills, as they have resulted from the work of scientists. He knew that all human efforts, including scientific theorizing, are affected by our religious presuppositions. Consequently, as a Christian, he wished to found his own theorizing on his faith.

As a philosopher of science, he made it his life's work to penetrate to the religious basis for the theories of non-Christian scientists, which have so seriously influenced human affairs. Next he analyzed how their religion affected their theories via the various philosophical systems which these thinkers have devised. He made the interesting discovery that quite often non-Christian philosophies can be shown to err in their logic. While it is impossible to prove that God exists, it is often the case that a pagan philosophical system violates the laws of logic. And that can lead to a serious

discussion with pagan thinkers about their belief and to a Christian apologetic, once they realize that their logic is faulty.

And so he came to the conclusion that Christians sorely need a philosophy based on the central tenets of the Christian faith. For this he found a beginning in the work of Abraham Kuyper, and began to apply his insights to the area of public policy. Eventually, he had to develop an entirely new Christian philosophy of science, of which I hope to present a modest picture.

This is no easy task, since the terminology alone is frightening at times. But I hope that the reader will bear with me, and conclude at the end that this work is immensely important for understanding what goes on in the world of science and why its effects are often deleterious in our daily lives.

B. Looking and analyzing.

Just looking.

In order to bring some clarity to the question of what constitutes a science, Herman Dooyeweerd asked himself: "In what way does my non-scientific *looking* at a concrete object like a tree differ from a scientific manner of *investigating* it?"

First of all he observed that, in the pre-theoretical stage, when we look at it with our "common" sense, (Dooyeweerd usually called this our 'naïve experience'), we are unaware of the fact that, in our thought, we are isolating it as an individual entity from its environment. Without any attempt at analyzing it, we actually see it as one entity, embedded in our total field of vision. We recognize it as a tree. We "just know" that, based on our previous experience.

When I look at a tree, I already have an idea that this is an individual whole thing, *before* I can even start examining its functions....

The idea of the internal structural unity of this real whole...*precedes* every analysis of...these functions.¹

In our "naïve experience" therefore, when "just looking", we are not intentionally and self-consciously active. So this seems to be the first notion of how naïve experience differs from scientific observation.

Analyzing.

When a scientist goes to work on this tree, he deliberately isolates it from its environment in his mind. He focuses his attention on it and observes that it grows from a seed, absorbs fluids, begins to swell, sends out roots, a stem and branches, leaves, etc. He lifts these various parts and functions of the tree out of the total of his impressions, he *abstracts* them, i.e. he begins his analysis.² He has now begun to practice science.

The things we analyze.

A scientist can only start to abstract from what are experienced as real individual entities. The individuality of things is experienced in pre-theoretical thought and cannot be explained. Scientists of the past have tried to do this and came up with something, or a power (such as a "substance"), that is **believed** to exist in or behind things, and which is supposed to maintain their individuality throughout all changes in their appearance. But this is not verifiable scientifically and belongs to pre-scientific thought.

Theorizing.

In the next step the scientist starts to *guess* how something like a seed does all these remarkable things that lead to a mature tree. This means that he now formulates theories, 'educated guesses', by which he tries to *explain* what happened, how the seed developed into a tree, etc. This is the point at which he is practicing science. And that brings us to the question of what we mean by the word 'theory'. As R.A. Clouser puts it in a remarkable recently published book:

The very soul of a theory is...that it is proposed in order to explain something.³

However, not all attempts at explaining something are scientific theories.

For many people, Clouser says:

...the term theory simply means any account, interpretation, or aid to understanding...This is confusing and unacceptable because...it leaves in the dark the difference between a

theory and a myth.... Therefore I will use the term 'theory' to indicate only the explanations that do offer hypotheses and then try to justify those hypotheses with argument and evidence.⁴

Another way of saying it is that all theories are guesses, but not all guesses are theories!

And so, during scientific work, we isolate our object under investigation, we abstract its functions, and we try to explain the events displayed by this object, as to 'cause and effect', with the aid of theories.

C. The religious presupposition.

Some scientists may deny that the world view of a scientist does influence the way he conducts his scientific work. Even if not aware of it, one does choose his starting point: every scientist looks for what caused a phenomenon he investigates. This leads to the question of what was the **first** cause of all subsequent phenomena. In answer to this he has to assume that *there is something that depends on nothing else for its existence, and which in turn has caused everything else to exist*. This "something", this origin, is by definition what we understand to be the divine.

This urge to seek an explanation for *the origin* of it all is widespread. Whether it was one of the Greek gods or the energy of the Big Bang of the astronomers, its function is the same.

No doubt, most students are unaware of this when they begin to acquire the knowledge and skill necessary to become a scientist. But once they are in training, their teachers and mentor will, in one way or another, impart opinions, shaped by their own world view, and sooner or later our budding scientist has to choose. To "explain origins", he must choose between assigning divine status to *God as creator of the cosmos*, as the Jew, the Christian and the Muslim do, or to *something inside of the cosmos*. Now this is an act of faith, which precedes scientific analysis, and it always colors one's choice of scientific theories.

There are religions whose adherents do not worship their deity. But, even in the case of those, the "something" inside the cosmos, to which they assign

divine status⁵, becomes by definition the core of their religion. Hence the belief in the divine status of something inside the cosmos is a religious faith.

D. Logical scrutiny.

The individual and the laws of creation.

Central to Dooyeweerd's approach to science was his conviction that everything that is created is ruled by the divine laws of God's command. Hence he called his philosophy the "philosophy of the law idea". In his *A New Critique of Theoretical Thought* this was translated as the *cosmonomic philosophy*.

This concept of a world ruled by laws is recognized by all scientists, since their goal in life depends on the notion that it is their task to discover and articulate these laws, even if they do not acknowledge their origin. In that case they simply substitute the word "natural laws" for "divine laws".

As Dooyeweerd observed, real things have an internal structural principle:

...a typical law of individuality which rules the structural coherence of the different functions within the individual totality.⁶

Thus real things have a law-governed unity of order, a *law-order* for their functions. Where do such laws come from? For living things Aristotle speculated that the fertilized egg contains an invisible something, a "substance", which he called "en-tele-chy". This entelechy is what makes the embryo strive toward achieving its purpose (*telos*), i.e. maturity.

In more recent times, biologists rejected the notion of this substance, this entelechy (also called teleology), as a metaphysical speculation, because they saw no basis for it in reality. Consequently, C.S. Pittendrigh, who acknowledges the law-order of things, introduced the term "teleonomy".⁷ (*Telos* = purpose and *nomos* = law). However, the word teleonomy also fails to explain reality: entities, such as plants and animals, lack the faculty of logic: they *have no concept of the future*, which requires the ability to consciously form concepts. Hence they cannot strive toward a built-in future purpose, whether law-governed or not. Only man, created in the image of his maker, can strive towards a purpose, and he does this *consciously*. Replacing the word of the Creator with the term coined by

Pittendrigh is of no more explanatory value than the musings of Aristotle. Dooyeweerd had to reject it.

Dooyeweerd called this law-order "individualiteits structuur" in Dutch, which has been awkwardly translated in his *New Critique* as "individuality structure". Unfortunately the inadequate English version of this key term has often been misunderstood. It has been used in its proper sense as order, but also mistakenly in the sense of an individual entity. For this reason it has been re-translated in various ways, leading to a certain lack of clarity, which will undoubtedly be corrected in future English editions of Dooyeweerd's work.

Clouser has referred to the law-order of entities as their "type-law"; the law-order of a group or a certain type of entities. As a further alternative, others have proposed "idionomy". "Idios" = special, or particular, and "nomos" = law.

E. The theory of the law-spheres or aspects.

The law-order of things now demands elaboration. Dooyeweerd noted that the various disciplines investigate special "modes of being" or 'law-spheres', which things display and can be abstracted from them, such as number, spatial relations, etc. All of these spheres have their own group of laws, such as those of arithmetics and geometry. To simplify his terminology, he called these spheres *aspects*.

The question has often been asked: what are these aspects which things display? Where did Dooyeweerd get this idea, and is it not arbitrary? It all began with a study of the development of the various disciplines in science and in the humanities, and by the way philosophers sought to interpret the relations between these disciplines in their whole picture of the world.

Each discipline has a *central concept* which delimits the law-sphere or aspect, and which forms its field of study. The laws of acceleration (delimited by the aspect of motion) differ from those of asexual propagation (delimited by the life aspect) and of those of litigation (delimited by the juridical aspect).

Philosophers have devised a multitude of systems to explain the workings,

the laws and the origin of the cosmos and its contents. The resulting "-isms" showed a great deal of diversity, which led to much disagreement. The fact that so many intelligent scientists and philosophers were in such disarray about truth and knowledge, a phenomenon which dates back to the dawn of civilization, required an explanation. So Dooyeweerd began a study of history in order to find out. What he found was that many scientists in effect assign "divine" status to the central concept of one of these law-spheres in their search for the cause of everything they investigate.

Scientists and philosophers have not invented the law-spheres, but try to find regular features in the phenomena they investigate, and formulate theories to explain what they find. These regularities appear in groups, law-spheres or aspects, each with its central core concept. Eventually this grouping led to the separation of the various scientific disciplines. The aspects suggest themselves to us. They are not "visible things", but they are the various *real* ways in which real entities show themselves to us in their beautiful variety.

Dooyeweerd acknowledged this, and enumerated the major scientific disciplines as follows:

1. Mathematics.
2. The study of spatial phenomena.
3. Kinematics.
4. Physics.
5. The study of biotic phenomena.
6. Psychology.
7. Logic.
8. History.
9. Linguistics.
10. Sociology.
11. Economics.
12. Esthetics.
13. Jurisprudence.
14. Ethics.
15. Faith.

But then he made an interesting discovery. Upon closer examination he found that scientists have a tendency to exaggerate the importance of the law-sphere which delimits their discipline. Where many erred was their tendency to elevate it above the other aspects as the one that gave rise to all the others. And that amounted to giving it the status of the divine, of stating that it is

the origin of a part of reality. *That turned out to be the origin of many of the -ISMS in philosophy.*

The next step now was to examine the various "religions" or core beliefs that have sprung up as a consequence of this deification of aspects.

F. Deification of aspects.

1. Numerical.

One of the earliest sciences began with abstracting numbers, after counting had been invented. This led to the science of mathematics, which elaborates the laws of numerical relations. And one of the oldest of Greek religions was based on the worship of numbers: Pythagoreans, like Plato and Leibniz after him, believed that numerals represent a realm of invisible mathematical entities upon which the visible world depends.⁸

They sang hymns to them and even prayed to the number ten:

Bless us, divine number, thou who generatests gods and men! O holy, holy tetraktys, thou that containest the root and source of eternally flowing creation.⁹

2. Spatial.

After measuring distances, early scientists abstracted the concept of spatial relations. This resulted in the science of geometry. The Greek Parmenides deified space and chose space as the supreme cause of all. For him: this conception originated from an absolutizing of the...spatial aspect.... The eternal being, which has no coming nor passing away, is in his view enclosed in the ideal static-spatial form of the sphere.¹⁰

3. Kinetic.

Another Greek religious motif was Motion. This motivated the astronomers to investigate the motion of stars and planets. Thus the science of kinematics was launched. But here too a religious connection began to deify movement:

the eternally flowing stream of life as the divine origin.¹¹

4. Physical.

When the idea had taken hold that heavenly bodies actually were real existing material bodies, the concept of physical entities was conceived. The science of physics has a long history. But so has materialism. The discoveries

of the forces that affect material bodies gave rise to the *deification of matter*: matter and energy are the origin of all that exists.

Marxist materialism may be on the wane, but the world of science is still populated by a large army of materialists. The doctrine of abiogenesis, the theory that the first living beings arose from the random collision of inanimate molecules in "primeval" oceans is a typical and basic consequence of materialism. And it is still very prevalent among molecular investigators, and untold sums are still spent on what have always proved to be futile efforts to produce a "living" molecule.¹²

The behaviorists Watson and Skinner differ on details, but both give the physical aspect of reality the status of self-existence, which determines even human behavior. Concludes Clouser:

In this way, the materialist perspective presupposes a faith in the divinity of matter...behaviorism cannot be acceptable to anyone who believes in God.¹³

5. Biotic.

A more 'lively' looking approach of the world at large is that of the vitalists. They too have been in evidence for centuries. They assign an all-generating power to the *life-force*. Already Plato saw the cosmos as one large *organism*, of which the state was a part-organism, meant to enable man, a smaller organism still, to live a good life. And today there still are many adherents of *vitalism* in various persuasions who *deify life*. But, as in so many other endeavors of man, the sects in this religion have multiplied here as well. There have been vitalists, neo-vitalists, organismists, holists, idealistic morphologists, et.al.

6. Sensory.

Sensory perception, feeling, emotion, the ability to react to a stimulus with a motoric response, have brought some to declare that the psyche rules the cosmos. Even all dead matter is deified by the belief that it is endowed with spirits. It is the religion of *Panpsychologism*.

7. Logical.

Man's prime faculty, which distinguishes him from all other species, is that of logic. He is able to form concepts, to distinguish between them, to

analyze the world around him, and to test all theories about it for its logical consistency. And again, logic has been deified by the adherents of *logicism*. Plato and Aristotle already declared perfect logical thinking to be god.

8. Historical.

Man displays the ability of consciously forming a plan *at will as a result of his imagination* and of executing it, using his logical faculties. His formative power is thus built upon his logic. Plants and animals can form products, but they have no logical faculty. We intuitively know this and say that (in the case of animals) they act by instinct. This formative power is the next function that gave rise to a branch of science: that of *history*, the story of human culture. Needless to say, this formative power has been deified by many, when it gave rise to *historicism*.

The list becomes tedious. This is not the place to give a history of philosophy. The story of how man has in turn idolized and divinized all the aspects of creation can be found in the extensive analysis by Herman Dooyeweerd in his *A New Critique of Theoretical Thought, Vol. I and II*. It includes the deification of the central concept of the disciplines of Linguistics, Sociology, Economics, Aesthetics, Jurisprudence, Ethics, and Faith.

G. Sphere sovereignty and universality.

It is no accident that over time the core concept of each of the major scientific disciplines has in turn been elevated to the highest position to which many or all of the remaining law spheres or aspects could be reduced. Each of these attempts at reduction had some appealing arguments going for it, and added a new "-ism" to philosophy, each accepted by their own groups of well known scientists. This fact clearly showed that all of these -isms pointed to the significance of the core concepts involved: that they are based on reality. And these concepts delimit the various scientific disciplines.

Sphere sovereignty.

Each major scientific discipline concentrates on a special way in which entities display themselves to us. It became clear to Dooyeweerd that these ways all represent true aspects of

reality. But he found internal contradictions whenever an attempt was made to reduce phenomena not governed by such an aspect or law-sphere to it. That made him conclude that none of them could be reduced to any of the others. And it confirmed his belief that everything in the cosmos is created and not absolute or self-existent. No aspect of reality can create any of the others; they are all equally relative in the face of the Creator. None can be reduced to any of the others: each of them shows a certain *sovereignty in its own sphere* of functioning.

Dooyeweerd gave an example of how his theory applies to scientific investigation:

The very same phenomena which physics investigates in terms of the operation of physical energy are considered by biologists under the aspect of organic life. For the science of history, these phenomena may take on an historical aspect. Just think of the historical significance of natural catastrophes like floods.... Economics views them in terms of the economic aspect. Jurisprudence will study them under the juridical aspect of objective facts of law in their necessary bearing on subjective legal relationship.¹⁴

Sphere universality.

There is another side to the aspects which gives an interesting explanation of why reductionism is untenable. In other words, why attempts to elevate one aspect or law-sphere as being the origin of all reality, does not work. To support his view, Dooyeweerd introduced this new concept as the *universality* of the aspects as follows:

The sphere sovereignty of the aspects of reality has its counterpart in the *universality of each aspect within its own sphere*.... This may also explain the apparent success of the various absolutizations in immanence philosophy.¹⁵

At first sight the -isms may seem to be reasonable, when viewed from a special aspect by a representative of a scientific discipline. The reason is that all entities, events, human artifacts and relationships display functions in all aspects. For instance, as a functioning entity, a flower displays all the aspects:

1) numbers – e.g. it has four petals and one stem; 2) space – it is so high; 3) it moves; 4) It consumes energy and assimilates matter; 5) It is alive. In all these aspects it functions as a *subject*, as an individual entity. In all other aspects it functions as an *object*, that can be observed by man: 6) we can perceive it with our senses; 7) we can submit it to our logical scrutiny; 8) we can plant and cultivate it into a prize specimen; 9) we give it a name which identifies it for others; 10) we may use it in social interaction: to decorate a hall for a party; 11) we can grow it for economic value and profit; 12) some just admire its aesthetic appeal; 13) I bought it, it is my just property; 14) our daughter gave it to show her love for her mother; 15) its beauty reconfirmed Solomon's faith in its creator.

Dooyeweerd continues:

There is a divine irony in the development of apostate philosophy... When viewed from the immanence standpoint, is not historicism as convincing as a logicistic or a psychologistic interpretation of empirical reality?¹⁶

H. Irreducibility

Let us take a closer look at this irreducible character of the aspects, which means that one law-sphere cannot be made a part of another law-sphere. We will begin with the numerical aspect. As a characteristic, as a concept we abstract from real entities, we can divide a number into fractions, each of which is again a number. Yet, since a number takes up no space, cannot move or display energy, or even be seen, we cannot divide it into something that is not a number. That means that *we cannot reduce the numerical aspect to something else*.

We can make a “model” of the number “one” by putting a dot on a piece of paper. Ten inches away from it we put another dot. Both are real dots, but not numbers. Seeing them both *at the same time*, we experience them as related “in space”. The spatial relation or distance between things is called *simultaneous extension*. But space too is an abstraction. We can make models of two- and three dimensions, such as a circle or a globe, whose spatial features we can measure. But space

itself does not “exist” as an entity and thus cannot be measured. It has no number, energy, life, etc. *We cannot reduce the spatial aspect to anything else*.

When I drop my pencil, it starts moving down, which takes time. The pencil is a real, existing entity, and it really moves. We can measure the time the pencil takes to reach the floor and draw a picture of its course while falling. But by itself, motion does not move: it is an abstract aspect which does not exist as an entity which we can count, measure or observe. *We cannot reduce motion to anything else*.

The pencil also shows another aspect to us. First of all, we can see it. It is a real thing with an identity of its own. We know about its interaction with us, with the air it fell through, and with the floor it dropped on. From its fall to the floor we found that the pencil took time to move, without changing its identity. It also takes time to interact with other real entities. Physicists have abstracted the “forces” that govern the quality and strength, i.e. the *energy*, of such interaction, and called them gravity, electromagnetism, weak and strong nuclear forces. For *real entities* to exist and to allow us to abstract the aspects they display, they *must exist for a period of time* as individual entities. But again, energy does not exist as an entity which we can observe. Hence, *we cannot reduce the aspect of energy to anything else*.

There are no real, observable, entities which display only the numerical, or the spatial, or the kinetic aspect, or all three together. We can only make a model of them. On the other hand, *all real entities display the first four aspects i.e. also the aspect of energy*. To allow us to call something *physical matter* it must display these four aspects. However, by the same token, there is no logical argument to turn it around and to state that all real entities which display these four aspects are *nothing but* physical matter, leaving out the other aspects many entities display as well. Such an erroneous conclusion may have accounted for the deification of “matter” by the old Greeks, as well as by many modern scientists, who became adherents of the religion of materialism.

There has been a long battle about the origin of life, initiated by scientists who reject the creator. Being “earth

bound”, they seek the rise of the “first living thing” on earth, i.e. inside of creation, with the aid of the theory of abiogenesis. Because this issue is of fundamental importance for all further work on origins in science, the author has devoted a lengthy study to the theories devised to explain how this could have come about, in his *Alive, an enquiry into the origin and meaning of life*.¹⁷

Most modern scientists accept the theory that all atomic and molecular entities always move and interact with one another *at random*. Even which molecule in a solution aligns with another one for crystal formation occurs in random fashion, they believe.

They agree that all living beings display functions not found in non-living matter. They also acknowledge as one of the principal characteristics of living beings that all their material components, atoms and molecules, *do not move at random*, but are under the direction of the whole living being.

They concede that a living cell moves its material components in ways that are coordinated, regulated and timed in such a way that the integrity of the cell remains intact; it directs them in utterly non-random fashion. They conclude therefore that, according to generally accepted theories, physical particles *always* interact in random fashion, *except when they do not*. We thus have the situation that all molecules are equal, but some are more equal than others, to paraphrase George Orwell. This is a typical example of what Dooyeweerd called the inevitable *antinomy* (self-contradictory statement) one gets ensnared by when one tries to reduce one aspect to another one.

Molecular biologists investigate the chemical and physical interactions which occur in a cell. They cannot fathom why it does so and how a living entity can cause material processes to occur. There is no explanation of how a living thing can reach across the barrier between what lives and what is dead and make the dead become a component of what lives. Dead material is never seen to do that. The riddle is not solved, but easily abolished, when one, with Dooyeweerd, accepts the fact that aspects, law-spheres, like the physical and biotic one, are not

“things” that do something, but abstract law-structures, like color and gravity that “do” nothing. It is the bearer of such aspects, the dead molecule or the living cell, that does the “doing”.

The objection has been made that no one can prove that abiogenesis cannot happen, which is true. No one can prove that something which has not happened, can never happen in the future. But something can not be *true* and *not true* at the same time and in the same sense. That would be irrational.

The main argument against the theory of abiogenesis is that it states that, some time in the past, molecules *did not behave at random* (in order to give rise to the first living thing), while at the same time retaining the theory that molecules *always behave at random*. This is of course irrational. Hence the theory of abiogenesis must be scrapped.

No one knows what “life” *is*, any more than what a number *is* or what space *is* or what motion *is* or what energy *is*. One of the most prominent advocates of materialism and abiogenesis in this century was the Russian chemist A.I. Oparin. He emphatically admitted that no one knows what life is. But, he added with unwarranted optimism: “we will find out what it is when we have made the first living thing in our laboratory”.

Being an aspect, life is not an “it”, but a way things function; it indicates a particular kind of property which living things display and which non-living things lack. It is not a thing we can manufacture, put on the table, add to particles of matter, and declare them to be alive. It is not a real thing with an individual identity, but a mode of existence which some entities possess. Hence we must conclude that *we cannot reduce life to anything else*.

The same features are encountered with the next aspect: that of psychology, i.e. psychic phenomena such as perception, emotion, feeling, like those displayed by the creatures of the animal kingdom. No one knows what feeling *is*. But we all know from naïve experience what we mean by mentioning these phenomena. And we know that there are living beings cannot feel, such as plants, bacteria etc. But there are no beings with feeling that are not alive. Dead things do not feel! Which means

that *we cannot reduce the aspect of feeling, the psychic aspect, to that of life*.

The same holds for the aspect of logic. Animals cannot consciously formulate abstract concepts. Neither do they display the specifically human aspects whose core concepts are the *conscious awareness and knowledge of faith, morals, justice, aesthetics, economy, social interaction, formation of symbols for transmission of information (such as language), and cultural formative power (requiring cultural-historical formative power)*.

Dooyeweerd has convincingly demonstrated that none of these aspects can be reduced to any of the others. The first reason is of course that through *intuition* we all know what we mean by them, and yet, we cannot explain them. From observing things and drawing conclusions one can apply the law of logic that something cannot be true and not true in the same sense and at the same time (like the “random and *not* random interaction of molecules”). Although we *believe* (and thus know) that God created us with the ability to recognize it, no one can show why there should be such a law of logic. The second reason why we cannot reduce one aspect to another one is demonstrated as follows: just like we accept that there is a logical aspect to all we do, we accept the fact that we need *cultural power* to produce an artifact.

Similarly, every transmission of thought requires *symbolic* artifacts, (signs, letters, speech etc.), the *cultural power* to produce them, and the application of *logic* when doing this, (in order to be understood by others).

We saw that every feeling being is alive, while not every living being can feel. In the same way, every act of a linguistic or cultural nature requires the application of logical thinking, but a logical train of thought does not need to have a linguistic or cultural qualification. An this principle of uni-directional dependency and irreducibility of aspects holds across their entire range.

All this shows that none of these (cultural, linguistic, social, etc.) aspects can be mutually reduced, or to that of logic. Nor is the converse possible. Each aspect has its real place in the order of creation.

We can be correctly convinced that we have been treated unjustly, without having any ethical justification for this: we do not need to show that he/she does not love me. Yet, if we know what is morally correct, e.g. to love someone as a fellow human being, we must treat that person justly. In other words, a deed qualified by the juridical aspect is not qualified by that of love. But a deed qualified by the ethical aspect certainly displays the juridical aspect. This shows that the juridical aspect is different from the ethical aspect, and neither can be reduced to the other.

One cannot determine the economic value of something without having interaction with other humans whose opinion is needed for agreeing or disagreeing to it; economics requires social interaction. But one can interact with someone else without getting into economic values. Therefore, the economic aspect cannot be reduced to that of social interaction. And neither can be reduced to the other.

I can have no social interaction without transmitting information and ideas to others, i.e. without using some symbols (the linguistic aspect); I cannot use symbols without having the power to devise them (the cultural-historical aspect); nor can I use my cultural formative power without logic and expect to make sense in what I do, either to myself or to others.

All this shows that there is a “cosmic” order of “earlier” and “later” for all the aspects we observe. This is not something we have devised; it is something we can only abstract from a reality created in such a way by God. And if, with a view of proving the origin of things or of life, or to elevate one discipline of science as the overriding one, someone tries to reduce a later aspect to an earlier one he assigns “divine” power to the latter and in effect practices a pagan religion. By the same token, no aspect “causes” another one. Aspects are not “things” that can “do” something. They are and remain abstract law-structures.

I. Once more: Scientific analysis.

Dooyeweerd defined the activity of science or theoretic analysis as that of confronting each non-logical aspect we

have abstracted from the entities under scientific investigation with the logical aspect of our thinking. And, he observed, we do the same with the theories we formulate for explaining their functions. That amounts to testing the abstracted aspects, and the theories involved in them, for their logical consistency. In other words, we confront them with our **logical scrutiny**. When we confront these aspects in this manner, Dooyeweerd says:

They stand in an antithetic relation to the human analytic function. They form a coherent framework of modes for experience which belongs to the structure of the human horizon of experience.¹⁸

He emphasized that it is important to distinguish between the *entities* we examine and the *aspects* they display, and thus to avoid viewing an aspect as a concrete entity:

Confusion between these modal aspects and the empirical phenomena that appear in them in our experience has frequently blocked insight into the nature of the 'antithetic relation of thought'.¹⁹

It is therefore not surprising that this confusion, by viewing aspects as entities, and reducing the others to the chosen one, gave rise to many "divinities". And, he wrote, such a reduction has this result:

Regardless of the choice made, it will always turn out to be the *absolutization* of a specific aspect of the horizon of human experience. This is the source of all the *-isms* in the theoretical view of reality, *-isms* which continually strive to **reduce** all, or at least some, of the remaining aspects to modalities of the one that has been absolutized, *-isms* which play their confusing role both in philosophy and in the special sciences (in their appeal to reality).

Now such *-isms* (like energism, biologism, psychologism, historicism, etc.) are uncritical in a double sense....

Logical scrutiny will show that this absolutization "avenges itself by entangling the theoretical thought which is guilty of it in internal antinomies."²⁰ In what follows it will become clear to

what absurdities these antinomies will lead. But also, Dooyeweerd says:

The absolutization cannot derive its origin from theoretical thought itself but suggests the influence of a supra-theoretical starting point....²¹

And if that theoretic starting point is sought inside creation, one is back to reductionism, to pagan worship of the creature.

J. Pagan erring and contradictions.

In the foregoing we saw that in God's creation no aspect can be reduced to any other. We must now explore how scientists, who tried to do so, inevitably had to arrive at self-contradictory, i.e. irrational conclusions. Conversely, there are great opportunities for scientists who base their science on a scriptural foundation to arrive at



Dooyeweerd spent a life's effort to demonstrate that the Christian approach to science has been overwhelmed and misled by pagan thought from the beginning.



science that reflects the real world.

Herman Dooyeweerd spent a life's effort to demonstrate that the Christian approach to science has been overwhelmed and misled by pagan thought from the beginning. First it was the work of Plato, Aristotle and many others, including Philo and Plotinus, who led the Christian scientists in the wrong direction. Augustine tried to apply some corrections, but Thomas Aquinas returned to many of Aristotle's speculations. Dooyeweerd wrote his three volumes of *Reformation and Scholasticism in Philosophy* for the very purpose of showing the disastrous results of this for Christian science and philosophy.²²

Modern philosophers of science have followed in their path by basing their approach to science on an immanent standpoint: they sought the origin of the

universe in this universe itself. This led to the many varieties of reductionism, with their inevitable antinomies.

In his *The Myth of Religious Neutrality* Clouser showed with elaborate examples from modern science that all scientific theories are founded on the religious persuasion of their proponents. Let me give just a few examples of what goes awry in such cases.

He analyzed the statements made by famous mathematicians and showed that some assigned to the mathematical aspect an independence from all else, while all else depended on it. This fits in with the definition of the **divine**. His list contains some famous names, starting with Leibniz:

...he once stated that the formula $1+1=2$ is, like all truths of mathematics, an eternal and necessary truth which would not be affected even if the whole world were destroyed and there were no one to count and no objects to be counted.²³

Hence a human abstraction (a formula) would exist, even if there were no one to do the abstracting. This is a self-contradictory i.e. irrational statement. Clouser showed the same problem of pagan elevation of the relative to the divine with J.S.Mill, B.Russell, J. Dewey, et. al. And he ends that section with:

From the standpoint of biblical religion, paganism appears to ransack the dependent, relative universe for that which is self-existent and absolute. Each aspect of the creation, when divinized, seems to provoke a counter-divinity, each just as plausible (and therefore just as implausible) as the other.²⁴

In his section on physics he finds similar approaches, e.g. with Mach, and Heisenberg who believes that:

...the concepts of math are immune from doubt of any kind and reflect the nature of reality in such a way that not only what they can calculate is real, but whatever they cannot calculate is not real.²⁵

In spite of this similarity in their reductionism, Clouser observes, there is much disagreement about what the concepts in math and physics mean:

In those sciences, conflicting perspectives were reflected in the titles of

the theories: formalist, logicist, intuitionist, phenomenalist, etc.²⁶

These examples show the confusion in two of the "exact" sciences. However, in psychology, he says, the theoretical disarray is even more pronounced

Common to all these theories is the total rejection of allowing into psychology anything about human mental life, and experience such as thoughts, feelings, purposes, and even perceptions.²⁷

For Watson, "consciousness itself, along with its states and contents, are outright fictions". Skinner, not to be undone, claims that:

...inner experiences are not to figure in the science of psychology. His reason is that these experiences never cause behavior, but are instead always caused by it.

On either version, however, the physical aspect is given the status of self-existence. In this way, the materialist perspective presupposes a faith in the divinity of matter, a faith which is of the pagan variety, since it regards some aspect of creation as divine....behaviorism has committed theoretical suicide on the doorstep of psychology.²⁸

This means that these men came to the untenable conclusion that humans don't display the very characteristics which make them human in the first place.

Eric Fromm saw some of the problems in this approach. He admired Marx in his early days, but later on criticized him for proposing:

...that man has an essential nature, while also saying that he creates himself in the process of history, and is nothing more than the 'ensemble of his social relations'.²⁹

Eventually Fromm ended up saying that man is free and not free. As Clouser puts it, he accepted the antinomy, the irrational consequence of reductionism:

Like the Hindu, Buddhist, and Taoist thinkers, he came to regard logical thinking as intrinsically contradictory and misleading....³⁰

For anyone who wishes to explore in depth the ingenuity of scientists to find a new divinity to elevate from among the aspects, I must refer you to Dooyeweerd's main work, his *A New Critique*

of *Theoretical Thought*, especially Vol. I, pp. 19, 31, 404, and II, pp. 37-49, 81, 82, 87, 95, 102-3, 110, 217, 464, 495, 500.

K. The wages of erring.

From the examples given it ought to be clear that elevating one aspect of reality to the position of the divine not only leads man in an apostate direction, but also pushes him over the brink of rationality and gets him ensnared in self-contradictory conclusions. So what is a scientist to do?

It was Abraham Kuyper, the Dutch theologian, politician and statesman, who claimed that there is not an inch in the field of science, where Christ does not say: "it is mine". That of necessity includes the field of logical thought. And it was Herman Dooyeweerd, who elaborated on this theme by first of all demonstrating that our thinking processes are not autonomous. Even here we are bound to the rules set by our Creator, and we must be guided by His word.

That means, of course, that we must eliminate the notions of self-contained "substances" or "entelechies" behind the appearances we observe. We must restore our faith in reality as created by God and stop looking for anything that is self-contained and independent, i.e. divine, in the universe.

Dooyeweerd stressed time and again that our work begins with looking with our common sense, or naïve experience, at entities. There is no theory which can explain it; instead, it is the basis for all our theorizing.

Next, he stated that as scientists we need to discern the many aspects displayed by the objects we observe and avoid deifying them. If we do not, we end up by ensnaring ourselves in self-contradictory consequences from which there is no logical escape. This confusion was so consistent, that Dooyeweerd noted that he could use this as a criterion for what delimits an aspect.

Once we have distinguished the aspects displayed by entities, we try to group them together and thus form an idea of what distinguishes one individual, or type of individuals, from another. All the laws, which together define or describe an individual entity, are called its law-structure.

As mentioned earlier, Clouser has referred to the law-structure of entities

as their *type-law*, when dealing with a group or a certain type. On the other hand, *idionomy* has been used for the variable characteristics in the law structure of a *particular* individual entity, as a unique individual member of a type or group.

Each entity has a *foundational aspect*, which describes the basic characteristic without which it cannot exist. For material entities that is the physical aspect. It is the aspect that determines the realm or *kingdom of physical things*.

The next realm is that of entities characterized by the biotic aspect. They *live*. The physical aspect of living beings is their foundational aspect; they cannot exist without it. But while it is a necessary aspect, it is not sufficient for living. The sufficient aspect which *qualifies* them as living things is the *biotic aspect*. That is their *leading or qualifying aspect*. Together these entities form the *kingdom of living things, up to the plant level*.

The third realm is that of entities which can perceive their environment through their senses, which ability plants lack. They display all the earlier aspects, i.e. to exist they must display the physical aspect, which is thus foundational for them, and they also display the biotic aspect: they are alive. But in order to be called animals, they must display the aspect of sensory perception. Their *leading or qualifying aspect is the sensory aspect*. We call them the members of the *animal kingdom*.

Man displays all the higher aspects, but he is not defined, not qualified by any of them. He can not be qualified as a human being by singling out any of them, not even the logical aspect. They are all necessary for a human's existence. We are created with all of the aspects without exception.

We also distinguish man's activities, the events in his life, and the relationships he forms with others. They are all real and display all the aspects man himself shows. This is the area where the difference between the attitude of a Christian and that of a non-Christian has the greatest impact on the scientific theories and subsequent practice in human relations. And the best way to explore this difficult area is by analyzing each with the aid of the theory of the aspects and by defining which is

their foundational aspect, and which their leading or qualifying aspect.

Science and the world of man.

The view of science, practiced on the basis of Scripture, hinges on the admission that God has created the cosmos that we investigate as scientists. Hence we try to avoid all pagan assertions that there is anything in the cosmos that is divine, i.e. that anything exists independent of God and is the cause for the existence of everything else. That means that we must reject all reductionist theories in our science.

This is of immense significance for how we practice our scientific disciplines, especially in the social sciences. In evangelical circles this effort has been mainly concentrated on the theories related to origins. Thus the debate between creationists and evolutionists has been fought with vigor. But fighting only the pagan concept of origin, which attempts to reduce all of life on earth to the material aspect, is not enough. To focus our efforts on this rather narrow issue tends to engender the impression amongst some Christians that most other theories in science, which scientists in the secular world teach in the other disciplines, may not need to be examined and contested with the same zeal. As a result, most of the humanities have long ago been abandoned to pagan theorists, and any Christians who objected have suffered the fate of being looked at as religious fanatics. This lack of vigor among Christian scientists has been disastrous.

The views of Herman Dooyeweerd and his pupils have demonstrated that, if anything, most secular scientists are as devoted to a pagan religion as we, who try to be Christians, adhere to the scriptural faith. Most humanists brazenly claim that theirs is the scientific position. All those who have discovered their pagan religious presuppositions and reject them, are accused of religious bias!

The laws of logic are critical for our understanding of the world, but they have been strangely perverted or uncritically ignored. Yet, their proper use enables us to spot the self-contradictory consequences of all reductionist theories, as the examples given above clearly demonstrate. And they have a powerful impact for demonstrating the

scientific validity of the scriptural approach.

The norms of economic stewardship over our precious and scarce resources are flouted by every government in the world in the name of equality, justice, etc. And the means used to improve this stewardship are deficit spending and inflation, advocated in the name of economy! Husbanding resources is done through wasting them!

Norms for aesthetic activities are no longer accepted by many artists, designers and literary practitioners. Ugliness and even blasphemy in pictures is financed by government as art and the opposite is rejected as quaint and reactionary.

The norms of justice frequently appear to be subverted. Criminal behavior is reduced to a biotic deficiency, an illness. Hence criminals must not be punished but ministered to by psychiatrists in "correctional" institutions, and are sent out on parole, free to

Fighting only the pagan concept of origins is not enough.

nurse their "illness" and repeat their crimes. On the other hand, their victims often receive no just compensation.

If a crime is especially objectionable, the perpetrator is said to have violated the majesty of the state, not the rights of the victim. Hence he is made to repay his debt by being imprisoned by the state, instead of having to compensate the victim, or receiving a punishment commensurate with his crime.

There is a huge industry, run by litigation lawyers, to sue people or government for discriminating against minorities *et. al.* We now see women, who some years ago were denied a job because they were the wrong gender, being rejected today because they belong to the wrong minority, e.g. being white or black, instead of Asian.

At the same time the laws pretend to enforce the separation of church and state and avoid favoritism for one church over another. But very few in government seem to realize that in

actual practice the laws do no such thing. Instead, the state discriminates against people who adhere to a certain ideology or faith, and favors those who adhere to another. This is especially ominous in the field of education.

The school is *qualified by the logical aspect*: its function is first of all to teach the children about facts in their small world, and how to read and write about them. This is followed by learning how to abstract aspects, starting with that of numbers. Finally they must learn about concepts and scientific theories, and how to confront them with their logical scrutiny.

The state is *qualified by the juridical aspect*: its function is to promote and administer public justice. Now in order to dispense justice to its children for their education the state must ensure adequate access to institutions for learning through laws that set out the rules *without discrimination*. But the state can only do this if it refrains from exposing children to the ideology or religion embraced by government authorities or any other vociferous advocate group in society, if only it constitutes the majority. If government tries to promote or to enforce any of these, which are a matter of what one *believes*, i.e. of *religion*, in education, it applies the theory that one can reduce the faith aspect to that of logic. The irrationality, i.e. antinomy, is the assumption that government can control what people believe. And the net effect is that it automatically discriminates against everyone who does not adhere to an officially approved ideology or religion.

L. The communities of Man.

The social aspect is of crucial importance, since no man lives alone: he is a member of human communities since his birth. But there has been much confusion about what a community is, what must be the guidelines in our social behavior as individuals in the communities, and how communities must relate to their members and to each other.

There have been nearly as many social theories as there are aspects. This is not the place to give an historical overview of them all. That can be found in the third volume of the *New Critique* by Dooyeweerd.³¹ He also gave ten

lectures on the topic, in a more popular form, which are translated in English and published as *A Christian Theory of Social Institutions*.³²

He defines a community as:

....any more or less durable societal relationship which has the character of a whole; joining its members into a social unity, irrespective of the degree of intensity of the communal bond.³³

Clouser³⁴ deals in a concise manner with Dooyeweerd's social theories in general (chapter 12), and with his theories on the state (in chapter 13). In an election year we Christians could learn much from it. Let me just give some of the highlights as found there.

In contrast to the laws governing the aspects shown by inanimate things, plants and animals, those displayed by man prominently reflect God's laws for our behavior. They establish the norms for our communal life. But they can be disobeyed. As Clouser puts it:

One of the main contributions our law framework theory makes to social theories is that it can employ aspectual norms as the standard for what is normal or abnormal about various communities.³⁵

This view is rejected by many political scientists. It raises the issue in social theory of whether norms are *objective or subjective*. Aristotle wrote:

...norms are statements we formulate to express the nature of a thing as guaranteed by its form.³⁶

Clouser asks:

If norms are really 'read' from the nature of things we experience, and theoretical reason is neutral, why doesn't everyone see them alike?³⁷

Because this is not the case, he rejects the objectivist position.

The subjectivist theory holds that norms are merely feelings and biases which people posit as arbitrary guides to their behavior: we must just stick to the facts of social life. But Clouser equally rejects this as a Christian. In addition, subjectivists even disagree among themselves about what "bare facts" are, once all normative judgments have been stripped away.³⁸

The next important issue in all theories about communities is that of

individualism vs collectivism. His answer is simple:

The collectivist theory is wrong because individuals and social communities exist in a mutual correlation in which neither can exist without the other. Neither is 'basic' to the other in the sense required by both individualism and collectivism, because neither was ever the source of the other.

Both were created by, and depend on, God.³⁹

In fact, "...there is no humanly formed community of which they are nothing more than parts".⁴⁰

The immediate practical consequence of a collectivism which sees individuals as *parts* of the community (as has been advocated by thinkers from Plato to Marx) is, Clouser says, that:

Justice is made to be equivalent to whatever tends to preserve the state *in the opinion of the state*.⁴¹

The same has often been the result of individualism. By making the state the servant of a majority of *individuals*, the minority can readily be ignored and even discriminated against, in the absence of a constitution which safeguards the sphere sovereignty of their communities. The result of individualism then becomes the *tyranny of the majority*.

Today the various Western states display quite a few of the characteristics of either collectivism and individualism, or a combination of both. Unfortunately, very few 'democrats' today seem to know what Karl Marx wrote in his *The Communist Manifesto* of 1848. He advocated that the state:

- 1) own all property in land,
- 2) abolish all inheritance of property,
- 3) tax away most profits,
- 4) confiscate all property of "rebels", (i.e. minorities),
- 5) own all banking,
- 6) all means of communication and transportation,
- 7) all instruments of production,
- 8) enrol everyone in "labor armies",
- 9) assign everyone to farming or industry,
- 10) give "free education for all children in public schools".

Clearly, Marxism rests on the theory that all communities which exist side by side inside the state are *part* of the state,

as are individual citizens. And it is here where the analysis of the relation between the aspects becomes of crucial importance for human relations.

Clouser comments:

For one thing to be *part* of another, it will have to:

- 1) depend on the other for existence,
- 2) function in the internal organization of the other, and
- 3) have the same qualifying function as the other.⁴²

Now for *individuals* we must maintain that:

Ad (1) No human being depends for existence on the state, but on his/her parents. They conceive and the mother gives birth.

Ad (2) No one inside the boundaries of a state needs to function in its internal organization, because one can be citizen of another state and leave at will.

Ad (3) No one is qualified by the juridical aspect. Man is not qualified by any one aspect, but transcends them all as their bearer.

As to *communities*, some conform to the definition given above for parts of a whole, such as cities, municipalities, the army and police, etc. which all depend on the state for their existence, function in the internal organization of the state, and must dispense public justice. But there are many major types of social institutions and organizations, which can never be parts of the state or of one another.

Marriage and the immediate family are founded on the biotic aspect and governed by its laws. However, in contrast with the state, both are *qualified by love*. The state can neither originate, nor force people to love, or sustain that love. Hence their communities cannot be a part of the state.

A *business* is founded in the cultural-historical aspect and qualified by the economic aspect. We all know that the state is utterly incapable of impartially distributing goods in the most *economical* manner, and of avoiding handing out favors to those considered politically most correct. Hence it also cannot be a part of the state.

A *school* is founded in the cultural aspect, and qualified by the logical aspect, as argued above. No state

bureaucrat can force children to learn by using the mandate of the state to dispense justice, as the dismal results of public education in large schools show all too clearly. Yet, our society aggressively tries to implement no 10 of the Marxist agenda. By exerting financial pressure, the state forces most of our children to be educated in public schools. All kind of pagan ideologies, including Marxism, are taught there, and thence are gradually implemented in society. We can all see the evil consequences. And the worst part of it is that this is done in the name of democracy. It is typical example of *tyranny of the majority* which denies the minority their right of sphere sovereignty for the community in which to have their children. All this confirms that the school cannot be a part of the state.

The *church institution* is qualified by the *faith* aspect. If the state tries to make the church into one of its parts, as a state church, the functionaries of the church become servants of the state. That means that their administrative decisions cannot be based on the belief in the word of God, or in a pagan divinity, but on what the ruling power decides to be in the interest of the state. This is bound to favor the church, considered most politically correct, and to discriminate against all other churches in totalitarian fashion. Because of this, the state cannot dispense public justice here. But neither can he state enforce any religious faith in its subjects, and thus function as a church state.

Clearly, a state church is not qualified by the faith aspect, and a church state is not qualified by the juridical aspect. A church is thus not a part of the state, nor the state a part of the church. And any political scientist who claims the opposite, is guilty of faulty logic. Both situations are a logical impossibility and therefore more examples of getting ensnared in an antinomy when one ignores the qualifying aspects of our communities!

All these communities mentioned, and many others, are wholes, which exist inside of the whole that is the state. They are said to be wholes, "encapsulated" in the state as a bigger whole. It should be clear now that none of the communities mentioned, each of

which have a different qualifying aspect, can be a part of each other, nor of the state.

The collectivists will deny this, but Clouser gives a definitive and irrefutable answer to that point of view:

...if the state were really all-inclusive, each of the encapsulated sub-wholes would then have their leading functions overridden by the leading function of the state.

This means that encapsulated communities would cease to function in the distinctive ways which correspond to their distinctive structural purposes.

(Emphasis mine, M.V.) Instead, they would all be absorbed into the purpose of legislating and enforcing public justice, and there would be no communities left to accomplish the purposes of earning a living, producing art, educating the next generation, or expressing faith. The point is simple: either we have distinct communities or we do not...⁴³

This has a radical significance for our theory and practice of living in a state, because, as he states:

"Just as there is an irreducible plurality of aspects and no aspect is more real than any other, (the cause of another), so, too, there are irreducible "spheres" of social life to which the natures of the various communities correspond. These spheres correspond to the aspects which qualify social communities.... there is no institution which may rightfully claim to have all-encompassing authority."⁴⁴

And when this is denied, Clouser goes on to say:

But no matter which community is assigned this role by a theory, the view of authority is presupposed to be reductionist, and the view of society which results, is hierarchical and -literally- *totalitarian*.... (and) is utterly at odds with the biblical view that all authority has its source in God.⁴⁵

Unfortunately, the norms for the application of human power are being violated every day. This is especially true for the norms that hold for the interaction between the state and the other communities, each of which have their sphere sovereignty. Modern

collectivism is clearly an overreaction to the prevailing individualism of the previous century with its "laissez faire". That is equally objectionable, and Dooyeweerd amply indicated how both may be avoided.

M. The task at hand.

This then becomes the challenge for all our Christian scholars and scientists: how to apply the scriptural norms for every branch of science. And when these norms are flouted, especially in the field of origins and of the social sciences, their task is to show what causes our problems, and to persuade their fellow citizens to change their ways, and to seek to rehabilitate our sciences, to re-establish truth and justice and to eliminate discrimination.

It is extremely important for Christians to acknowledge that the state has its role to play by strictly adhering to its mandate to dispense public justice. It is not enough to say what the state may not do. The positive role for the state to play must be equally emphasized. For an example of how Dooyeweerd applied his theory of sphere sovereignty I may refer the reader to his essay *The Limits to State Interference in the World of Enterprise*.⁴⁶ His entire oeuvre was directed to applying scriptural commands and norms to all of human society.

We cannot discuss all the aspects of science, which have such an important bearing on our daily lives, nor am I qualified to bring it in depth, such as those can, who make their profession of a scriptural philosophy of science.

Your editor suggested that I give those interested in these matters an idea of where some of the pertinent material can be found. I do this in an overview, especially of the efforts done by the Herman Dooyeweerd Foundation, by translating most of his works into English in the years since his death in 1977.

It is my prayer that God will give America and all of modern civilization the privilege to take up some of the scriptural, and, yes, scientific arsenal that could bring about a true reformation of the sciences in our land.

Dr. Magnus Verbrugge is Vice-president of the Herman Dooyeweerd Foundation.

The Herman Dooyeweerd Foundation

For those readers who are not familiar with the philosopher to whose work this Foundation is devoted, a brief highlight is in order. Herman Dooyeweerd (1894-1977) was by training and profession a legal scholar, but by vocation a philosopher who achieved international stature. In the words of G.E. Langemeijer, himself an eminent professor of jurisprudence, and at the time president of the Supreme Court of the Netherlands and also of the prestigious Royal Dutch Academy of Science, "it can be said that without any exaggeration Dooyeweerd can be called the most original philosopher Holland has ever produced, even Spinoza not excepted".

It was the basic vision of Neo-Calvinism, as articulated by Abraham Kuyper, which provided the inspiration and rationale for Dooyeweerd's labors, which he conceived as a religious calling to contribute to a new vision of the Christian reformation of Western culture.

Dooyeweerd's writings are voluminous: there are at least 200 separate titles covering a wide range of subjects and varying in length from a few pages in the case of some shorter articles to several thousand pages for the major works. Most were written and published in the Dutch language, although some were written by him in English, French and German. Some were translated into English, others into Spanish, Japanese and Korean. His magnum opus was translated as *A New Critique of Theoretical Thought*.

Several smaller books appeared in English translation, such as *Roots of Western Culture*, *In the Twilight of Western Thought*, *A Christian Theory of Social Institutions*, *The Christian Idea of the State*, and some smaller ones. The only books still in print are the *New Critique* and *A Christian Theory of Social Institutions*. Both may be ordered from Paideia Press, P.O. Box 770, Lewiston N.Y. 14092, USA, or in Canada, Jordan Station P.O. Box 1000, Ontario L0R 1S0.

In spite of the dearth of work in English his philosophy has gained a serious international group of followers,

especially in North America. Its significance has been compared to that of Augustine, because "...his theories lend themselves, to a greater degree than is normally the case, to an exchange of thought with persons of different persuasion."

Unfortunately, the dearth of English translations to date has been a major obstacle in allowing in depth study of Dooyeweerd's philosophy by a wide group of scholars worldwide. It is for this reason that the heirs of Dooyeweerd, with the help and advice from scholars conversant with his philosophy, have incorporated the Foundation for the specific purpose to translate and make ready for publication, his major works, and, eventually, his entire oeuvre.

The following works have been translated thus far, and are ready for publication:

Encyclopedia of Jurisprudence, 1245 pp.
Reformation and Scholasticism, three volumes, approx. 1700 pp.
The Struggle for a Christian Politics, 264 pp.
Christian Philosophy: an Exploration, 215 pp.
The Dangers of the Intellectual Disarmament of Christianity in Science, 60 pp.
The Significance of the Law Idea for Jurisprudence and Philosophy of Law, 112 pp.

The Foundation is negotiating with a well known Reformed College to have a Dooyeweerd Center established, which will teach his philosophy to undergraduate students, continue the work of having translations made and have them published, and to promote the spread of this philosophy through scholarships and other means. It is expected that this Center will be established early in 1993, in time for organizing the centennial of Dooyeweerd's birth in 1994.

It is our prayer that all these activities will be well received, and be supported, by the Reformed community worldwide. We will gladly keep you up to date and encourage any scholar familiar with the work of Dooyeweerd, to contact us for future information.

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1. Herman Dooyeweerd, *A New Critique of Theoretical Thought*, Vol. III (Philadelphia, Pa.: The Presbyterian and Reformed Publishing Co.) p.76. Further references to this work will be abbreviated as *N.C.*
2. Analysis: "a separating or breaking up of any whole into its parts so as to find out their nature, proportion, function, relationship, etc". (Unabridged Webster Dict.)
3. R.A.Clouser, *The Myth of Religious Neutrality* (Notre Dame: University of Notre Dame Press, 1991) p.52.
4. Clouser, p. 53.
5. Cf. Clouser, chapter 2: "What is religion?"
6. *N.C.*, Vol III, p 80.
7. *Behavior and Evolution*, A. Rae & G.G. Simpson, Eds., (New Haven: 1958). Dooyeweerd demonstrated that this concept of 'telos' 'moves in a vicious circle'" (*A New Critique of Theoretical Thought*, Vol. III, p.745).
8. Clouser, p.119
9. Cf. my *Alive: The origin and meaning of life.*, (Vallecito Calif.: Ross House Books, 1984) p.138. From here on referred to as *Alive*.
10. *N.C.* I, p.31.
11. *N.C.* II p.97.
12. Cf. my *Alive*, for an exhaustive enquiry into the theory of abiogenesis (the origin of "life" from inanimate matter).
13. Clouser, p. 148.
14. Cf. H. Dooyeweerd, *Christian Philosophy, an Exploration*. J. Vriend, Transl. from *Verkenningen*. (Buyten and Schipperheyn, Amsterdam: 1962). Unpublished translation mss., p.13. This work will be referred to from now on as *Chr. Phil.*
15. Cf. *N.C.* Vol II, p.331 ff.
16. *N.C.* loc. cit.
17. Cf. M. Verbrugge: *Alive, an enquiry into the origin and meaning of life.* (Vallecito, Calif.: Ross House Books, 1984).
18. H. Dooyeweerd, *Chr. Phil.*, p.12.
19. H. Dooyeweerd, *Chr. Phil.*, p. 12.
20. H. Dooyeweerd, *Chr. Phil.*, p.28.
21. H. Dooyeweerd, *Chr. Phil.*, p.28.
22. They soon may be published in the English translation, which is already complete.
23. Quoted by E. Cassirer in *The Philosophy of the Enlightenment* (Boston: Beacon Press, 1961), p. 237.
24. *The Myth*, p.125/6
25. *The Myth*, quoting Heisenberg, *Physics and Philosophy*, (New York: Harper, 1958) p 92.
26. *The Myth*, p.141.
27. *The Myth*, 146.
28. *The Myth*, 150/1.
29. *The Myth*, p.157.
30. *The Myth*, p.160.
31. See Especially Vol. III, pp 164-693 for community in general, also for marriage and family, state and church.
32. Herman Dooyeweerd, *A Christian Theory of Social Institutions* translated by M. Verbrugge, (Lewiston, N.Y. U.S., and Jordan Station, Ont., Canada: 1986).
33. *N.C.* Vol. III, p.177.
34. *The Myth*.
35. *The Myth*, p. 231.
36. *The Myth*, p.234.
37. *The Myth*, p.237.
38. *The Myth*, p. 234
39. *The Myth*, p. 240.
40. *The Myth*, p.240
41. *The Myth*, p.242.
42. *The Myth*, p.245.
43. *The Myth*, p.248
44. *The Myth*, p.249.
45. *The Myth*, p.253.
46. *The Journal of Christian Reconstruction* Vol. X, No. 1, p. 115 ff.