The Merit of Time: A Genealogy of the Countdown

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How do we construct a genealogy or effective history of the countdown of time? Such countdowns involve both telling time and counting time, marked off in pre-determined increments to a pre-determined end. Countdows both spectacular and mundane have become a routine part of contemporary life in the United States. At New York City's Times Square, for example, hundreds of thousands (recently, millions) of people gather in front of a giant countdown clock every 31 December to count off the final ten seconds of the old year and welcome a new year. In sports such as football and basketball, a countdown clock is used not merely to tell the amount of time remaining until the end of the game but also to divide the game into timed segments, between which a television commercial may be inserted or an instant replay staged to settle a dispute over a particular referee ruling. The music industry also commonly uses a countdown in its Top Forty playlists and rankings of popular songs or music videos. In downtown Columbus, Ohio, in the year 2000, I saw a countdown clock used at a construction site to tell the public the remaining seconds before the completion of the building.

Public countdowns also take place in other countries, as in China, where a giant multimedia countdown clock was set up at Beijing's Tiananmen Square to count down to Hong Kong's 'return' to China on 1 July, 1997. The clock, mounted on a 16 meter high, 9.6 meter wide metal panel overhung with Chinese national flags, was placed between two pillars in front of the building jointly occupied by the National Museum of Chinese History and the National Museum of the Chinese Revolution. The top of the panel carried the five gold stars of the Chinese flag. Beneath the stars were four lines of Chinese characters: 'The Chinese Government' (Zhongguo zhengfu) / 'Resumes the exercise of sovereignty over Hong Kong' (dui Xianggang huifu xingshi zhuquan) / 'Counting down time' (daojishii) / 'to 1 July, 1997' (ju 1997 nian 7 yue 1 ri). Beneath were the days (tian) and seconds (miao) remaining before the British release of Hong Kong. Near the bottom, in small characters, appeared the names of the sign's sponsors, including the magazine China Top Brands, China's Southern Aviation Engineering Company, Linghua Food-Flavoring Group, Ji'ning, Shandong, and

London: Equinox
countdown clock counted

of Hong Kong and because, at the same time, it embodied a distinctive
countdown, initially defended as an objective arithmetic of time, really
entails a subjective process.

In contrast to the subjective, apocalyptic time inherent in Christian tra-
ditions, the Chinese countdown clock engaged both objective and subjec-
tive qualities of time. As a device for public time-telling of Hong Kong's
'return' to China, the clock incorporated mechanical, electric, and digital
forms of media, integrating the linearity of the traditional mechanical clock,
the precision and calculating powers of the computer, and the allure of
visual representation of change. That is, this kind of timekeeping main-
tained both the precision-orientation of clock time (as refined by the de-
velopment of the mechanical clock in Western Europe and North America
since the fifteenth century) and an objective quality of time that is mea-
surable and thus accountable in social organization.

In addition, however, the Hong Kong countdown clock implicated a
distinctively Taoist notion about the subjective accumulation of time in
dealing with the relation of the self to the other. I call this element in the
countdown 'the merit of time' (gongfu or kung fu), which has no immedi-
ate counterpart in the eschatological traditions of premodern Christianity
or Judaism. 'The merit of time' refers to the accumulation of the tran-
sient force in completing a movement in which the self interacts with the
other (more discussion later in this essay).

What other historical and cultural contexts might be relevant to my
construction of a genealogy of the countdown of time as merit? I suggest
two very different contexts: an international culture of fear during the
Cold War era (1945-1989) and Taoist (or Daoist) practices of time man-
gement. In brief: the nuclear arms race during the Cold War promoted
the development of an integrated notion of time (both objective and
subjective) as an important tactic for time management, and Taoist time
management entails a practice of incorporating the external time of the
other into the inner time of the self.

'Hot Count' in the Cold War

In the context of the Cold War, 'countdown' reflected popular fears of
nuclear war as a result of the arms race between the United States and the
Soviet Union. One of the most prominent forms taken by the countdown
was the 'Doomsday Clock' created in the late 1940s by a Chicago artist,
Marty Langsdorf, the wife of physicist Alexander Langsdorf, a founder of
the Bulletin of the Atomic Scientists. The Doomsday Clock first appeared
on the cover of the June 1947 issue of the Bulletin, set at seven minutes to fateful midnight. Since then, the hands of the Clock have been moved 16 times - sometimes back away from midnight, sometimes closer - based on decisions made by the Board of the magazine as it reviews general 'trends'. Each move was tied to the further development or proliferation of nuclear weapons or to restraints in their development and deployment.

As such, the Clock has been a surprisingly neutral mechanism. Mike Moore, in his 'Midnight Never Came: The History of the Doomsday Clock' (see http://www.bullatomsci.org/clock/nd95moore1.html), tells us:

> For hawks, the clock was a handy reminder of how dangerous the world was, thus justifying yet another multi-billion-dollar arms buildup. For doves, the clock also said the world was dangerous, but that called for conciliatory gestures and arms control treaties. Senator Tom Harkin, an Iowa Democrat and member in good standing of the olive branch school of international relations, titled his 1990 book on the perils of Cold War thinking, *Five Minutes to Midnight*.

Not long after the publication of the Doomsday Clock, countdowns became an integral part of the process of launching a rocket. Inspired by the launch countdown scene in Fritz Lang's 1929 film *Frau im Mond* (*The Woman in the Moon*), the German (and later American) scientist Wernher von Braun (1912-1977) had counted down to his successful launch of a V-2 in 1942, the world's first launch of a ballistic missile and the first rocket to go into the fringes of space. The countdown as he instituted it in post-war America was a technical procedure for the last moments of launch, standardized during the U.S. program to develop reliable nuclear weapons and missile delivery systems. By 1957, National Aeronautics and Space Administration (NASA) technicians had established a procedure called 'hot count', referring to a countdown preceding a static firing on the pad, followed a few days later by the actual launch. The count took 400 minutes and featured 1,000 separate events, checks of equipment on the ground as well as aboard the missile. If any problem showed up, the countdown would be put on hold until the problem was fixed, which could take hours.

Several points must be made about the use of countdowns by NASA. First, the countdown was primarily designed to slow down the actual launch. Second, the countdown was a procedure rather than a measurement; countdown time was not constrained by the actual passage of clock time. (Although 400 minutes might be allocated to the period of the countdown, technicians were not bound by a 400-minute clock time.) Third, the countdown could be stopped the moment a problem was found, even in the last few seconds prior to a launch; that is, the period allocated to the countdown was subjectively controlled and actively managed, so that time in effect could be frozen and, as a result, the countdown might never reach its end or zero-point. Major General John B. Medaris, who led the Army Ballistic Missile Agency in the late 1950s, wrote:

> ‘In the countdown to the launching of a big missile, the transition from success to failure - from glistening beauty to flaming disaster - can be sudden and complete. But the clock can be stopped - disaster can be avoided. Hundreds of instruments are monitoring everything related to the missile to catch the slightest indication that all is not perfect.”

Unlike the Doomsday Clock, then, the NASA countdown was cautious, not cautionary. Inseparable from the possibility of delay, it was in a strong sense a mechanism for deferring the time of launch. What is most interesting about this deferral was that it was used to manage time for making decisions, not simply to delay some absolute race against time. ‘The key to success’, wrote Medaris,

> ‘is still in the hands of people - constantly watchful, instantly ready to make a decision. If a small red light or a single wavering needle on a dial goes undetected, or if the first sign of trouble is not followed immediately by firm decision and instant action, the work of months can be destroyed in seconds.’

So the countdown could be adopted as a trope by Cold War politicians regardless of where they stood on the peace-and-security continuum. Major General Medaris regarded the countdown process as a matter of ‘the survival or destruction of our way of life, and quite possibly toward the survival or destruction of the human race’. While the Bulletin of the Atomic Scientists was irregularly recalibrating its Doomsday Clock and the American military was counting slowly down toward missile launches, Hollywood swiftly translated the idea of countdown into cinematic language, capturing and escalating a Cold War culture of fear. Many film plots did this by way of the ‘time-bomb’, beginning perhaps with Alfred Hitchcock’s *Four O’Clock* (1957), where the final ‘clocktime’ minute before the explosion lasts 72 seconds of narrative time - the real time it took for the film to ratchet through the projector. As both a technology of representation and a form of media, cinema can be used to manipulate the experience of time; in *Four O’Clock*, Hitchcock manipulated the temporality of the countdown itself, creating a complex, continually transforming set of relations between the ‘clocktime’ of the bomb, the narrative time it takes to reach the zero-moment of explosion, and the passage of time as experienced by movie audiences in suspense.
Like the NASA countdown, cinematic countdowns are as much procedures as they are arithmetic, objective but also subjective.

The Doomsday Clock's contribution to Cold War filmmaking was different: it inspired filmmakers to conceptualize the atomic bomb as what Paul Virilio in his book *Popular Defense & Ecological Struggles* (1990 [1978]) calls 'the weapon of the apocalypse'.20 A series of nuclear arms race events—such as the first Soviet atomic bomb on 29 August, 1949, the first US thermonuclear device (H-Bomb) on 1 November, 1952, and the first Soviet H-Bomb on 12 August, 1953—had resulted in widespread fears about a nuclear war.21 To express and transform the culture of fear, Stanley Kubrick released *Dr. Strangelove*, Or: How I Learned to Stop Worrying and Love the Bomb and Sidney Lumet gave audiences *Fail Safe* in 1964. Both films explore scenarios in which US bombers erroneously attack the Soviet Union with nuclear weapons. In *Fail Safe*, Moscow is destroyed, whereupon the US President orders the destruction of New York; in *Dr. Strangelove*, the planet is fatally irradiated by a secret Soviet 'Doomsday Machine'.22 Both Kubrick and Lumet were optimists. Although things don't turn out so well for a few million people in *Fail Safe* and a few billion in *Dr. Strangelove*, in each case a fictional president has hours to correct the original attack-the-Soviets mistake. Thus, though representing the fatal power of nuclear weapons, Kubrick and Lumet each used a series of cinematic images to transform fear into a countdown opportunity for survival.

Hollywood's use of the time-bomb and the countdown clock continued after the Cold War, although the sociopolitical context has shifted from the nuclear arms race to terrorism, as in the 1994 film *Speed* (Jan De Bont). What remains unchanged about the Hollywood countdown is its expression of time that is at once objective and subjective, coordinated to a standard clock but measured from start to end, as with NASA technicians, by filmmakers and their audiences. This raises an important question: In what ways does the public countdown establish and condition a relationship between the self and the other?

**The Merit of Time**

To address this question, I turn to a discussion of the accumulation of 'time as merit' through the incorporation of the external time of the other into the inner time of the self.23 I focus here on 'the practice of Tao' (xingdao) as an important context for understanding how a countdown may be an opening to innovative ways of managing the time of social interaction.

In Taoism, the countdown is an active measure for compressing an external form of time (the time of the other) into a sense of inner time. This form of time management results in 'merit' (gong, gongfu, or kung fu), a key concept referring to the accomplishment or achievement of a cyclical movement. To achieve something without falling, to accomplish a full cycle, by giving and taking, by fulfilling a task, by following difficult rules, or, more generally, by living one's span of allotted life, all these accomplishments add to one's merit. Completing a cyclical action or movement, human beings accumulate energy that 'transform and purifies' (hua) us.24 The larger the scale of a cyclical movement, the greater its achievement and its upgrading power. Moreover, the completion of a cyclical action and the accumulation of transforming and purifying energy take place as part of the same ritual process of examining and measuring the relation of inner time to outer time or, more precisely, resolving outer time into inner time.

'Inner time' and 'outer time' have quite specific meanings for the Taoist. Inner time refers to a period of transformation before the diversification (fen) of the energies that make up the universe. In the inner time, what Lao Zi (or Lao Tsu) calls 'something chaotically structured' (youwu huncheng) (*Daodejing*, chapter 25) evolves into 'that which has a name and thus gives birth to all beings' (youming wanwu zhi mu) (*Daodejing*, chapter 1).25 Taoism explains the length of the inner time in terms of human gestation.26 During the period of pregnancy, the embryo passes through a ninefold transforming process, corresponding to the time cycle and the process of the shaping of the universe inside chaos. Because the Chinese count and value the entire period of inner time, they allot to a newborn child the age of one year, the approximate length of gestation. Extraordinary people—those who accumulate high merits—are believed to have a longer gestation than common mortals. Divine heroes are born after 12 months, great sages after 18 months. Lao Zi, for example, is believed to have remained in the womb for 81 years. The term 'lao' (old) is often used as an honorific, regardless of the calendar age of the person, since the person's inner time is always counted in association with certain intrinsic merits.

Outer time exists after the diversification (fen) of the energies that make up the universe; it is the time of the world, which is governed by the interaction of yin-yang and by the cycles (or situations) that develop from their alternation. Outer time is hierarchical and objectified, comparable with Hegelian dialectical historical time.27 *Yijing* (The Book of Changes), a key text of Taoism, offers a theory about outer time (shi) and its worldly situations (wei)28 that has been variously interpreted by Chinese...
scholars over the centuries. The most influential interpreters included Meng Xi (c.90–40 BCE) of the Han Dynasty, who paired the ‘four directions’ with the ‘four seasons’ to explain the ‘breaths of the hexagrams’; Wang Bi (226–249 CE) of the Wei-Jin period, who argued that time determined situations; and Zhu Xi (1130–1200) of the Song Dynasty, who focused on ‘hitting the right time,’ ‘correct situation,’ and ‘appropriate situation’ in elaborating practical Confucian principles. The neo-Confucian appropriation of Yi Jing by Zhu Xi and his successors had political repercussions, maintaining outer time (in the sense of change) as ceaseless production and reproduction, a view used by the Chinese state as an important rationale for developing the economy of the country.

Mathematically, however, Yi Jing is related to number theory, particularly set theory. It is a guide for addressing changes, or measuring a number of situations rather than chances. Archaeological evidence has shown that oracle bones were first used as media to give interpretations to decisions of needed actions (including the action of not-acting) in the Shang period (c.1650 – c.1050 BCE). It is in the process of burning that two kinds of cracking lines (broken or continuous) appear on the bone. The Yi Jing considers the interaction between the two types of lines, ‘—’ (positive, continuous, yang) and ‘—’ (negative, discontinuous, yin), as the first and primary situation. Both the number of situations and their degree of complexity increase when the number of lines increases. The two-line structure, that is, adding one more line above or below the first line, includes a total of four situations. The three-line structure, adding two more lines above or below the first line, includes a total of eight situations. These eight situations are the most commonly used; they are called ‘Eight Trigrams’ (bagua). When the line number increases to four, there are a total of 16 situations; when five, a total of 32 situations; when six, a total of 64, called ‘sixty-four hexagrams’. Thus, when the line number increases to \( n \), the total number of situations increases to \( 2^n \). The Yi Jing usually interprets the 64 situations, each of which also includes a subset of six situations. Among the 64 situations, for example, the situation of qian consists of six parallel ‘—’ (unbroken) lines. When the force of change – assuming it begins at the top line – moves from the top line to the bottom line, the situation also changes. Thus, the situation qian includes a subset of six situations. When considering that each of the ‘sixty-four hexagrams’ includes a subset of six situations, the whole book in fact takes into account a total of 384 situations (64 \( \times 6 \)).

The acquisition of merit is based on the development of a relation of the self to the other. Another important Taoist text, Lao-Tzu Chung-Ching (Lao Zi Zhongjing) (The Middle Book of Lao Zi) or Zhugong Yulu (Jade Calendar of the Pearly Palace) (dated c.1125 or earlier), delineates a notion of the self on the basis of constructing a relation of the inner world to the external world. The external world, according to the book, is associated with a progression from crisis to crisis toward the inexorable end, from the distinct (all beings or the 10,000 beings) to the indistinct (chaos). The inner world follows the opposite impetus, moving from the incipient to more distinct creatures, from an invisible and undifferentiated state to the existence of form. The construction of the self’s identity – whether as the transcendental ‘I’ of the ‘True Person’ (zhenren), the ‘Great One’ (taiyi), or as the Tao (‘I am the Tao’) – takes places in the process of ‘returning’ (gui) to the inner world.

The return to the inner world as an active regressive process, which is called ‘ke’ (measure, scale, classify, grade, or examine), involves the measuring or examining of the relation of inner time to outer time. The process is developed to address a paradigm in ancient Chinese calendar theory, according to which the 60-year cycle (a traditional Chinese calendar notion) shows a certain irregularity that results in an imbalance between inner and outer time. The appearing of the irregularity, called an ‘irrational opening’ (qimen), allows the development of the notion of the ‘hidden period’ (dunjia), referring to a hidden regressive cycle that aims at counterbalancing the irregularity of outer time.

Taoist ritual enacts the passage from outer to inner time in an enclosed space called ‘altar’ (tan) where a human person interacts with both the celestial and the earthly forces. The space of ‘altar’ is built as an environment representing a multilevel mountain where the sky and the earth meet. In the ritual process, a specialist moves within the environment from the outer to the inner sphere. The ‘outer altar’ (weitan) is a sphere in which 24 pickets are used to form 24 territories that represent ‘24 energy nodes’ (ershi si jieqi), 24 periods of 15 days in a year. Beyond this demarcation line of the outer altar are installed 28 groups of oil lamps representing constellations. The sphere of the ‘middle altar’ (zhongtan) is symbolically marked by the 12 ‘earthly branches’ (dizhi) arranged in a square, the ‘eight trigrams,’ and the four gates (the Door of the Earth, the Road of Ghosts, the Gate of Man, and the Gate of Heaven) at the four corners. The spatial arrangement of the ‘eight trigrams’ forms a spatial structure known as the ‘nine palaces’ (jiugong) where the ‘inner altar’ (neitan) is enacted during the period from midnight to dawn. The ‘inner altar’ includes five cardinal points, each marked by a bushel of uncooked white rice grains, symbolizing a measure of life (metal, wood, water, fire, or earth). Inside each of these five bushels is placed a sacred ‘true writ’ (zhenwen) in the form of a wooden tablet or a sheet of paper inscribed
with so-called cosmic writing or archetypal characters that express the fundamental configuration of cosmic energies as they emerge from chaos and coagulate to form all beings. Moreover, the five ‘true writes’ also symbolize the five directions (east, south, west, north, and center).

![Diagram: The ninefold transformation of inner life shown by the nine steps of movement in a Taoist ritual.]

Figure 1: The ninefold transformation of inner life shown by the nine steps of movement in a Taoist ritual.41

After entering into the inner altar, a ritual master begins to ‘practice the Tao’, a ninefold ritual of circulation that symbolizes the ninefold transformation of inner life (shown by the numbers from 1 to 9 in Figure 1). In the ninefold ritual, the master performs dance steps called ‘the paces of Yu’ (Yubu), enacting a return to the womb that symbolizes a compression of outer time into inner time, which itself involves two different trajectories. After moving successively in the first six phases (from the number 1 to 6, shown in Figure 1), the ritual master goes regressively by walking backward from the number 9 to 7. This change is called ‘the irrational or uneven opening’; it reenacts the appearance of an irregularity of the outer time (according to traditional Chinese calendar theory). The regressive movement or return to inner time is called ‘the hidden period’, in which the ritual master disappears from the outer world and enters into the ‘other world’ (bieyou tiandi), where nature exists in its original, spontaneous state, which is often expressed by the image of the mountain and the unspoiled landscape. Therefore, in ‘practicing the Tao’, the progressive process annihilates the form of outer time and its associated outer world through different stages, and the regressive process constructs a form of inner time and its inner world out of a primal formlessness.

As expressed in ritual, not only does inner time precede outer time; it also determines outer time. The ritualistic return to inner time is a construction of a specific relation of inner time to outer time. Outer time is telescoped to the extent that creation and destruction, the beginning and the end, take place during the span of the ritual. Outer time is reduced to a single moment that corresponds to the duration of inner time – the ninefold transformation. This moment of time is ‘the instant of chaos, of total communication, one and undifferentiated, yet perceived as an endless multiple’.42 The experiential length of the moment, or the duration of the ninefold transformation, is flexible.

This flexibility makes possible that the active management of the duration of inner time enhances agency in a social interaction. The merit acquired through a social interaction is determined by one’s ability to stretch the duration of the internal ‘transformation’ (hua). The further or longer the duration, the greater the speed at which the stretching takes place, and the more effective the control of the external world (including time), as depicted in such martial arts films as The Matrix (1999, Andy Wachowski and Larry Wachowski) and Crouching Tiger, Hidden Dragon (2000, Ang Lee). The agency of the body in the transformation may include physical exercises, but its intellectual capacity is developed through a cultural process, which first acquires the time of the other in a progressive movement and then develops the time of the self through turning in upon oneself.

Conclusion

I have shown that in order to appreciate the social value of the countdown of time, we must understand both objective and subjective time. In the Cold War context of rocket and missile launches, the countdown ostensibly established the objective end-time for a launch, but it also allowed for a flexible, subjective management of that time toward a successful launch. With respect to Hollywood films, the countdown establishes an objective end-time for (usually) explosion or apocalyptic destruction, but the duration of the narrative is determined less by clock-time than by the imperatives of cinematic storytelling and the felt duration is determined by the audience’s subjective experience of suspense or anxiety. If my discussion of NASA missile launches and Hollywood films raises the issues of the flexibility and multiplicity of time, my analysis of the Taoist countdown draws attention to the problematic of the accountability of time in a culturally determined relationship. If time in a countdown establishes a relationship between the self and the other, the time must have what is called, in Taoist terms,
"merit". The accumulation of time's merit lies precisely in the multiplicity of the countdown.

The traditional Taoist countdown of time, integrating progressive and regressive forms of time, has implications for understanding recent countdowns, such as that of Hong Kong's "return" to China, where we can find two parallel practices of stretching the duration of inner time. In Tiananmen Square, the movement from the external world to internal world was a journey from the external time 'contaminated' by British colonization of Hong Kong since 1840 to the inner experience of Chinese national time - whether economic, social, or cultural. For Hong Kong itself, the stretching of the duration was revealed in Hong Kong cinema, especially martial arts films such as the series Once upon a Time in China (1991-1993, Tsui Hark), and Ashes of Time (1994, Wong Kar-wai). This stretching was aimed at freeing Hong Kong from the influence of China's national time, as well as refining and maintaining Hong Kong's own cultural time. For both China and Hong Kong, the management of relation of an external time to an inner time during this historic period entailed the construction of a qualitatively different time, that is, a time about modernity.44

In addition, the traditional Taoist countdown may help us understand an important shift in recent Western notions of historical time: the shift from Hegelian dialectical time to Nietzschean genealogical time - that is, from an objective, progressive, and teleological notion of historical time to a notion of historical time as discontinuous and interruptive, as pointed out by Michel Foucault's discussion of genealogical or effective history.45 Such a change in the understanding of historical time has also been reflected in the history of communication media. Gilles Deleuze's work on cinema has revealed a shift from a classic focus on continuous movement ('the movement-image') to a neo-cinematic focus on discontinuity, contingency, and interruption ('the time-image').46 Some regard this change in the understanding of historical time as radical or 'postmodern'47 because the shift declares the end of the Hegelian dialectical historical time, often expressed in terms of the phrase 'the end of history'.48

The postmodern sense of historical time does not permit the time of the other to become a source of accumulation in social action. As a result, with respect to its role in establishing a relationship between the self and the other, time has no merit. In contrast, the Taoist countdown does not surrender objective, continuous time (that is, the time of the other) even as it develops a personal and communal sense of the multiplicity of time. In Taoism, therefore, time may become a source of innovation in social organization - that is, it not only establishes a link between the self and the other but also allows for changes in that relationship during the countdown process. For the Taoist, the development of a genealogical historical time incorporates rather than rejects dialectical historical time, toward more compatible ends.

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Notes

1. In addition to their uses in public settings, countdown timers and clocks are sold as gifts or tools for managing time in individual uses. For example, skymall.com has advertised the countdown clock as ‘a new way to look at time’: ‘experience the anticipation of watching the days, hours, minutes and seconds tick away until that important date, whether it’s 10 months or 10 years away!’ The online store tells its consumers to use a countdown clock both to prepare for such an event as wedding, pregnancy, retirement, or ‘the big day’, and to do such things as ‘reach your goal’, and ‘complete the project’.


10. For more information, see http://www.thet bulletin.org/index.html.

11. This sense of deferral in the countdown to the launching of a rocket is different from the Christian countdown. Delay in launching a rocket is temporary whereas delaying in the Christian discourse of the countdown is an incessant deferral, as shown by the work of Richard Landes, 'The Apocalyptic Year 1000', 13-29.


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17. Medaris, Countdown for Decision, viii.


22. For more information, see H. I. K. York, 'The V-2 Rocket'.


24. For a detailed discussion, see Schipper and Wang, 'Progressive and Regressive Time Cycles in Taoist Ritual'.


26. The link of inner time to the pregnant body suggests a relationship between the experience of subjective time and femininity temporality. How may we incorporate this Taoist insight into the understanding of women's time? Perhaps not merely in terms of women's struggles against being inserted into men's linear time, as Julia Kristeva points out (in 'Women's Time', New Maladies of the Soul (trans. Ross Guerber; New York: Columbia University Press, 1995), 201-24), but also in terms of femininity temporality, its relations to innovative uses of time in capitalism, and change of modes of communication from the mechanical to the fluid, as seen by scholars such as Armand Mattelart and Michele Mattelart in their Rethinking Media Theory: Signposts and New Directions (trans. James A. Cohen and Marina Urcidi; Minneapolis: University of Minnesota Press, 1992), esp. chapters 5 and 10.
27. Compared with the Hegelian dialectical historical time that refers to an objective, continuous, progressive, teleological notion of time (see D.N. Rodowick, Reading the Figural, 190-93), the outer time in Taoism is not only hierarchical and objectified but also multiple (that is, as a series or a set of temporal elements).


29. For a detailed discussion, see Li-Chen Lin, 'The Concepts of Time and Position in the Book of Change and their Development', in Chun-Chieh Huang and Erick Zürcher (eds.), Time and Space in Chinese Culture, 80-113. It would be more appropriate to translate the term wei as 'situation' rather than 'position' (the translation used by Lin).

30. Li-Chen Lin, 'The Concepts of Time and Position in the Book of Change and their Development'.

31. Scholars often confuse the difference. For example, C.G. Jung, 'Foreword', in The I Ching or Book of Changes, xxii.

32. One of the earliest forms of Chinese script, 'oracle bone inscriptions' (jiaguwen) that appeared around 1200 BCE, originated in the process of explaining the meaning of the cracks shown on burned bones. The inscriptions, incised on the scapulae of oxen (or occasionally sheep) and on turtle plastrons, recorded questions that diviners of the cracks shown on burned bones. The inscriptions, incised on the scapulae of oxen (or occasionally sheep) and on turtle plastrons, recorded questions that diviners in the service of the ruler posed to his deceased ancestors. The diviners recorded the answers as well, and the collected bones served as historical archives. See Lothar Ledderose, Ten Thousand Things: Module and Mass Production in Chinese Art (Princeton, NJ: Princeton University Press, 2000), 18; and William G. Boltz, The Origin and Early Development of the Chinese Writing System (New Haven: American Oriental Society, 1994).

33. See Wilhelm, The I Ching or Book of Changes, 3-10.

34. Examples of harmful events include floods, droughts, wars, and famines. See Schipper, 'The Inner World of the Lao-Tzu Ch'ung-Ch'ing', 128-29.

35. Schipper, 'The Inner World of the Lao-Tzu Ch'ung-Ch'ing', 129-30.

36. Schipper and Wang, 'Progressive and Regressive Time Cycles in Taoist Ritual', 185. Each traditional Chinese calendar cycle includes 60 years, each of which is formed through the interaction between the celestial and the earthly forces. The celestial force includes ten elements called the 'celestial stems' (tian'gan); the latter includes 12 elements called the 'earthly branches' (dizhi). See idem, 204, Appendix.


40. The five measures of life are called the 'five elements' (wuxing).

41. The five 'true writing' (true writing') are considered as basic Taoist text, the first holy book from which all others, including Daozhejing and Yi Jing, have derived in successive stages of degeneration. See Schipper and Wang, 'Progressive and Regressive Time Cycles in Taoist Ritual', 193.