Time and Periodisation in the Western Universal Histories: from Eusebius to Voltaire

To begin with, time and periodisation do not coincide even if both derive from the same exigence: calculating epochs of histories. In fact time is more universal than periodisation as it always had an astronomical basis, connected with the moon or sun cycles. The identification of a means for measuring unities of time on the basis of astronomical references is very old and it is quite difficult to identify which society invented it. It is also true that both the use of either the lunar or the solar cycle nearly always individuate a year formed by twelve months, these latter oscillating between twenty-eight and thirty days. This kind of calculation was first made by astronomers and priests and not by historians. It implied a precocious knowledge of mathematics, geometry and astronomy. To find a complex theory of time it is necessary to wait for Greek culture: if the Pythagoreans connected it with the celestial sphere, for Aristotle time was the measurable order of movement, implying a before and an after: a spatialisation of time destined to cross (reach through) not only (to) Medieval, but also Modern age, right through to Descartes, Locke, Newton, who all connected time with order and uniformity.

I find it more complex to talk about periodisations, which are not uniform segments (of time), not easily singled out by dates: they explain identities both in a temporal conception and a spatial organisation. Periodisations are connected with a mythical language about origins, religion, identity, hopes, crises, desperation, involving peoples, towns, states and empires. In the first periodisations we not only find cosmogonical explanations, but also at least three different directions from the past to the future: the idea of a linear progress, that of a continuous cyclical return, and thirdly of a decadence from a mythical perfection. I can only indicate a few patterns. The most classical one (present in both great Western, Greek and Hebrew, traditions) is that of the four ages: gold, silver, bronze and iron age. We find it first in Hesiodus, but the same argument is present later on in the Bible (the dream of Nebuchadnezzar explained by the prophet Daniel).

Strictly connected with this is the theory of the four monarchies, elaborated at the end of the Hellenistic period to describe the succession of the Empires: Babilonians and
Assyrians, Persians, Macedonians, identifying the last monarchy with the Roman Empire. If we analyze universal histories from Antiquity to modern times, we can easily note the persistence of this conception, which not only survived the end of the Roman empire, but easily combined with the gold, silver, bronze and iron ages, and with the seven epochs of biblical inheritance. Seven epochs meant not only past, but future as well, the seventh age being that of the Final Judgement. This explains the persistence of the sixth age in Western civilisation, where all monarchies were conceived as fragments of the Roman inheritance, as well as the presence of chiliastic theories announcing and prophesying the end.

It is interesting to note that the dissolution of these periodisation patterns is quite recent, connected with Modernity and Enlightenment. It is also important to consider that, while astronomical time implies linearity and uniformity, periodisations and the consequent cosmologies introduce into continuity breaks, segments, ruptures and differences, which are organized not only as progress or decadence, but also as present, past and future. The singularity of each epoch is implicit in the idea of periodisation. This not only identifies its specific past, but also reveals its expectations.

In this sense Christian history not only uses a biblical conception of time, but by accepting the sixth epoch as the last for human history, it presumes the end of the world and the Last Judgement. In fact, Christian time is a rupture not only with profanity and paganism, but also with the earthly Kingdom of the old Hebrews. Jesus announces the new kingdom, the heavenly one.

Universal histories are always connected with universalistic forms of civilisation or attempts to unify the known world. In this sense they are a natural inheritance of the Hellenistic and Roman Empires. The problem of organizing Christian time, while respecting both rupture and detachment from profanity, at the same time recuperating biblical time and the universalistic impulses connected with Rome and its imperialism arises early at the court of Constantine the Great in the work of Eusebius of Cesarea. He is a cross of four cultures: Hellenistic-Alexandrine, Hebrew, Roman and Christian. As a biographer of the Emperor who assimilates Christianity into the Empire, he is able to dictate Christian time in his *Chronicon*, the basis for all the history which would be written during the Middle Ages. He inaugurates the superiority of ecclesiastical history over all other historical forms. Eusebius utilizes Flavius Josephus, the Hellenistic chronographers, astronomers and geographers. He compares Olympiads with Roman chronology, based on the date of the Foundation, with the Julian Calendar. His work was completed two centuries later by Dionysius Exiguus, who was able to identify the official date of the birth of Jesus Christ. It is the main point of reference not only for
works of Bede, but, in modern times, for Joseph Scaliger and the other chronologists as well: Denys Petau, Giambattista Riccioli and James Ussher.

It was now possible to realize a mathematical calculation, unifying the Christian republic through a time which was not based on the Greek Olympiads, or the Roman consular elections, but on the Julian Calendar, where the date of Jesus's birth became a means for separating the old age from the new, completely christianised world. Christian time identifies two great cuts: before and after Christ's birth. Connected with the Julian Calendar, Christian time defeats all possible rivals. It is the Church time, analysed by Jacques Le Goff, which is able to organise not only the hours of the day, but also weeks, months and years. While months and years are based on astronomical calculation, the week is an artificial partition of time derived from the Hebrew world, with a symbolical analogy with the times of the Creation, six days of work and the seventh dominical, i.e., destined to God. Even the year was transformed into Church time, dedicating all the days to Martyrs, Saints, religious ceremonies and celebrations. It is easy to find some important reasons for this victory which emarginated civil time, including those aspects which could have a pretence to universality, as a system of dating based on the successions of Emperors. The first cause was the crisis of the Western Empire, above all after the exhaustion of the Carolingian experience. If the Popes had been the protagonists of the translation of the Empire per Francos, all attempts on the part of the new German Emperors to affirm their autonomy and presence in the world saw the hostility and the opposition of the Popes and of the Church, thus opening a challenge destined to persist until the XIIIth Century. The second reason reflects the will of Western space to reach complete autonomy from the Byzantines, while the third is the universality of Christianity and its lack of alternatives in Western Europe.

Throughout the Middle Ages China, notwithstanding the travels of Marco Polo and his work, was very far away with a fabulous identity connected with memories elaborated along the silk, gold and silver road.

To modify the context organized by Eusebius of Cesarea (and also by Aurelius Augustinus and his De Civitate Dei, an early attempt to absorb the Roman Empire as a project by divine Providence in favour of Christianity to assure its universality) it is necessary to arrive at the early Modern age, and the humanistic experience. Here the organisation of a new secular time changed the historical paradigms by introducing Antiquity as a new age of reference. If the past had been interpreted as a conflict between civitas Dei and civitas Diabuli, the first reinforcing the superiority of sacred history and emarginating heathen histories, the rediscovery of Antiquity brought about a new
secular interpretation of the world, not only for the past, but for the present as well. Part of Antiquity had already been christianized by great mediators such as Eusebius of Cesarea and Saint Jerome, but in the fourteenth and fifteenth centuries it also became important for those aspects which Christianity had condemned or concealed.

This new age, with its poets, historians, philosophers and physicians, now read directly and no longer through the mediation of Arab culture; also thanks to experiences not referable to Christianity, like Hermetism, it contributed to develop a consciousness of living in a new age; this new age was far removed from Antiquity, but even more from that contiguous time which was to become a sort of age of decadence, obscurity and barbarity. It was implicit in the very process of identifying two ages like Antiquity and Modernity, a claim for a new, very different epoch, which would become the Middle Ages. If the Church's concept of time had dominated for centuries, time was now not only that of the merchants, but also of the towns, states, politics and new sciences. Secularisation also implied the affirmation of individuality. If the new protagonist of history was man, then the temporalisations implicit in human life (birth, childhood, youth, maturity, old age, death) could also become metaphorical references for a new world in search of profanity, the return of a cyclical theory in which it was easy to find correspondences for all historical processes with beginnings, growth, maturity, decadence and endings.

This new concept of time was to be emphasized during the Renaissance by a lot of innovations which were to modify, if not change the global idea of temporalisation and periodisation. First of all, the birth of political history (Machiavelli, Guicciardini, Sleidan); secondly, the emergence of heroical biography as a new secular genre of history; thirdly, the transfer of the new civic values from the Italian towns to the European states; fourthly, the extension of space thanks to the geographical discoveries (Africa, Asia but above all the Americas). Time and space are strictly connected categories of knowledge. Not only the difference from the Ancient World, but also a new strategy to enclose it in the Christian tradition were implicit in the invention of a New World.

The European mind had to answer the problem, which was also a problem of time, of when and how the peopling of the American continent had been possible. Giuliano Gliozzi wrote a very important book on Adam and the New World, analyzing all the theories that emerged in the West to justify not only the universality of the preaching Gospels, but also its destiny of superiority and of colonial power. All these processes implied a first exigence to rediscuss not only times, but also spaces, creating the first patterns of comparison.
There is a very narrow link between comparison and the concept of the individuality of civilisations. George Huppert, in his *The Idea of a Perfect History* individuates in Louys Le Roy a first attempt in this direction. I can't explore here the histories of voyages and travels (from Ramusius, to Hauklyt, to Purchas) where a new idea of the world emerged not only with its spaces, but also with its times.

As I mentioned before, Joseph Scaliger, a learned man educated according to Italian and French Renaissance patterns, a true heir of humanistic philology, had taken refuge in Leida. In this young university he also dreamed of freedom of research. After his edition of Manilius's *Astronomica*, he decided to renew chronology, starting not just with the *Chronicon* by Eusebius, but going back to his Hellenistic sources. The exhaustive and huge intellectual biography dedicated to him by Anthony Grafton (and above all the second volume, only concerned with chronological problems) saves me from the necessity of a long and complicated explanation.

I can only stress some, perhaps not marginal, points. The first edition of his *De emendatione temporum* was edited in a world still dominated by the Julian Calendar, while the second edition had to face the reform organized by Gregorius XIII in 1582. As is well known, that reform, which expunged ten days from the month of March 1582 to adjust religious and civil year to the solar one, was far from being readily accepted by Europe. England, Venice, the Protestant countries and those of Oriental Europe maintained the old Calendar, thus creating new problems in the computation of time. The effort to emend the chronology of Eusebius, (of whom and of the Latin version by Saint Jerome Scaliger was to be editor) not only meant interrogating Greek and Hellenistic sources, but also opening a confrontation with the Arab and Islamic system of computation of time. But Scaliger also had to face another problem, opened up by new discoveries: dates and concepts of time coming from civilisations which had recently been discovered in the Americas, such as those of the Aztecs and the Mayas, whose culture of time was based on astronomical calculations.

Scaliger's work was to become the true point of reference for a new science, whose protagonists would be men like Denys Petau, Giambattista Riccioli, James Ussher. The first two were Jesuits and wanted to bring back into the reassuring fences of sacred chronology the secular time imagined by the Renaissance. The last two were an Irish Anglican and the bishop of Armagh, whose chronology was not too far from the same wish to confirm the superiority of Biblical and Christian time. In spite of the analysis made by Grafton, who was also able to identify the mistakes and arbitrary presumptions in Scaliger's work, *De emendatione temporum* continued to be the main model not only in the seventeenth or eighteenth centuries, but also for the scientific handbooks of the
nineteenth.

But my problem is not to study chronology as an old or new science for computing time. I am interested in reconstructing its use in Western universal histories as a key to understanding how different civilisations with different times are absorbed in a perspective unifying, but also dominating and sometimes inventing the Other. For this reason the seminal book by Edward Said, *Orientalism* (1979) notwithstanding some inevitable over-simplifications, is still useful.

In this sense it is less important to examine here the first humanistic history conceived as a universal history (I am talking about *Enneades* by Marcantonius Coccio Sabellicus) which inaugurates the sixteenth century, published between 1498 and 1504. This work in fact was written from an official Venetian perspective and reflected a time in which the opening up of Atlantic spaces had caused the reduction of the role of Venice from a world important town to a rich, but secondary space of the Italian Peninsula.

Sabellicus dictated a model destined to have a lot of imitators: his plot is still organised on Eusebius of Cesarea, but heathen histories (from Erodotus to Livy) have the same dignity as sacred history: Hebrew world, Greek civilisation and above all Roman universalism are the great inheritance of the Italian and Venetian experience, interpreted according to the great models of Leonardo Bruni and Flavio Biondo.

If we try to consider texts of this genre elaborated in world important towns open to the Atlantic adventures, the first universal history we find is that by Walter Raleigh. In this text a reader (*lector in fabula*) who can decode the anxieties of a text born in prison and written before a cruel death sentence can identify the force of tradition based on sacred history, rather than the novelties of a man of Elisabethan times, an adventurer and privateer with the mirage of the Eldorado, founder of a colony in the American spaces.

The Seventeenth Century was called by contemporaries an age of Iron, recalling the terms of Daniel's prophecy. In fact, for Western historiography this is an age of regression, of returning to the ecclesiastical and sacred keys to interpret the world. The rupture of the Christian republic, instead of creating more freedom of interpretation, saw the triumph of religious orthodoxies in history as well: the protestant interpretation of the Centuriatores and the Catholic answer through the Annales of Caesar Baronius.

The possibilities of secularisation identified by Humanism and the Renaissance were heavily defeated by sacred and traditional time, which also absorbed Antiquity and new discoveries. History had to accept the Procustean bed of religious confessions. Centuries and years returned as a conception of time in which the Roman Church on the one side and Protestant confessions on the other victoriously challenged not only the control of
civil time by the states, but also those secular forms of periodisation which George Huppert had seen emerge in the French Renaissance. In this field the best research is that by Sergio Bertelli, *Ribelli, libertini e ortodossi nella storiografia barocca*.

To see a new change of categories of time and space in Western civilisation it is necessary to wait until the time which was defined by Paul Hazard as the crisis of the European Mind (1685-1715), and above all for the Enlightenment. Enlightenment was the creative answer to that crisis from the stability of Classicism to the anxieties of movement and of innovation. I wish to consider this epoch not only as a new secularisation of time, but also as a new capacity of comparing spaces, a way to open up knowledge and problems in which we are still involved.

I shall only give a few eloquent examples: an important English high magistrate and learned man, Matthew Hale, at the end of his long career through different regimes, spent his last years and his retirement - the years of the English Restoration - to defend Christianity and to write a sort of universal history, *The Primitive Generation of Mankind to the Light of Nature*; in his work time and space are still those of old Europe, organized by the Bible and its sacred idea of time, conceived as universally accepted.

A few years later Jacques Bénigne Bossuet wrote his *Discours sur l'histoire universelle*, where he seemed to confirm without any doubt an Augustinian and theological way of considering history, a theleological perspective in which all the past, including Antiquity, could have an ultimate sense in function of the future, the time of the Last Judgement. The Anglican Hale had been a lay magistrate, while Bossuet was a Catholic and Gallican bishop and a Royal prince's tutor. In fact the distance between the two works was great. Hale reflected the search for security and stability of a time of Restauration following the English Revolution. Bossuet had to fight against Baruch Spinoza and Richard Simon. What had been lived and thought as an absolute value by Hale, was for Bossuet a threatened frontier to defend.

Paul Hazard has offered a great key to the comprehension of the difference between an age of Classicism and stability and a new time of anxiety dominated by the problems posed by Bayle (not only his refusal of miracles, but also the unsettling possibility of the virtuous atheist), by Spinoza and Simon (the negation of the sacrality of the Bible and of its centrality in human history, which also meant a discussion on sacred time), by Jean Leclerc, John Locke and John Toland (a critical method which, if applied to the religious establishments, led from the *Reasonableness of Christianity* to *Christianity not mysterious*).

Hazard and his comparatistic school posed a great historical problem: the role of the Symbolic Strangers in Western and European civilisation. The problem was: in what
sense the Symbolic Strangers (from the Chinese Mandarin to the learned Persian, or to the noble, free and chivalrous Arab) were able to change the European Mind?

First of all a new sense of time and periodisation was not coming from a pagan and profane Antiquity, but from new lands, with a different, but not inferior, civilisation. The Egyptians had been considered by John Marsham and John Spencer as masters of the Hebrews. As a consequence the Hebrews had become a small and secondary civilisation, unable to sustain the role of people chosen by God. It had created dramatic problems. The same situation risked to arise for other civilisations and their histories, which it would be difficult to compress in biblical time.

Spinoza and Simon (from different points of view) had cancelled the sacrality of the Holy Text. Marsham and Spencer had opened a new hierarchy of civilisations. But the Symbolic Strangers such as Chinese, Indians, Japanese, Americans and so on, to the happy Tahitians of the second half of the Eighteenth Century, were more important for a new conception of time and periodisation, because they were testimonies of different ways of life which had had no connection with Christianity. The upsetting hypothesis formulated by Bayle about the possible existence of a perfectly honest and decent society without religion, risked to become true, notwithstanding all the attempts to compare the customs and manners of the American indians with those of the early Christians (as Father Lafitau had done in answer to Bayle and the new free thinkers).

The crisis of the European mind through its anxieties posed the exigence of inventing a new policentric universal history, renouncing the unity based on religion. It was a necessity, not a solution; a question, not a true answer.

Before talking about Enlightenment, which is the time of a great and true secularisation, it might be interesting to start from an old question: when and how did Europe receive accurate information or had first hand experience about China, India and Japan? They were all great civilisations with implicit times, which renewed in a more aggressive way the menace to Biblical sacred time. I am only quoting the cases of China, India and Japan, because Persia and the so called Middle Orient were better known through travellers and historians; furthermore they were inserted in a different comparison between Christened Europe and Islam.

The impact of Europe with China was the most complex because it concerned a great and rich civilisation. I can only quote the Jesuits’ mediation, starting from the travels of Father Matteo Ricci, to the triumphal report written by Nicolas Trigault, to the great work on the Chinese annals made by Martino Martini.

China was difficult to insert in the Western perspective for its pretention to antiquity. It can be interesting to note that some of the European histories of China were written in
Rome and in Paris not by historians with a direct knowledge of the Chinese language, but by very clever and learned mediators, able to utilise material which had accumulated in European Archives and libraries. If Father Martino Martini knew the Chinese Annals first hand and made a correct attempt at comparing and inserting Chinese time into the sacred biblical tradition, Father Atanasius Kircher or Father Matteo Bartoli in Rome, but also Father Charles Le Gobien in Paris, simply used a new literature of travel (the missionary and jesuitic one) to elaborate historical representations of China.

Virgile Pinot, pupil of Hazard, wrote a very important book in 1932 analysing the way in which the Jesuits' authentic letters from China had been manipulated to obtain the Lettres édifiantes.

India as well was historically known through Father Pietro Maffei, who used Portuguese sources. But a lot of information on religion, ceremonies and society was present in the Lettres édifiantes concerning India.

The Western approach to Japan was more complicated. It had two different times and traditions. The first was the history of Christian persecutions, starting with the death of Francis Xavier. This kind of literature (massively present in Rome) converged in the book by Father François Xavier Charlevoix. More interesting was the lay perspective, connected with the Dutch colony in Nagasaki, the first true history of Japan being that by Engelbert Kaempfer, who lived for two years (1683-1684) in the little island as a physician for the Dutch merchants. He travelled through Japan, going to Endo and used Japanese professional mediators, collecting a lot of Japanese manuscripts. He didn't publish his work, written originally in his own language, which was a German dialect. At his death Hans Sloane, the great collector of the British Museum, not only purchased all the manuscripts, but stimulated the Swiss naturalist and physician Jakob Schleutzer to translate them into English and French.

What happened in the Eighteenth Century, which I have chosen as a conclusion for my speech? While the debate about fossils and shells inaugurated the first serious attempts to break Biblical time, the last great defence of sacred chronology came from Isaac Newton as a chronologist. He used astronomical calculations to combine in the reassuring Hebrew time Chaldaic, Egyptian, Greek and Roman dates. While geology and natural history were playing for a rupture, for a short while a great astronomer and scientist not only confirmed Biblical time, but also criticised the enlargement obtained with the use of the Seventy's Version. But it is necessary to distinguish between Newton, his personal religious choices, and the interpretation of his scientific contributions by contemporaries, not only learned Latitudinarians, but also freethinkers connecting newtonianism to the hypothesis of the universe-machine.
First of all I shall examine a new model of universal history. It is not a synthetic, but an analytic one, the English *Universal History*, organised in two different times: the *Ancient Part* covers the period between 1730 and 1742, while the *Modern Part* goes from 1758 to 1762; it is a huge work in sixty four volumes in octavo edition, which was to have a European and global circulation (five translations into Italian, two into French, one into German, plus a lot of abridgments, among which a *Universal History Americanized* by David Ramsey, the historian of the American Revolution and of South Carolina): a way of organizing times and spaces from a new point of view, Western but no longer European.

Preceded by a *Sacred and profane history of the World* written by Samuel Shuckford, which was the first attempt to separate the history of the universe from the history of the earth and of man, it is a very interesting project organised by a free thinker like George Sale, who was a very important Orientalist, with a good knowledge of the Arab language. He had translated the *Koran* into English. Sale had thought of a public of libertins, curious and free thinkers, but the editors and scribblers used after Sale's death oriented the work towards an official Anglican view of history. The *Ancient part* was written by very notorious impostors such as George Psalmanazar and Archibald Bower, the first pretending to be a Formosan; the second, an ambiguous ex jesuit, was unmasked by a paradoxical alliance between Anglicans and Jesuits documenting that his escape to England from Italy was caused by a sordid love affair with a nun. Translated into German, and enriched with integrations and notes, it remained the basis of the great *Allgemeine Weltgeschichte* organized by true historians like Gatterer, Meusel, Schloetzer.

The *Modern part*, written between 1758 and 1762, was the first analitycal history of all the countries which European colonialism was able to conquer. The point of view of the main compilers, strictly connected with Lord Bute, the Tory Premier of George III, Tobias Smollett and John Campbell, was openly and brutally justificatory of the preminence of Europe and of its right to dominate the other continents.

For the whole of the Eighteenth century the more well known *Universal history* was dominated by a typical unresolved contradiction: if the *Ancient part* was not completely free from sacred history, the *Modern* included all existing peoples and civilisations, giving them in many cases a first historical identity from the Western point of view. This was true not only for China, India, Japan, Persia, and the Americas, where the sources were becoming quite rich, but also for African countries and spaces explored during the last decades. So the key to unifying the world was no longer religion, but rather a brutal colonialistic ideology. The English writers of the *Universal History* had no doubts that...
Europe had a right to unify the world, imposing not only its power, but also its history and times.

It is quite impossible to compare this huge compilation with the *Essai sur les moeurs* by Voltaire. He not only made a real attempt at constructing a grammar of policentric civilisations in his preface, which he called *Philosophy of history*, but his work identified a complex Middle Age period in which were considered not only Western, but also Oriental Europe, the Arabs and the Byzantines. But his work too suffered from unresolved contradictions. Trying to fight against the monogenetic solution of the Bible and choosing a poligenetic one, Voltaire ran the risk of accepting, if not inventing, a sort of archetype of racism, by theorizing for example the biological inferiority of Negroes.

During the second half of the Eighteenth Century the spatialisation of the world had to deal with a very important enlargement that cancelled *Terra Australis incognita* from the maps of the world. If we scrutinize the *Histoire générale des voyages* organized by François Antoine Prévost utilizing an English canvas, as a work in progress, while also considering the volumes published after his death, we are able to see in their full extension two conflicting colonial ideologies between England and France, which culminated in the travels by Bougainville and Cook before the American Revolution.

The true historiographical change of the Eighteenth Century with regard to time was the conception of natural time identified by George Leclerc Buffon. Before him (as is documented in a very good and recent work by Rhoda Rappaport on the connexions between history and geology) Maillet in his manuscript on *Venus physica* had spoken of an earthly time of two billion years. The correction of his editor, Jean Baptiste Le Mascrier, to two million in the text, was quite pathetic.

The same Le Mascrier had collaborated with Antoine Banier, the learned interpreter of ancient mythology, to catholicise a pre-anthropological enterprise organized by Jean Frédéric Bernard, *Cérémonies et coutumes religieuses de tout le monde* (1723-1742) comparing all religions (monotheistic and politeistic models) from the point of view of rituals: a libertine and free thinker attempt, which also considered the masonic lodges and ceremonies in the openly radical English translation. To go back to Buffon, he talked about a history of the earth which was completely incompatible with the sacred time which chronologists had taken from the Bible. With him and his work (*The epochs of nature*) the perception of time and implicitly of periodisation was completely modified. Not by chance the English translation of a very important and fascinating book written by Paolo Rossi, comparing earthly history with that of nations, has transformed the original title into *The Dark Abysses of Time*. A sense of vertigo, bewilderment and dejection from a reassuring dominable and guaranteed time,
contributed to the building of a new romantic sensibility.

Raynal-Diderot, in their *Histoire des deux Indes* - which has been defined as a fragmentary history by Michèle Duchet - even if didn't discuss the Western sense of time, offered a serious contribution to denounce the European vocation to colonialize and destroy other civilisations.

The last work I shall quote, written not by chance at the same time as the problematic answer to the question: *Was ist Aufklärung* (I am talking about Immanuel Kant) posed a problem to which we still have an obligation to give a response: how to write a World history from a cosmopolitan or universalistic point of view. Otherwise our sad destiny could be an icy economical and conformistic globalisation without ethical universalism.