Order.

In most religions the world is believed to be an embodiment of divine wisdom. Paradoxically, the divine is both present (immanent) and absent (transcendent). This paradox is expressed in a hierarchy of degrees of manifestation of divine wisdom, each representing a kind of order. Further, both the natural and the moral order are seen as normative. In the Abrahamic religions order is created and, therefore, dependent on the Creator. Since order is a manifestation of divine wisdom, it reveals knowledge about God. Accordingly, the created order has been seen as a unity in diversity, a machine, a work of art or an embodiment of reason, beauty and goodness. Disorder invaded the natural and the moral order, which require re-creation. In the Gnostic religions, however, disorder originates from an evil Creator who battles a good Redeemer. In response, Irenaeus (c. 130-200) emphasized that the Creator and Redeemer are one God who controls disorder and restores order. John Calvin (1509-1564) added that the created order required constant divine support to protect it from collapse into disorder: it could not exist independently. In contrast, for John Haught (1942-), disorder is the price God paid to grant freedom and independence to the created order.

The sciences also recognize different kinds of order as well as an order for the different kinds of order. One kind of inanimate order concerns energy. It refers to interactions with irreversible cause and effect relationships (heat melts ice). The order of life involves complexity. A complex sequence of molecules (DNA) carries information, which is transmitted from parent to offspring in a causal genetic relation. Mutations are not directed by the environment or the needs of the organism. This random order of mutation and the non-random order of natural selection produces organisms that are adapted to their environment. The order of reasoning

involves the self-reflective awareness of norms for making distinctions such as the principle of identity and the principle of the excluded third as well as norms for correct argument. The spiritual order concerns one's relationship with the divine. It is often characterized as a form of love, for instance, in Hinduism and in the Abrahamic religions. These kinds of order represent both ways in which entities exist and ways in which we experience them.

The kinds of order are integrated in a particular sequence in entities. In living things, the order of complexity such as that of DNA requires the order of energy with its chemical interactions, but chemical interactions do not require the complexity of living things. In a scientific explanation, the order of reasoning requires the order of sensation, but sensation does not require knowledge. In religious faith, the spiritual order of love requires the order of reasoning with its distinctions, but not vice versa. Thus any kind of order is a necessary but insufficient condition for a higher kind of order. The complete hierarchy of kinds of order is found in persons and includes number, space, motion, interaction, life, sensation, perception, reasoning, human relations, lingual expression, legality, morality, and spirituality. Further, the order of life is not reducible to the order of energy. Nor can reasoning be reduced to sensation (empiricism) or love to reasoning.

Entities can be ranked according to their highest kind of order, producing a hierarchy of entities. Chemical reactions exchange energy, but they do not transmit information to offspring. Plants transmit information to offspring, but they do not have knowledge. Animals have knowledge, but no spirituality as people do. Thus, the highest order in which entities function is the order of energy for chemical reactions, the order of life for plants, the order of knowledge for animals and the order of love for people.

One necessary condition for a mutual relevance of scientific and religious perspectives on

order is that it is interpreted as divine action in the world. This, however, is not sufficient because a religiously interpreted order can be explored in science apart from its religious meaning (methodological atheism). Or the Creator may be seen as utterly other than the created order so that what is known about nature is irrelevant for what could be known about God and vice versa (Eastern Orthodoxy, voluntarism in Western Christianity and Islam).

One sufficient condition for mutual relevance is that religious views of natural order serve in science as presupposition, sanction, motive, criterion for theory choice, criterion for the choice of kinds of explanation (regulative principle) or as part of explanations (constitutive principle) and vice versa. The rejection by Albert Einstein (1879-1955) of the probabilistic view of quantum physics was regulated by his belief that "God does not play dice." In reverse, the switch from a fixed to an evolving order of nature has motivated the development of evolutionary theologies and has constituted new conceptions of God, creation, divine grace, divine power and redemption. For instance, instead of conceiving of divine power as coercive force it is seen as persuasive love because divine love implies giving the universe the freedom to produce itself. Here, the biological idea of random mutation has been translated into the religious idea of a nature free from divine coercion.

A different type of sufficient condition is met in reductionism. In it a scientific definition of order is generalized into a metaphysical "ideal of order." For instance, the empiricists as well as the neo-positivists reduced the cognitive order to the order of sensation. Since God cannot be known by sensation, knowledge of God is not possible and religion is reduced to belief without grounds in knowledge. This places knowledge and belief in different categories preventing a cognitive relationship between them. Similarly, Edward O. Wilson (1929-) replaced a spiritual description of God as a being independent of matter with a naturalistic description: God is

nothing but an objectification of the imagination. This was his way of including God in a kind of order science can deal with by gathering empirical evidence. By re-describing God, sociobiology changed the content of religious belief and theology.

A third kind of sufficient condition is satisfied when a reduced view of order functions as religion (scientism). Biology functioned as (anti-)religion when Jacques Monod (1910-1976) and Richard Dawkins (1941-) interpreted the randomness of mutations to mean that there is neither God nor purpose. Or when Wilson wrote that scientific materialism and evolutionism are his substitute religion in which the purpose of life is to promote evolutionary progress. This substitute religion motivated his re-description of God and, thereby, constituted the content of sociobiological explanations of religion. Here, science as a substitute religion influences religion.

Bibliography.

Clouser, Roy A. "A Sketch of Dooyeweerd's Philosophy of Science." In Facets of Faith and Science, Vol. 2: The Role of Beliefs in Mathematics and the Natural Sciences: An Augustinian Perspective, ed. Jitse van der Meer. Lanham. The Pascal Centre / University Press of America.

Haught, John F. (2000) God after Darwin: A Theology of Evolution. Boulder. Westview Press.

Lovejoy, Arthur O. (1936) The Great Chain of Being: A Study of the History of an Idea. New York. Harper & Row.

McGrath, Alister E. (1998) The Foundations of Dialogue in Science and Religion. Malden, MA. Oxford, U. K. Blackwell Publishers.

Midgley, Mary (1992) Science as Salvation: A Modern Myth and its Meaning. London and New York. Routledge.

Nasr, Seyyed H. (1996) Religion and the Order of Nature. New York and Oxford. Oxford University Press.

Peacocke, Arthur (1993) Theology for a Scientific Age: Being and Becoming - Natural, Divine and Human. Enlarged edition. London. SCM Press.

Torrance, Thomas F. (1980) Christian Theology and Scientific Culture. Belfast. Christian Journals Ltd.

Torrance, Thomas F. (1981) Divine and Contingent Order. Oxford. Oxford University Press.

Torrance, Thomas F. (1989) The Christian Frame of Mind: Reason, Order, and Openness in Theology and Natural Science. Colorado Springs. Helmers & Howard.

van der Meer, Jitse M. (2000) "The Engagement of Religion and Biology: A Case Study in the Mediating Role of Metaphor in the Sociobiology of Lumsden and Wilson." Biology and Philosophy 15: 669-698.

Dr. Jitse M. van der Meer, Professor in the Departments of Biology and Philosophy, Redeemer University College. Ancaster. Ontario. Canada.