One of the most characteristic evolutionary or cosmogenetic processes is a gradual transition from one mode of development to another. The time has now come, speaking from a De Chardinesque point of view rather than merely reflecting and relying upon Teilhard’s views, to compare and contrast the dominant modes of growth and development in the different spheres of emergence which supervene upon and enfold within themselves their predecessors in the evolutionary hierarchy.

For example, we may compare and contrast the dominant types of causality to be found in the geosphere, the biosphere, and the noosphere. Even in the geosphere causality has a certain ambiguity. The discovery that on a microscopic level causality in the geosphere is ambiguous rather than rigidly deterministic is connected with the work of the great physicist Heisenberg in the 1920’s and with the principle of indeterminacy which he propounded. However, by the use of statistical techniques it was possible to show that this microscopic ambiguity had almost no tangible and ponderable consequences on even the most modest macroscopic level. In fact, the principle of indeterminacy, though it might bother old-fashioned and deterministic physicists, made very little difference to any actual state of affairs. Certainly some philosophical interpreters of the principle erred by equating indeterminacy with freedom.

In the biosphere, however, we note a considerable intensification of the ambiguity of causality, and the consequences of the ambiguity become more significant and effective. For example, the enzymes serve as catalytic agents which apparently perform no other function than that of facilitating certain types of biological process. However, it is always possible that an enzyme which more usually or even normally facilitates one type of process may on some rare occasion facilitate another. Some researchers, for example, think that this may be very relevant to the problem of the causes and possible cures of cancer.
Obviously, a deterministic, “one-one” conception of causality means that if we have defined and described the cause with sufficient accuracy then we shall recognize that only one effect is possible. Ambiguous causality means that each cause must be understood in relation to a whole spectrum of possible effects, of which some, of course, are no doubt very much more probable than others. What we are saying is that in the geosphere this element of ambiguity is indeed present and traceable, but that it has no effective impact and makes no significant difference in at least the overwhelming majority of overt occasions. In the biosphere, however, it becomes increasingly impossible to ignore the ambiguity of causality, for now it is a factor the consequences of which can be traced in the record of what overtly occurs.

In the noosphere this ambiguity of causality becomes increasingly more noticeable. For the conscious beings who inhabit the noosphere find in their immediate experience of existence so much evidence of the indeterminism of their situation that they are sometimes tempted towards an almost dogmatically indeterministic interpretation of themselves, which is gravely mistaken. There are indeed deterministic elements in the conscious experience of life in the noosphere, but they are so increasingly ambiguous that they are often hardly recognized as deterministic at all.

In secularized philosophy the problem of freedom has for many centuries been diagnosed and discussed as a question of the relationship between an alleged entity called the “free will” and an alleged type of process which we may entitle absolute determinism. In Christian theology, however, as we can see in Augustine, Boethius, and many other classical writers, the controversy about freedom takes a very different form. In this context the question is not whether man is determined or not, but rather whether he is determined by impersonal forms of process that operate very effectively at levels beneath him in the hierarchy of being—evolution is only our version of the antique hierarchy of being hypothesis—or whether, on the contrary, he is capable of allowing himself to be determined by personal forms of process which prevail absolutely at levels of being superior to his own. In other words, whereas the problem of freedom is visualized by the purely secular philosophy as the free will vs. determinism controversy, the theologian interprets it as a divine providence vs. fixed fate controversy. It certainly appears to be the case that, although there is not and cannot be an absolutely indeterministic situation, the developing creation of the world renders causality increasingly ambiguous and the condition of creatures an increasingly flexible one, permitting in the noosphere a real measure of limited self-direction and autonomy. The consequence is that in this ambiguous situation men