

Thanatology

Introduction

Thanatology is the academic, and often scientific, study of death among human beings. It investigates the circumstances surrounding a person's death, the grief experienced by the deceased's loved ones, and larger social attitudes towards death such as ritual and memorialization. It is primarily an interdisciplinary study, frequently undertaken by professionals in nursing, psychology, sociology, psychiatry, social work and veterinary science. It also describes bodily changes that accompany death and the after-death period.



The word is derived from the Greek language. In Greek mythology, Thanatos (θάνατος: "death") is the personification of death. The English suffix *-ology* derives from the Greek suffix *-logia* (-λογία: "speaking").

Goals

In most cases, thanatology is studied as a means towards the end of providing palliative care for dying individuals and their families. According to the World Health Organization, "palliative care is an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness," involving the "treatment of pain and other problems, physical, psychosocial and spiritual." Thanatology recognizes that, ultimately, death is inevitable. It works to develop guidelines to ease the process of dying.

Thanatology does not *directly* explore the meaning of life and of death. Medically, this question is irrelevant to those studying it. Some medical texts refer to inquiries of the meaning of life and death as absurd and futile. However, the question is very relevant to the psychological health of those involved in the dying process: individuals, families, communities, and cultures. Thanatology explores how the question affects those involved, not the question itself.

Many individuals who study thanatology do so because they believe that life is valuable. Death is the end of life, making the study of it worthwhile by association. Their primary goal is to ease and improve the dying process, both for the dying and for that person's loved ones. This goal is consistent with the Hippocratic Oath.

There is also a branch of thanatology called music-thanatology which focuses on the use of "music vigils" to help the individual and their family. A vigil consists of one or a team of music-thanatologists who visit the dying person. They play the harp and sing a certain repertoire of music that is very helpful to the patient and their family. Often after a vigil, the dying person is more relaxed, less agitated, and is in less pain. Many music-thanatologists are certified by the Music-Thanatology Association International organization. Music-thanatologists use the initials "CM-Th" to designate certification by the only professional organization of music-thanatologists. Many hospitals and hospices now have professional music-thanatologists on their staff. More information may be found by searching for music-thanatology and the chalice of repose.

Fields of study

As an interdisciplinary study, thanatology relies on collaboration with many different fields of study. Death is a universal human concern; it has been examined and re-examined in a wide variety of disciplines, dating back to pre-history. Some of these fields of study are academic in nature; others have evolved throughout history as cultural traditions. Because death is such a broad and complex subject, thanatology relies on a holistic approach.

The humanities are, perhaps, the very oldest disciplines to explore death. Historically, the average human had a significantly lower standard of living and lifespan in the past than he or she would today. Wars, famine, and disease always kept death close at hand. Artists, authors, and poets



often employed the universality of death as a motif in their works; this trend continues today.

The social sciences are often involved on both the individual and on the cultural level. The individual level is primarily covered by psychology, the study of individual minds. Avoiding (or, in some cases, seeking) death is an important human motive; the fear of death affects many individuals' actions.

Several social sciences focus on the broad picture, and they too frequently encounter the issue of death. Sociology is the study of social rules. No society is without its attitudes towards death. Sub-disciplines within sociology, such as the sociology of disaster, focus more narrowly on the issue of how societies handle death. Likewise, cultural anthropology and archeology concern

themselves with how current and past cultures deal with death, respectively. Society and culture are similar concepts, but their scopes are different. A society is an interdependent community, while culture is an *attribute* of a community: the complex web of shifting patterns that link individuals together. In any case, both cultures and societies must deal with death; the various cultural studies (many of which overlap with each other) examine this response using a variety of approaches.

Both religion and mythology concern themselves with what happens after death. They usually involve reincarnation or some form of an afterlife. The universal life-death-rebirth deity glorifies those who are able to overcome death. Although thanatology does not directly investigate the question itself, it is concerned with how people choose to answer the question for themselves. For example, an individual who believes that she will go to heaven when she dies will likely be less afraid of death. Alternately, a terminally ill individual who believes that suicide is a sin may be wracked with guilt. On one hand, he may wish to end the suffering, but on the other hand, he may believe that he will be sent to hell for eternity unless he dies naturally, however long and painful that may be. The loved ones of individuals like these are likewise either consoled or distressed, depending on what they believe will ultimately happen to the dying individual. Faith can inspire comfort, anxiety, and sometimes both. This is an important point to those studying thanatology and the sociology of religion.

Medical science and applied medicine are also very important fields of study used in thanatology. The biological study of death helps explain what happens, physically, to individuals in the moment of dying and after-death bodily changes. Pharmacology investigates how

prescription drugs can ease death, and in some cases prevent early deaths. Psychiatry, the medical application of psychological principles and therapeutic drugs, is also involved; many licensed psychiatrists are required to take courses on thanatology during training. Medical ethics are also an important area of study, especially on the issue of euthanasia ("right to die").

The Association for Death Education and Counseling is an international organization dedicated to promoting excellence in death education, care of the dying, grief counseling and research in thanatology. Based on quality research and theory, the association provides information, support and resources to its multicultural, multidisciplinary membership and, through it, to the public.



The Association for Death Education and Counseling has a CT program where individuals can become certified in thanatology.

Death

Death is the end of life in a biological organism, marked by the full cessation of its vital functions. All known multicellular organisms eventually die, whether because of natural causes such as disease, or unnatural ones such as accidents, homicide or suicide. Death has been described and personified throughout history in many different ways and tones, negative, positive or neutral.

Definition

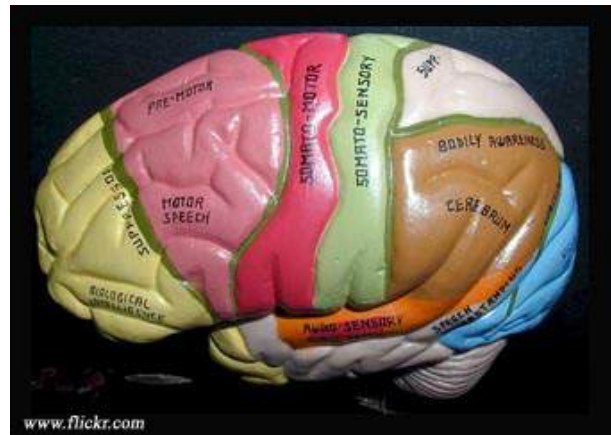
Historically, attempts to define the exact moment of death have been problematic. Death was once defined as the cessation of heartbeat (cardiac arrest) and of breathing, but the development of CPR and prompt defibrillation posed a challenge, rendering the previous definition inadequate. This earlier definition of death is now called "clinical death", and even after it occurs, breathing and heartbeat may be restarted in some cases. Events which were causally linked to death in the past are now prevented from having an effect; even without a functioning heart and lungs, a person can be sustained with life support devices. In addition to such extremes, there are a growing number of people who would quickly die if their organ transplants or artificial pacemakers failed.

Today, where a definition of the moment of death is required, doctors and coroners usually turn to "brain death" or "biological death": People are considered dead when the electrical activity in their brain ceases (cf. persistent vegetative state). It is presumed that a stoppage of electrical activity indicates the end of consciousness. However, suspension of consciousness must be permanent, and not transient, as occurs during sleep, and especially a coma. In the case of sleep, EEGs can easily tell the difference. Identifying the moment of death is important in cases of transplantation, as organs for transplant (the brain excluded) must be harvested as quickly as possible after the death of the body.

Among human beings, brain activity is a necessary condition to legal personhood in the United States. *"It appears that once brain death has been determined ... no criminal or civil liability*

will result from disconnecting the life-support devices." (Dority v. Superior Court of San Bernardino County, 193 Cal.Rptr. 288, 291 (1983))

However, those maintaining that only the neo-cortex of the brain is necessary for consciousness sometimes argue that only electrical activity there should be considered when defining death. Eventually it is likely that the criterion for death will be the permanent and irreversible loss of cognitive function, as evidenced by the death of the cerebral cortex. All hope of recovering human thought and personality is then gone. However, at present, in most places the more conservative definition of death — cessation of electrical activity in the whole brain, as opposed to just in the neo-cortex — has been adopted



(for example the Uniform Determination Of Death Act in the United States). In 2005, the case of Terri Schiavo brought the question of brain death and artificial sustenance to the front of American politics. Generally, in such contested cases the cause of death is anoxia. Oxygen deprivation for roughly seven minutes is sufficient to kill the cerebral cortex.

Even in these cases, the determination of death can be difficult. EEGs can detect spurious electrical impulses when none exists, while there have been cases in which electrical activity in a living brain has been too low for EEGs to detect. Because of this, hospitals often have elaborate protocols for determining death involving EEGs at widely separated intervals.

There are many anecdotal references to people being declared dead by physicians and then coming back to life, sometimes days later in their own coffin, or when embalming procedures are just about to begin. Owing to significant scientific advancements in the Victorian era, some people in Great Britain became obsessively worried about living after being declared dead. Premature burial was a particular possibility which concerned many; inventors therefore created methods of alerting the outside world to one's status: these included surface bells and flags connected to the coffin interior by string, and glass partitions in the coffin-lid which could be smashed by a hammer or a system of pulleys (what many failed to realize was that the pulley system would either not work because of the soil outside the coffin, or that the glass would smash in the person's face, covering them in broken glass and earth).

A first responder is not authorized to pronounce a patient dead. Some EMT training manuals specifically state that a person is not to be assumed dead unless there are clear and obvious indications that death has occurred. These indications include mortal decapitation, rigor mortis (rigidity of the body), livor mortis (blood pooling in the part of the body at lowest elevation), decomposition, incineration, or other bodily damage that is clearly inconsistent with life. If there is any possibility of life and in the absence of a do not resuscitate (DNR) order, emergency workers are instructed to begin rescue and not end it until a patient has been brought to a hospital to be examined by a physician. This frequently leads to situation of a patient being pronounced dead on arrival (DOA).

In cases of electrocution, CPR for an hour or longer can allow stunned nerves to recover, allowing an apparently-dead person to survive. People found unconscious under icy water may

survive if their faces are kept continuously cold until they arrive at an emergency room. This "diving response", in which metabolic activity and oxygen requirements are minimal, is something humans share with cetaceans called the mammalian diving reflex.

Courtesy of Wikipedia; William Rafti photographer



As medical technologies advance, ideas about when death occurs may have to be re-evaluated in light of the ability to restore a person to vitality after longer periods of apparent death (as happened when CPR and defibrillation showed that cessation of heartbeat is inadequate as a decisive indicator of death). The lack of electrical brain activity may not be enough to consider someone scientifically dead. Therefore, the concept of information theoretical death has been suggested as a better means of defining when true death actually occurs, though the concept has few practical applications outside of the field of cryonics.

There has been some scientific attempts to bring dead organisms back to life, but with limited success. In science fiction scenarios where such technology is readily available real death is distinguished from reversible death.

Causes of death

Death has many potential causes: disease, injury, poisoning, among others. Any of these may damage tissues and organs, and disturb the inner balance that allows vitality (homeostasis). Ultimately, every cause of death in animals does so by breaking the oxygen cycle, cutting off oxygen flow to the brain. All living creatures die, even if they have no particular affliction.

Furthermore, every species has its own typical life expectancy. Humans, for example, don't usually pass the 100-year mark, even when they are generally healthy and living in a secure environment. In humans, similar to most mammals, one can discern a slow deterioration in the body's vitality, which eventually results in death.

Current research aims to discover the cause of the body's natural deterioration upon entering old age. Even though findings are generally inconclusive, several theories have been proposed. One theory proposes that the body's deterioration is caused by genetic reasons, as the human genome contains a self-destructive mechanism that kicks off after a specific length of time. Another theory suggests that there is a limit on the rate of cell division which ultimately leads to cell demise. However, many studies show that a proper diet and nutrition together with regular physical activity can extend life expectancy.

In third world countries, inferior sanitary conditions and lack of access to medical technology makes death from infectious diseases more common than in developed countries. One such disease is tuberculosis, a bacterial disease which killed 1.7 million people in 2004.

Autopsy

An autopsy, also known as a *post-mortem examination* or an *obduction*, is a medical procedure that consists of a thorough examination of a human corpse to determine the cause and manner of a person's death and to evaluate any disease or injury that may be present. It is usually performed by a specialized medical doctor called a pathologist.

Autopsies are either performed for legal or medical purposes. A forensic autopsy is carried out when the cause of death may be a criminal matter, while a clinical or academic autopsy is performed to find the medical cause of death and is used in cases of unknown or uncertain death, or for research purposes. Autopsies can be further classified into cases where external examination suffices, and those where the body is dissected and an internal examination is conducted. Permission from next of kin may be required for internal autopsy in some cases. Once an internal autopsy is complete the body is reconstituted by sewing it back together. Autopsy is important in a medical environment and may shed light on mistakes and help improve practices. A necropsy is the term for a post-mortem examination performed on an animal or inanimate object.

Settlement of dead bodies

In most cultures, before the onset of significant decay, the body undergoes some type of ritual disposal, usually either cremation or interment in a tomb. Cremation is a very old and quite common custom, if one takes into account the sheer numbers of next of kin (of dead) practicing it. The act of cremation exemplifies the belief of the concept of "ashes to ashes". The other modes of disposal include interment in a grave, but may also be a sarcophagus, crypt, sepulchre, or ossuary, a mound or barrow, or a monumental surface structure such as a mausoleum (exemplified by the Taj Mahal) or a pyramid (as exemplified by the Great Pyramid of Giza).



In Tibet, one method of corpse disposal is sky burial, which involves placing the body of the deceased on high ground (a mountain) and leaving it for birds of prey to dispose of. Sometimes this is because in some religious views, birds of prey are carriers of the soul to the heavens, but at other times this simply reflects the fact that when terrain (as in Tibet) makes the ground too hard to dig, there are few trees around to burn and the local religion (Buddhism) believes that the body after death is only an empty shell, there are more practical ways of disposing of a body, such as leaving it for animals to consume.

In certain cultures, efforts are made to retard the decay processes before burial (resulting even in the retardation of decay processes after the burial), as in mummification or embalming. This happens during or after a funeral ceremony. Many funeral customs exist in different cultures. In some fishing or naval communities, the body is sent into the water, in what is known as burial at sea. Several mountain villages have a tradition of hanging the coffin in woods.

A new alternative is ecological burial. This is a sequence of deep-freezing, pulverisation by vibration, freeze-drying, removing metals, and burying the resulting powder, which has 30% of the body mass.

Cryonics is the process of cryopreserving of a body to liquid nitrogen temperature to stop the natural decay processes that occur after death. Those practicing cryonics hope that future technology will allow the legally deceased person to be restored to life when and if science is able to cure all disease, rejuvenate people to a youthful condition and repair damage from the cryopreservation process itself. As of 2007, there were over 150 people in some form of

cryopreservation at one of the two largest cryonics organizations, Alcor Life Extension Foundation and the Cryonics Institute.

Space burial uses a rocket to launch the cremated remains of a body into orbit. This has been done at least 150 times. Graves are usually grouped together in a plot of land called a *cemetery* or *graveyard*, and burials can be arranged by a funeral home, mortuary, undertaker or by a religious body such as a church or (for some Jews) the community's burial society, a charitable or voluntary body charged with these duties.

Whole body donations, made by the donor while living (or by a family member in some cases), are an important source of human cadavers used in medical education and similar training, and in research. In the United States, these gifts, along with organ donations, are governed by the Uniform Anatomical Gift Act. In addition to wishing to benefit others, individuals might choose to donate their bodies to avoid the cost of funeral arrangements; however, willed body programs often encourage families to make alternative arrangements for burial if the body is not accepted.



Settlement of legal entity

Aside from the physical disposition of the corpse, the legal entity of a person must be settled. This includes attributes such as assets and debts. Depending on the jurisdiction, laws or a will may determine the final disposition of the estate. A legal process, or probate will guide these proceedings.

Euthanasia

Euthanasia is the practice of terminating the life of a person or animal in a painless or minimally painful way in order to prevent suffering or other undesired conditions in life. This may be voluntary or involuntary, and carried out with or without a physician. In a medical environment, it is normally carried out by oral, intravenous or intramuscular drug administration.

Laws around the world vary greatly with regard to euthanasia and are subject to change as people's values shift and better palliative care or treatments become available. It is legal in some nations, while in others it may be criminalized. Due to the gravity of the issue, strict restrictions and proceedings are enforced regardless of legal status. Euthanasia is a controversial issue because of conflicting moral feelings both within a person's own beliefs and between different cultures, ethnicities, religions and other groups. The subject is explored by the mass media, authors, film makers and philosophers, and is the source of ongoing debate and emotion.

Afterlife

Many cultures, past and present, have had some belief in an afterlife. Such beliefs are usually manifested in a religion, as they pertain to phenomena beyond the ordinary experience of the natural world. Through the ages, various evidence has been advanced in attempts to demonstrate the reality of an afterlife, but nothing has ever been proven about either the existence or nature of an afterlife so the topic remains highly speculative.