ture—can make social engineering a scientific enterprise. If true, this would be a significant breakthrough, and ''technological man'' would turn out to have an awesome control of the future unshared by any previous culture. Not all, however, are agreed that the computer is so powerful, or that social engineering is any more palatable in this than in any other form.

The 1960s controversy triggered by C. P. Snow's *The Two Cultures* is also relevant to philosophy of technology. Although critics retorted that neither the scientific nor the humanistic community is unified enough to be called a culture, Snow seems to have put his finger on a real split in technological culture. In a world of high specialization, few scientists or engineers can lay claim to any greater degree of humanistic sophistication than an amateur interest in poetry or music or perhaps politics; nor can the average academic humanist usually claim that he even attempts to keep up with scientific knowledge. This split, whatever its explanation or prospects for healing, says something profound about technological society. A philosophy of technology, whether it attempts to explain or to solve the problem, must in some way come to grips with it.

It is in this context that some Catholic writers have turned to the thought of Pierre TEILHARD DE CHARDIN. His vision of the future convergence of science and religion has seemed to them to offer a way out for contemporary man. Others, however, see Teilhard de Chardin as distorting science and demeaning religion; they feel that a philosophical synthesis adequate for a scientific or technological age is yet to be discovered.

Finally, among these interpretations of technology, there seems to be no end to popularized ''philosophies of technology.'' The late 1960s and early 1970s in particular witnessed a flood of publications of this sort. Some of the most popular authors included Charles Reich, Theodore Roszak, Alvin Toffler, and, a little earlier, Marshall McLuhan. How many of their works will turn out to be ephemeral and how many will contribute to a serious philosophy of technology remains of course to be seen. No serious student of the history and philosophy of technology, however, can afford not to keep up with the popular literature. It reflects an aspect of technology—its acceptance in the popular mind—that must be included in some fashion in any comprehensive treatment of the issue. The same is also true of science fiction.

See Also: TECHNOLOGY, SOCIAL EFFECTS OF

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[P. T. DURBIN]

TECHNOLOGY, SOCIAL EFFECTS OF

A consistent, underlying theme of Vatican Council II is the importance of considering the specific qualities of culture and society shaping the contemporary world in its uniqueness. The Council directed its considerations to the concrete world of the 20th century, not to some abstract world without specific temporal definition. The concentration on this particular moment in space and time was to assure a proper understanding and embodiment of the reality of the Christian God who is appreciated as One who is immanent in transcendence, incarnate in divinity. The Lord is now present to and active in this world with all its uniqueness and particularities. The *Constitution on the Church in the Modern World* describes the present moment in human history as one profoundly unique in both social and cultural dimensions, so much so that one can speak of ''a new age in human history'' (*Gaudium et spes 54*). The range of change which brought about this new era is so pervasive that the Council admits that culture has taken a new form which in turn creates new ways of thinking and acting. To be a vital presence and force in this new context, the Church must understand this new situation and express its life in accordance with the dynamics of this new cultural setting.

Specific reference is made (ibid.) to the developments in modern technology because of its central influence on patterns of thought and action. Human thinking is more and more in the form of a ''technological mentality,'' a way of thinking that emphasizes analysis, planning, the use of specific techniques and, above all, the control of all the components in the situation. Besides the mindset which dominates a technological society, there are also the tangible results of that thinking in certain systems of operation and in the products created by research, planning, and production. From a religious point of view, the total range of technology deserves serious consideration and critical evaluation in terms of whether it enhances or detracts from the realization of the Kingdom of God on earth.

Impact of the Technological Mentality. This assessment takes on decided critical importance when the investigation concerns the effect of a particular aspect of technology on the human person. The technological mentality tends, for instance, to approach the human as object, number, an element of a process, a mere part of a material whole. If the human subject is reduced to the lesser proportions of object, if the sacred dignity of each person is judged worthwhile only to the extent that it contributes to some desired goal, then something God-given and essential is lost.

A further area of concern is the potential modification of the biological substratum of the human person through the rearrangement of the basic components of the living organism. Needed for this kind of assessment is an open and knowledgeable discussion between theologians, scientists, and informed citizens as to the ramifications of that kind of technological modification. In general, what is becoming clear with today's profound and rapid technological changes is that the possibilities for both good and evil are enhanced with the passage of time. TEILHARD DE CHARDIN pointed to this enhancement in his reflections on developments in science and technology. The harnessing of nuclear energy clearly gives evidence of the heightened ambivalence inherent in much of contemporary technology.

A more developed technology can be appreciated as incremental to the human ability to accomplish desires and plans effectively. The contemporary phenomenon of energy-consciousness brings to mind the dependence on energy sources outside ourselves that are needed in order to survive in the contemporary world. With more energy at their disposal, people can accomplish more, are more freed from a certain type of limitation. Their work can be done in more suitable surroundings. The products created can be mass-produced, thus making them potentially available to a greater number of users.

Perhaps in no other area has the impact of modern technology been more felt than in that of communication and travel. People have been brought closer together in a spatial sense which creates at least the possibility of a greater sense of community and an appreciation of the commonness of humanity throughout the earth. Of itself, technology does not create interpersonal closeness but it helps to create the conditions out of which real community can be established.

Yet the ambivalence of modern technology can be shown in referring to how technology makes people more self-sufficient, more able to accomplish their goals by themselves. They can travel alone in automobiles, be entertained in the privacy of their own dwellings by their own media center. Food can be prepared without outside assistance. It might be argued that modern technology has contributed to the ironic situation that people live in a time when community is facilitated by many inventions, yet persons feel quite alone and alienated from their sisters and brothers.

Impact of Technological Products. Much the same can be said about the products of technology. With a general expectation that all persons could benefit from possession of these products, many, in fact, do not. This raises questions of social justice, particularly with reference to the equitable distribution of goods and services. Part of the prophetic role of the Church is to alert its members and the world at large as to violations in the area of social justice. As life in the world becomes more dependent on the products of technology, sensitivity to availability and distributions becomes more a moral issue.

As humanity grows more dependent on and enamored of its technological might, it can tend to assume a practical autonomy from any other sources of energy outside itself and its tools. The need for God is eclipsed or considered meaningless because the areas of health, wealth, and happiness are now dominated by human creations, While this result is not at all mandated by an expanding technology, it must be admitted that many areas once of religious concern are now under the influence of a more effective technology.

Implied in the general cultural changes that accompany an ever-expansive technology is a requirement, therefore, that the proper range of religious interests be reexamined. Technological developments of the last century have given a new shape to the world, but it need not be said that the world is necessarily Godless. It can be argued that the extension of human ingenuity into ever more effective technologies is part of the God-given human capacity to further bring the world into the dynamics of life in the KINGDOM OF GOD. This can be particularly so when the results of technology are a more successful feeding of the hungry, sheltering of the homeless, or implanting of knowledge where ignorance formerly held sway. The perception brought forward in *Gaudium et spes* was that a careful distinction should be made between human progress and the realization of the Kingdom of God (30). Nevertheless, where human progress serves ''to a better ordering of human society,'' the concerns of the Kingdom are being realized. The world is given to humanity by God as a trust. Like good stewards humans must respect the wished of the owner while at the same time using whatever resources there are to extend the love of God into the perfecting of the world for the enrichment of the human spirit and in the service of our common humanity.

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[D. M. THOMAS]

TECHO, NICOLÁS DEL

Missionary and historian of Paraguay; b. Lille, France, Nov. 28, 1611; d. in the Reduction of Apóstoles (Paraguay), Aug. 20, 1685. He entered the Society of Jesus on Jan. 10, 1630, and arrived in Buenos Aires at the end of 1640 as a member of the expedition of Father Díaz Taño. From 1645 until his death he served in the Guaraní missions, sometimes as general superior. The only exceptions occurred during 1671, when he was teacher of novices in Córdoba, and between 1677 and 1680 when he was rector at Asunción. He wrote the *Historia provinciae paraguariae Societaties Jesu* (Leija 1673) and *Decades virorum illustrium paraguariae Societatis Jesu* (Tyrnau 1759). This second work (only two copies are extant) includes 90 biographies of Jesuit missionaries in Paraguay. Of these Techo wrote 50; the rest were written by Nicolás Schmid from the notes of Ladislao Orosz.

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[H. STORNI]

TEGERNSEE, ABBEY OF

Benedictine monastery in Southeast Bavaria, founded (746) in honor of the Savior by Counts Adalbert and Otkar of Warngau and Tegernsee. In the 9th century after an early period of prosperity, it was deprived of many of its possessions by Count Arnulf the Bad. The Magyar invasion of 907 completely destroyed it. It was restored in 979 by Otto II who invited Hartwich, a monk of ST. MAXIMIN of Trier, to become abbot. It soon became a flourishing center of monasticism, repopulating other abbeys that had been destroyed earlier in the century. Learning and the arts flourished, and to this period belongs the monk-poet Froumund (d. 1012). A glass works for fine stained glass was established at this time. During the 14th century the abbey suffered from wars in southern Germany and from the prodigality of several abbots; the practice of limiting admission to members of the nobility contributed to its decline. An apostolic visitation in 1426 decreed a thorough reform and forced the incumbent abbot to resign. Caspar Ayndorffer, at 25, the youngest member of the community, was then appointed abbot. During his long reign (1426–60) discipline was restored, and the customs of the Abbey of MELK were adopted as the basis of reform. From Tegernsee the reform gradually spread to other Bavarian monasteries and led to the formation in 1684 of the Bavarian Benedictine Union which comprised 19 monasteries under the abbot of Tegernsee who had the title of *Primas Bavariae.* The abbey flourished until it was suppressed in 1803. Its rich library of 60,000 volumes, 6,600 incunabula, and 2,000 MSS was transported to the National Library at Munich.

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[C. FALK]

TEILHARD DE CHARDIN, PIERRE

Paleontologist and proponent of a synthesis of the evolutionary perspective of modern science with the Christian world view; b. Sarcenat (Orcines, Puy de Dôme), France, May 1, 1881; d. New York City, Apr. 10, 1955. After preparation at the Jesuit College of Mongré, he entered the Society of Jesus (Province of Lyons) in 1899. He studied philosophy in Jersey, theology in Hastings, and was ordained in 1911. In 1912 he began work in paleontology at the Museum of Paris under the direction of M. Boule. Interrupted in his studies by service as a stretcher-bearer during World War I, he subsequently completed his doctoral thesis, *Les Mammifères de l'Éocèen inférieur français et leur gisements,* and successfully defended it at the Sorbonne in 1922.

Teilhard taught geology for a brief period at the Catholic Institute of Paris but soon left for China, where he resided from 1923 to 1946. There, as a consultant to the Geological Survey, he focused his attention on the stratigraphy and paleontology of northern China and Asia. In this role he collaborated in the excavations at Zhoukoudlanzhen near Beijing and in the discovery of *Sinanthropus.* He participated also in numerous scientific expeditions in Central Asia, India, and Burma. From 1946 until his death, at first in France, then in New York as a fellow of the Wenner-Gren Foundation for Anthropological Research, he gave himself to the elaboration of an anthropogenesis, a kind of new anthropology treating the genetic structure of humanity as a special biological unit of planetary scope. The foundation sent him to South Africa on two different occasions to organize expeditions to search out the origins of human life south of the Sahara desert. His correspondence [*Letters of a Traveller* (New York 1962)] is a basic source on his career and the evolution of his thought.