

Time and Globalization

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It is common to observe that modern communication and transportation technology have progressively "conquered" the barriers of space and time. From this, one might infer that the globalization of time is a peculiarly contemporary and unidirectional phenomenon, but it is neither. While epitomized by atomic clocks and world time as new and irreversible, the de-localization of the temporal has a historical roots throughout the modern era and the urge for temporal differentiation continues to compete with the tendency toward spatial convergence of temporal practices.

Social theorists distinguish "social" time from subjective personal time and natural time. The latter is the time of Newtonian physics; it is the uniform, continuous, and infinitely divisible time of celestial objects and natural processes. After Einstein, time could no longer be seen as an absolute, but physical time remains objective and outside of human experience. At the opposite extreme is the purely subjective time of inner experience. In between is social time, time as collectively experienced, delineated, and reckoned – the way days and years are subdivided and counted, the social rhythms with which ordinary times alternate with special times, the points of the past that are remembered, the pace of everyday life. Globalization subjects social time to two competing, though not necessarily balanced, processes: temporal integration and homogenization, on the one hand, and temporal differentiation and distinction, on the other.

The intersections of time and globalization range from how the past is remembered to the rhythms of everyday life. Five issues will be considered here: historical trajectories, collective memory, calendars, clocks, and temporal styles. Globalization raises the question of whether the previously distinct, or at least relatively independent, temporal/historical trajectories of regions and nation-states have begun to converge. Globalization's increasing mobility of persons, goods, and communication can either dilute collective memories or re-energize them. Similarly contradictory trends can be seen in the history of calendars and clocks, both subject to standardization and the urge to maintain localism. Finally, globalization can homogenize temporal styles – the tempos, temporal metaphors, temporal practices that are characteristic of social locations – through diffusion or coercion, or it may encourage the maintenance of distinctive temporal styles as a mark of cultural identity.

Historico-Temporal Trajectories

Social theorists, from Condorcet to Braudel, have asked whether the temporal trajectories of all civilizations could be described in terms of cross-cultural and trans-historical stages or cycles. In *The Communist Manifesto*, for example, Marx and Engels confidently envisioned a grand narrative of world history; subsequent thinkers have postulated equally universal narratives. A counter-tendency was the recognition of multiple developmental trajectories: an Asian capitalism that evolves differently from European

capitalism; a southern hemisphere modernization that proceeds differently from its northern counterpart. Globalization adds an “end of history” meta-narrative to this conversation. Even if divergent trajectories or out-of-synch cycles have existed, globalization leads to the convergence of historical trajectories not conceptually, but pragmatically, because of the actual coupling of events and conditions across the globe. The world-wide threat of nuclear, economic, or ecological catastrophe, for example, overwhelms temporal localness, effectively synchronizing regionally parochial historical trajectories. It can be argued, in other words, that global movements of labor, capital, information, and products render history a case of *una destinatio, viae diversae* (one destination, many roads).

Globalization and Collective Memory

How the past is remembered is also affected by globalization. Socio-cultural units, from families and tribes to nation-states and empires, are characterized by collective, social memories that include how the group divides “pre-history” from history, distinguishes events and non-events, and memorializes the former in anniversaries, holy days, or official holidays (Zerubavel 2003). As social units become enmeshed in ever widening networks of contact with, or subordination to, other units, conflicts among diverse mnemonic traditions can lead to either convergence (as when one set of collective memories displaces others) or divergence (as when one group resists temporal colonization by re-emphasizing its own mnemonic identity).

This process probably began with the earliest encounters between groups with different origin myths. It continues today as activists urge Americans to reconsider treating Columbus' voyages as the “beginning” of American history or new Iraqi school books replace Baathist-centric narratives with more “universal” accounts of Mesopotamian history. Parallel to such trends, or sometimes in response to them, nations, regions, and ethnic groups can re-energize local collective memories as part of a political strategy (as, for example, occurred in the former Yugoslavia in the 1990s).

Another component of collective memory consists of shared definitions of special days and dates as anniversaries, holy days, and legal holidays. Here, too, globalization leads to mixed effects. Most designations of publicly recognized anniversaries are effectively anti-global, being confined to nation-states or regions within states. In fact, their celebration is frequently tied to the expression of local patriotism and distinction from geographical or political neighbors. The primary exceptions are religious holidays (“Muslims across the world marked the beginning of Ramadan today”), although social movements have begun to make progress in this direction (e.g., “Earth Day” or “International AIDS Day”).

Calendars

Calendars are a common temporal practice subject to globalization. Calendar systems include ways of counting years, how the year is divided into subunits (such as seasons, months, weeks), how these units are named, and the rhythms with which they are experienced. The Gregorian calendar and the seven-day week exemplify how religion, commerce, empire, and culture combined to produce the globalization of calendar time.

The Gregorian calendar was introduced in 1582 to replace the Julian calendar which had been in use since 46 BC, and which is still used by some sects to calculate holidays. Both

systems include a 365 day year and a rule for adding a periodic "leap year" to account for the tropical year being slightly longer than 365 days. By the 16th century the Julian leap rule left the calendar about 10 days out of synchronization with the solar date. By contrast, the Gregorian calendar is off by only one day in 5025 years. The reform was adopted by Catholic regions of Europe in 1582 and most of the rest of the continent by 1700 and England and the American colonies in 1752. Other calendar systems are technically superior and older, but remain regional or historical artifacts. The Jalali calendar, for example, dates back to the 11th century and loses a day only every 141,000 years, but is relatively unknown outside Iran.

In addition to how years are subdivided, calendar time includes how years are numbered. Cultural groups typically count from their actual or imagined founding years. Thus, the Christian west starts with the birth of Jesus (now recognized to be off by four years), the Islamic calendar has its starting point at the flight of Mohammed from Mecca, and the Jewish calendar starts counting from the creation of the world some 5000 years ago. The contemporary co-existence of different year-counting systems and the frequent translation between them further illustrates the globalization and counter-globalization processes already mentioned.

Under calendar time one also must consider the seven-day week, the one standardized temporal cycle with no natural analogy (Zerubavel 1985). The seven day week had its origin in Western Asia and was spread world-wide by Judaism, Christianity, Hinduism, and Islam. Other length weeks have been instituted (10-day weeks in the French Republican calendar, 5-day weeks in early Soviet calendars, for example) only to be met by a return to seven-day weeks within a few decades. Still, against the global homogeneity of the seven-day week different cultures "accentuate social contrasts [by] ... establish[ing] calendrical contrast" as in the deliberate designation of the Christian day of worship on a different day from the Jewish Sabbath (Zerubavel 1985, 22).

Clocks

Clock time, like calendar time, involves subdivisions and counting, and, too, it is subject to opposing processes of integration and differentiation. The division of the day into 24 hours of 60 minutes of 60 seconds and the existence of international time reference sources are perhaps the most globalized aspects of time. The social construction of time zones, on the other hand, represents a compromise between globalization and localization : broad east-west regions have synchronized times that are only approximately accurate with respect to local solar time.

The appearance over several millennia of the earliest clocks, sundials, in ancient cultures all around the globe suggests both diffusion and independent discovery, but the real globalization of clock time starts only slowly with the spread of mechanical clocks in Europe between the 13th and 16th centuries. Even then, though, limitations on the speed and extent of transport and communication were such that reckoning clock time could remain a local phenomenon, with differences of several minutes between neighboring towns being common and unproblematic.

With the expansion of long distance sea transport, navigational needs motivated the invention in the 18th century of a marine chronometer that kept time to within a fraction of a

second per day. In addition to allowing accurate determination of longitude at sea, this invention allowed clock time to be transported reliably across space.

By the mid-19th century, railroads moved fast enough that local time presented coordination problems, and England, Scotland, and Wales began using "railway time" with a standard maintained by telegraphic transmissions from the Royal Observatory at Greenwich. As railroads spread across continents, the dual goals of standard time and observing noon everywhere more or less at mid-day led to a system of time zones that was adopted by international convention in 1884. The globe was divided into 24 zones, each 15 degrees of longitude wide; within each zone the hour and minute would be synchronized, and between adjacent zones the time would be offset by one hour. Time zones yield temporal uniformity, but the residual desire of social groups to have their "own" time is suggested by the zig-zag patterns of actual zones, and the way local identity can be served by "choosing" time zones as when the Baltic states took advantage of perestroika to adopt Finland's time zone.

Clock time is now controlled by international agreements. Universal time (UT) is the number of hours, minutes, and seconds since midnight in the Greenwich time zone. Since the earth's rotation is slightly irregular, an average called "UT0" or Greenwich mean time (GMT) is used. In 1967 the second was redefined in terms of atomic vibrations rather than as a fraction of the day in a standard called International Atomic Time (IAT). A 1972 international standard that relates GMT and IAT is called Coordinated Universal Time (UTC). UTC, coordinated in Paris by the International Bureau of Weights and Measures, is the basis of most legal and broadcast time standards.

The instant communication and virtual "meetings" between people with different times made possible by the internet has given rise to a number of innovative time proposals. "Hora Terrae" (HT), for example, gives the time in terms of the longitude where it is currently midnight. "New Earth Time" (NET) is a commercially proposed standard that divides the day into 360 degrees.

Temporal Styles

Globalization also affects what can be called temporal styles. Anthropologists and psychologists note that social entities, from families to nation-states, have distinctive tempos, rhythms, and cycles (e.g., Hall 1959). Places and groups vary in terms of the degree to which time is rationalized or punctuality is important or how "work time" is balanced with "leisure time." Absent globalization, local and regional temporal styles flourish, and travelers between countries, classes, and institutional realms either relish, for example, "the slower pace of village life," or become frustrated by loose interpretations of "an appointment" (Levine 1997). Increased globalization can lead to a deterioration of temporal diversity, as, for example, when norms of "business-like" temporality diffuse within or between cultures.

As with other aspects of time, there is a tendency to mis-read contemporary thinkers as if they claim this to be a peculiarly contemporary phenomenon. Castells, for example, writes that temporality has become universalized in a "network society" of real-time global capital markets and "just in time" labor (Castells 1996, 434), and Giddens argues that one of the dominant characteristics of modernity is the separation of time from space made possible by the standardization of time across the world (Giddens 1990). But these and other scholars (e.g., Harvey 1989) know that globalization of temporal styles, like that of other aspects of time, is longstanding. Ever since the rationalization of the schedule in the Order of Saint

Benedict first diffused out of medieval monasteries and influenced what Max Weber described as the “Protestant Ethic,” the spread of economic rationalization has carried the temporal styles later associated with "factory time" far and wide. As Lewis Mumford wrote in 1934 : “...the clock, not the steam engine is the key-machine of the industrial age” (Mumford 1963, 14).

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