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### The Calendar as a Measure of Human Time

Time flows like a river, we think, and just as we find it useful to map a river’s rate of flow, so we find it necessary to measure time. We use the same method for measuring the fourth dimension as for the other three—adopting a known unit of measure (a fixed and stable measured quantity) to count, and thus measure, the unknown. The precision of any measuring device can be no greater than the precision of the unit standard used to calibrate it, and our confidence in the measurement can be no greater than our assurance that this unit standard of measure is unvarying. To merit the highest degree of confidence, the unit of measure must be an observable of nature, and one not subject to either natural variation or human manipulation. That is why modern standards of length, as well as of time, are based on atomic or astronomical events, the most unvarying natural cyclical periods we know of.

From time immemorial man has measured earth’s three most important astronomical periods,

the time needed for...

the day	one revolution of the earth on its axis
the month	one orbit of the moon around the earth (29.5306 days)
the year	one orbit of the earth around the sun (365.2422 days)

and created calendars to count his days, months, and years, both for practical and for religious (later philosophical and scientific) reasons.

Of these periods, it is clear that the day is the most important and fundamental, since it is the prime regulator of the greatest portion of man’s activities. This is confirmed by the fact that the day is the unit of all calendars; likewise, short-term measuring devices (gnomon, sandglass, clock) are all calibrated to measure the subdivisions of the day.

The solar year’s importance derives from the fact that it tracks the four seasons through one complete cycle, whose phases must be planned for and observed alike by primitive hunter-gatherers, by settled farmers, and by the roving bands who preyed on them. The moon provided early man’s only nighttime illumination, waxing and waning through its cycle, which is in phase with the female fertility cycle, and became the basis for regulating the night time hunt. But the periods of the moon and the sun are out of phase with the day, and with each other, and cannot be used to count blocks of days—at least not without finagling.

Nevertheless, *Encyclopaedia Britannica* (1965) [hereinafter *EB65*] informs us that the earliest known calendars were either lunar or solar (except for the Jewish calendar, which was “lunisolar”) but in one way or another way all types of calendars took account of the year as an aggregate unit.

The *OED* offers us a year-centric definition of “Calendar”:

The system according to which the beginning and length of successive civic years, and the subdivision of the year into its parts is fixed.

A better definition might be: a system for counting out the days of the lunar cycle, and the lunar cycles (months) of the year, so as constitute a regularly repeating cycle. But first, what about the week?

Although the week is not one of the necessary strands of the primitive calendar, every culture seems to have its week, ranging in length from 4 to 8 (or “double four”) usually named days. And in most of these cultures, either the final, or the penultimate day, was “market day”, which certainly provides one good reason for having weeks. The fact that seven seems to have emerged as the most common length of the week may have something to do with the fact that (as experimental psychologists inform us) seven is the number or elements the average man can juggle in his mind at one time. The Scandinavian week had five days (and our own 5 “weekdays” are named for the same Scandinavian gods), to which we add the Roman Satur(n)day, and the pagan Sunday, which we have recast as the Jewish Sabbath of Genesis, which perhaps came from the Babylonians after the 6th century B.C.E. Captivity.

### Dates & Calendars in the Abstract, and in Old Records

A “day” or “earth day” is the time required for the earth to make one revolution on its axis. This period is of prime importance because it also measures the alternating periods of light and dark around which most human activities are organized. Copernicus notwithstanding, given our geocentric perspective, we tend to think of a day as the time it takes the sun to revolve around the earth.

Even if the earth did not spin on its own axis, the sun would still appear to revolve around the earth, except that it would seem to take over 365 times as long. Actually of course, it is the earth which revolves around the sun, every 365.2422 of its days, as it turns out. We measure this period, called the “astronomical year”, as the time between successive vernal (or autumnal) equinoxes.

A “calendar” is a system for aggregating days into convenient clumps for measuring the passage of longer periods of time. The astronomical year is an important period because it constitutes one complete cycle of the seasons, with all their implications for weather and agriculture. Unfortunately the “astronomical year” is not an integer multiple of the “earth day”. Nor is the other prominent and universal sky clock, the moon and its periodic cycle, integrally related either to the natural day or the natural year. For a calendar to keep time in step with the heavenly bodies, and as accurately as they, it must be periodically adjusted. That is why it is well to think of a “calendar” as a “system”.

A date may be defined as a particular day on the ontological timeline. To specify a unique date, day-month-year are not enough—one must also know the calendar these refer to. A “calendar” may be defined as a system of aggregating solar days into clumps of a size convenient for measuring and tracking.

In other words, the familiar day-month-year quantifiers must be calibrated. For most record series the calendar of reference need not actually be specified because it is implicit. Calendar adoptions and changes have generally been officially scheduled to take place on a particular day throughout the breadth of a whole polity (usually a country), so it is reasonable to presume that most public, and even private, records observe the contemporaneous nominal calendar at any given time.

The picture is considerably complicated when two countries with extensive interdealings subsist on different calendars. A set of records which may refer to either of two (or any of many) parallel calendars must be carefully analyzed to determine which calendar is the implicit one, or, in extreme cases, which calendar each individual record refers to.

Fortunately record sets or series of this kind are rare—so much so that the widespread practice of double-dating the years in English (colonial) records during the 150y period when Scotland and the Continent were on different calendars, must be regarded as an unnecessary scrupulosity. Moreover, a date with a double-dated year is still formally ambiguous. How do we know which of the two calendars indicated by the alternate years is meant? As it happens, custom tells us that the old Julian calendar is meant for double-dated year dates, but not everyone who made entries into records had a clear understanding of this convention, so dates of this kind are suspect, at least when they are encountered as isolated cases.

I coin the term “calendar tags” for all such methods of explicitly indicating a calendar of reference.

### Making Calendars

The *EB65* tells us that the earliest known numbering systems were constructed on the natural bases of 5, 10, and 20—natural, because these are the number of fingers and toes available to everyone for doing “arithmetic”, using the fingers and toes – for those agile enough to count on their toes. We also find number systems based on 12 – fingers & feet – and with this additional number as factor, man could begin to construct adequate calendars, since there are 12 lunations + 11 (or almost 1) lunations in a solar year.

The early calendars used many devices for “making up” the year. One way would be to create a 60 day bi-lunary period of two lunations, with an additional intercalated day; then 6 of these period would make a year, with the addition of 6 additional days. Perhaps there are forgotten cultures with six-based number system, and a double-month calendar. We do know that many early civilizations used the number 60 in their astronomy, and 6 60s also make 360, the number of degrees in the compass. We even know of an 11<sup>th</sup> Century B.C.E. Chinese civilization with a 60-base numbering system.

Finally, since civilized man lives not by bread alone, all three of these natural-cycle time measures inevitably acquired higher-order overtones of cultural meaning: religious, political, and later philosophical & scientific. Religious symbols (gods and their manifestations) typically emerge to cloak whatever man intuitively as important, and these elements, once hypostatized, tend to perpetuate themselves by their own inner logic (e.g. the Catholic Church’s obsession with pre-empting such important lunar-linked Jewish holidays as Passover, left Easter itself lunar-based, and thus virtually guaranteed that the months would remain a feature of the western calendar, even though many Christians (eg. the Quakers) would gag at their pagan names.

### Calendar Dates

A “date” is a reference to a calendar day which uniquely identifies a particular day on earth.

Dates, and the days they refer to, might simply be numbers within each year, or they might even have unique names. The Roman Catholic Church calendar has very nearly a name for each day, and the French Republican Calendar did – including names like “eggplant” – although for reasons easy to imagine these never caught on. As it happens, the calendar years we have ended up with are all divided into calendar months, which may be numbered, but are more usually named, and whose days are nearly always numbered, though the Roman Civic Calendar named three days of their months Kalends, Nones, Ides, and all the other days are numbered in terms of these).

Years themselves must be numbered relative to a starting point, if there is to be any such thing as history. The earliest year-numbering systems we know began each calendar on the day a new monarch began his reign. Thus each reign had its own calendar, with its own “year 1” or “first year”, and its own New Year’s day. These reign-based calendars persisted well into the American colonial period, though only as a supplementary anachronism. They have become anachronistic because reign-based calendars virtually defeat intercalendrical reckoning.

Fortunately, for centuries now, most calendar systems have standardized on the first full year in the life of Jesus Christ as the first year of the Christian Era (1 C.E.). This system too might be seen as regnal calendar—the old term for C.E. was “A.D.” (“Anno Domino”, in the Year of Our Lord). Now that the Church, and what used to be called Christendom has reverted to the old Roman New Year’s of 1Jan, we are left with the anomaly that Christ was actually born “B.C.E.”—before the Christian Era.

There is no year 0 in this convention; the year immediately preceding 1 C.E. is 1 B.C.E. This further complicates date arithmetic between the Eras. Taking 1 rather than 0 as the base also confuses the issue of when the century or the millennium ends. 1Jan2000 is not the beginning of a new millennium; it is the beginning of the last year of the old millennium.

Hereinafter, I will use “calendar” to designate a particular system for uniquely designating each of the series of actual earth days. It should be noted that a “calendar” in this sense must be based upon a particular “first” historical day marked by some unique extra-calendrical event. Since I define “calendar” here as a system for denominating actual days, I allow that a calendar [system] may be projected (anachronistically) backwards, or (prospectively) forwards into a period possibly to be covered by a different calendar system.

### Julian vs. Gregorian Calendars

The western world has generally followed the same calendar system since the time of Julius Caesar; the eponymous Julian Calendar was adopted in 45 B.C.E. during this first Caesar's reign. A major reform of the Julian Calendar was undertaken by Pope Gregory in 1582 to correct, and obviate, the drift caused by the incomensurability between the earth day and the earth year of 365.2422 days. The Julian system adjusted for this approximately by intercalating one "leap day" every four years, during C.E. years divisible by 4; this simple leap day system accommodates an earth year of 365.25. The Gregorian reform eliminates the leap day in century years (C.E. years divisible by 100, like 1900 C.E.), unless such century years are also divisible by 400 (like 2000 C.E.), and thus loses one day every 400 years and thus refines the approximation.

### Reform of the Western Calendar

There were two independent components to this reform:

- (1) the standardization on 1Jan as New Year's Day
- (2) the elision of a number of days to effect the Julian->Gregorian calendar reform

### The New Year's Day Reform

New Year's day under the Julian calendar was 1Jan, but the convention was attacked by the early Christian Fathers, and later the Popes, who were intent on imposing Christian orthodoxy on a pagan world, and no less obsessed with distinguishing their new faith from Judaism.

The Church succeeded, retroactively (with Constantine, I suppose), in recasting the base year of Western Civilization as the first full year of Christ's life on earth. This has been ever since year 1 "A.D." (for "Anno Domini"—the Year of Our Lord); this has been changed to "C.E." (for Christian Era) in recent decades, now that God, after all, is dead. The Church Fathers were also determined, though, to coopt the starting day of the year, by ordaining it to coincide with of the main Church festivals, thereby giving rise to several alternate "year styles". The principal candidates were these:

1Jan	Circumcision Style (the date Christ was Circumcised)
22Mar-23Apr	Easter Style (the date of Christ's rising to preside over the Heavenly kingdom)
25Mar	Annunciation Style (the date Christ's conception was announced to Mary)
25Dec	Christmas Style (the date of Christ's birth)

Which of these is the odd man out? The latter three "styles" all had their overlapping vogues, creating several parallel calendars in the process, but in the end the Church threw in the towel and fell back on the old pagan New Year's, though they apparently attempted to save face by calling this "Circumcision Style", ironically a vestige of Jesus' initial Judaism.

The Roman New Year's day prevailed until the 7th century C.E., when the Church managed to rebase the new year on Christmas. This convention lasted in some places until the 12th century, though it was gradually abandoned in favor of Annunciation Style (25Mar) in the 9th century in parts of southern Europe. Annunciation Style only became widespread in Europe from the 11th century, and in England the late twelfth. It then held sway until the sixteenth century, when there was a reversion to 1Jan, starting in Venice in 1522. Pope Gregory formalized this change in 1582 as part of the Gregorian reform, but Annunciation Style was retained in Florence, Pisa and England until the middle of the 18th century. It was carried to England by the Normans, although the Scots switched to 1Jan in 1600, a century and a half before the rest of Britain, which co-ordinated its switch in 1752 with implementation of the Gregorian reform proper.

There had also been throughout this period intermittent attempts to base the New Year on Easter—a floating holiday under the ecclesiastical calendar. The shenanigans with Easter suggest the real motivations of the Church. Easter had been keyed to the Jewish holiday of Passover, itself based on the actual lunar period. But the Church fathers were evidently hoping to pre-empt Passover because they deliberately complicated the determination of Easter to ensure that: (1) it would approximate Passover, but (2) it would never actually coincide with Passover, and (3) it would always fall on a Sunday—the traditional Christian Sabbath. Stipulating that Easter fall on a Sunday, of course, eliminated all historicity from the date, and one sect of Christians refused to go along with this perversion; for their scruples they were branded heretics.

On many jurisdictions, the New Year’s Reform occurred the same year the Gregorian calendar was adopted. For most our English-speaking culture (the British Empire, including British North America), both changes were made in the year 1752. This means that two separate calendar gaps were created: (1) at the end of 1751 when 31Dec1751, the 10th month of 1751, was succeeded by 1Jan1751, the first month of 1752; and (2) in September, when 11 days were skipped over in the calendar.

Year of Adoption of “Circumcision Style” (reversion to the Roman New Year of 1Jan)  
Ginzel vs. Spathky (these two sources differ somewhat)

Year	Political Entity
1752	Britain & Empire (except Scotlant)
1559	Denmark, Sweden
1568	1564 France (generally)
1581	France/Germany (Metz, verdun)
1579	France/Germany (Lorraine)
1500-1599	1544 Germany (generally)
1555	Germany (Aachen)
1618	Germany (Cologne, Trier)
1749	1559 Germany (Prussia)
	Italy (Florence, Pisa)
	1721 Italy (Tuscany)
1797	Italy (Republic of Venice)
1266-84	Kingdom of Naples
1575	Netherlands
	1556 Netherlands (Catholic)
	1583 Netherlands (Protestant)
1450-1499	Norway
1456	Poland (generally)
1550-1599	Poland/Germany (Silesia)
	1725 Russia
1600	Scotland
1500->	Spain, Portugal
	1556 Spain, Portugal, Netherlands (Catholic)

### The Gregorian Calendar Reform

The Gregorian Calendar reform, promulgated 24Feb1581, had as its purpose, to bring the civil and church calendars in sync with the equinoctial cycle. To accomplish this required three changes:

- (1) ten days (from 5Oct1582 thru 14Oct1582, incl) had to be deleted
- (2) henceforth, century years had to be treated as ordinary (non-leap) years unless they were divisible by 400
- (3) the method of calculating Easter had to be changed

Item (2) needs no further explication and I pass over (3) here.

Item (1), the extracalation of 10 or more days, had to be scheduled for a definite series of days.

The pope also formally switched the church’s New Year to 1Jan, but this was not technically a part of the Gregorian calendar reform, and it should not be assumed that as other polities implemented this reform they did so co-ordinate with the New Year switch, as did England in 1752. Indeed, quite the contrary: most other polities (e.g. Scotland) made the New Year switch and implemented the Gregorian calendar at different times.

### The 1752 Calendar Reforms in England & Colonies

In 1751, the English Parliament enacted two distinct calendar reforms, each to take effect on a particular day in 1752 throughout England and her colonies:

(1) the Julian -> Gregorian reform

i.e. conversion to the Gregorian calendar's more precise method of intercalating extra days into certain years, and adjusting the current calendar to the Gregorian by the elision of the necessary number of days (10 in 1582) to correct the accumulated drift.

Effective Date for England & Colonies: 2Sep1752 was followed by 14Sep1752

& (2) the "New Year Style" reform

i.e. adoption of 1Jan as the first day of the civil year ("Circumcision New Year Style")—in England and Brit America New Year's Day had been 25Mar ("Annunciation New Year Style")

Effective Date for England & Colonies: 1Jan1752 was deemed the first day of the new year

It's important to understand that these distinct, though often conflated, reforms took effect on different days and might well have occurred in different years. Most other countries had long since made both changes, and not necessarily in the same year. Scotland, for example, embraced the New Year Style reform alone in 1600 when it was still an independent country. The Netherlands, on the other hand, switched to New Year Style in 1575 *before* Pope Gregory promulgated his 1582 reforms, and its Catholic provinces went Gregorian on 1Jan1583; the Dutch Protestant provinces, however, perversely held out against the Pope's reforms until 1700-1701 when they finally converted to Gregorian piecemeal. I have assembled what I have learned from my research into the history of calendar conversions into an **Appendix** to this article.

### Calendar Tags & Old Records

Since even the cosmopolitan western world has seen a plethora of calendar systems, and variants of systems, complete specification of a unique calendar day logically requires a label which associates it with a particular calendar, i.e. it should be "tagged" to a particular calendar.

Scribes don't usually bother with calendar tagging—understandable, given the fact that calendar systems are so seldom changed. So to identify the specific earth day designated by a recorded calendar date, we first have to determine its base calendar from the records context. This is not usually difficult where a dated record is an item in a chronological series, but interpretative calendar tagging can quickly become problematic where this sort of context is lacking.

Therefore for purposes of note-taking, and for the present discussion, I have defined my own set of "calendar tags" which might be affixed to the header portion of a set of records, or, where the records are of mixed calendars, to individual records. These conventions cover only the few calendars I am mainly concerned with, but can easily be extended:

@JA Julian Calendar, Annunciation Year Style (25Mar is New Year's Day)

@JC Julian Calendar, Circumcision Year Style (1Jan is New Year's Day)

@GC Gregorian Calendar, Circumcision Year Style (1Jan is New Year's Day)

I embrace the presumption that records are dated according to the convention of their time, place, and other contexts, unless there is clear evidence to the contrary. Thus I presume that most English (colonial) records before 1752 are @JA, most Scottish from 1600 to 1752 @JC, and both types from 1752 on, along with most Catholic records from the 1582 reform on, I presume to be @GC.

Fortunately, most records occur in chronologically dated series, and this context usually provides conclusive evidence for distinguishing between these three most common types. For example, even without any double-dating, if the calendar is @JA, the year will roll over on or about 25Mar.

Of less importance are the calendar tags attached to (some) individual dates—most commonly double-dated years in English (colonial) records for @JA 1Jan-24Mar. These double-dated years merely confirm that @JA is the operative calendar, which, usually, we already know from context.

When dates are tagged to a calendar other than the prevailing one, I have seen a high rate of clerical error and misapplication of terms.

### **(Interpretive) Calendar Tagging in English (Colonial) Records “Old Style” vs. “New Style” and Double-Dating**

Two separate calendar changes were legislated by the English Parliament in 1751, to take effect in 1752: changeover of the New Year to 1 Jan (Circumcision Style), and adoption of the Gregorian Calendar (via the elision of the 11 days between 3 and 13Sep1752, inclusive. Technically, this gave rise to three calendar systems in Britain (except for Scotland which switch to 1Jan in 1600) and its colonies, not two as is commonly supposed—the domains of these calendar periods being: before 1Jan1752, from 1Jan1752-2Sep1752, and from 14Sep1752 on. In my calendar tagging parlance, these three domains are @JA, @JC, and @GC.

Corresponding to these two calendar changes, two kinds of double-dating are possible with reference to the anticipated, or already effected, changes: the juxtaposition of alternate years to account for the New Year change which affected the days between 1Jan and 24Mar, inclusive (e.g. “12Feb1748/9”), and the juxtaposition of alternate dates, involving potentially days, months, and years, to account for the Gregorian elision of 11 days in September1752 (e.g. “3/14Sep1752”).

As a matter of fact, instances of the latter form of double-dating are rare, but British records before 1752 back to 1600, and even before, are replete with double-dated years. We can not, however, take this to mean that all those double-dated years were in anticipation of the New Year change in 1752, which was legislated only the preceding year. Double-dating of years in English (colonial) records can only have been a way of acknowledging that while other populations related by political and commercial ties had already switched their New Years, the English were still operating by the “old style” of year dating, in which New Year’s day was March 25th.

The English clerks generally didn’t double-date years with any consistency. The most important parallel calendars were probably those of Scotland (which also clung to the Julian calendar until 1752, but switched to the Circumcision YearStyle (1Jan) in 1600) and thus @JC, and the Dutch, whose protestant Provinces had aligned with their Catholic neighbors to sport the new @GC calendar by 1701. In the colonies, 17<sup>th</sup> Century New Netherlands, and colonial MD, were also on @JC time. Thus English clerks who had dealings with these places, or with other European continental jurisdictions, might have sustained enough parallel calendar consciousness to induce them to annotate their dates accordingly, but without any very deliberate intent to reference any specific alternate calendar. If they had had such intent, double-dating of the year could only have correctly referenced the @JC calendars.

Where a set of records is even roughly chronological, as is usual for contemporaneously entered records, inference of which calendar the record dates reference is not dependent on the presence of doubled-year dating. It is enough to observe the rollover of the single-dated year around March to identify the calendar as @JA, and if we do not find this, the calendar is either @JC or @GC. Or, if we even know which polity we are dealing with, there must be a strong presumption that at least the official records of the place follow the established calendar convention.

If I date this present document 1Sep2007, you, my reader, do not see the need for me to also indicate that this date is meant to reference the @GC calendar. It is only at times when parallel calendars,



serving different populations in significant contact with each other, are in simultaneous operation (like different time zones in the present era), that calendar reference, or tagging, is often desirable, depending on the context. And calendar tagging (specific reference to qualifying standard), not double, or triple, or *ntuple* dating is the preferred method. We say 2:30 PM (EST), not 2:30/3:30/4:30... PM. If the clerks of old had though it out, no doubt they would have developed a similar calendar tagging convention, to be affixed, not to each individual date, but to a headnote introducing a list of dates.

However it appears that we are stuck with the present doubled-year dating convention, so it has become mandatory in scholarly historical publications to always provide a doubled-date corresponding to @JA and @GC, while treating a date like 23Feb1646 as incomplete. Meanwhile, date calculations which span the actual Gregorian gap (2-14Sep1752) are all too often faulty because the @JC period is forgotten. I imagine this problem is much more acute for polities like Scotland, and the Netherlands, with a far longer @JC period. I note that Anderson acknowledges this problem by explicitly requiring O.S. and N.S. tags for Dutch dates.

**Interpreting Colonial-Era Dates With Numeric Months**

Early English colonial dates, especially in devout Protestant America, were often written with numeric months, to avoid reference to the pagan gods in the month names from January thru August, even though the remaining months were named by the Romans numerically: September, October, November, & December (sometimes the hybrid abbreviations “7b<sup>er</sup>”=September... “10b<sup>er</sup>”=December are encountered, and these were often retained for convenience in post-Puritan times).

Since at least two conventions existed for numbering the months within years (AnnunciationStyle, where Mar=1st month, and CircumcisionStyle, where Mar=3rd month) numbered months are formally ambiguous before the 1752 calendar conversion. Since the months have different numbers of days, this ambiguity can usually be resolved when dates are presented in even roughly chronological series, viz.

If Day of the month is...	AND Month is...	The modern month is...	& Calendar Style is...
31	6	August	Annunciation (OS)
31	11	January	Annunciation (OS)
30-31	12	December	Circumcision (NS)
or 29 (xcpt leap year)	12	December	Circumcision (NS)
30	2	April	Annunciation (OS)
or 29 (xcpt leap year)	2	April	Annunciation (OS)

### Representing Transcribed Dates

The prior question, “How should we transcribe dates in our notes?”, is disposed of easily: literally—exactly as they are written. Assuming that we also know how to interpret the date correctly in its records context, the more difficult question is: “How should we represent such our interpretation of such dates without unduly distorting their original presentation?”

### Robert Charles Anderson’s Rules in his *Great Migration Publications*

The distinguished genealogist Robert Charles Anderson sets forth a complete set of rules for publishing dates with doubled years in his pre-1752 American colonial abstracts (page xxiv, “Form of Dates” in each volume of the *Great Migration* series):

Since England and the English colonies were still using the Julian calendar, a date which fell between 1Jan and 24Mar of the year could be ambiguous as to the year of date.

He then defines the following rules for abstracting such dates:

	where	
5Feb1637/8	doubledate appears in the original or can be inferred with confidence	
5Feb1637[/8]	doubledate can be reasonably inferred from context	
5Feb1637[/8?]	doubledate can't be inferred with much confidence	
5Feb1637	no inference can reasonably be made	

Anderson concludes his section on the representation of dates:

The use of “[NS]” to indicate New Style dates will be employed only for records created in jurisdictions already using the Gregorian calendar. Most of these will be from Leiden or New Amsterdam. In no case will a date created under the Julian calendar be adjusted to the Gregorian calendar.

### Critique of Anderson’s Rules

Note that Anderson conflates and thereby confuses the two distinct calendar changes of the English Calendar act of 1751 (1) the Gregorian reform, and (2) the Year Style change. He provides us with an elaborate convention for recording doubled-year-dates with various degrees of certainty, without telling us just why we should do this, or why the clerks did it, or what it is supposed to mean.

Anderson also says nothing about how he means to treat Old/NewStyle calendar tags when they appear in the original record. He does tell us that he will interpolate “[NS]” for Leiden records *after* the conversion date, which seems oddly gratuitous, but is consistent (except for the bracketing) with his treatment of double-dates before the conversion—provided you interpret these, as I do, essentially as OldStyle calendar tags.

Anderson’s approach has the great merit of consistency, advertised as it is by an explicit statement of his conventions, which is more than can be said for most contemporary scholars, let alone the original British clerks. However, I find Anderson’s editorially silent interpolation of a double-date when it “can be inferred with confidence” (thus conflating it with a double-date actually written), to be a bit problematic—requiring at least a bit of clarification. Perhaps he had in mind such indisputable cases where a series of day-month dates appear under the running head of a double-dated year. In any case, I prefer to reserve the unqualified form of representation for cases where the date is actually written in the record, but otherwise I find Anderson’s conventions here wholly acceptable.

**My Rules for Transcribing & Interpreting Dates**

The chief desideratum, for note-taking purposes, is simply to capture the original as accurately as possible, and that means using the square bracket convention for *all* editorial inferences. But what are the criteria which should guide such inferences?

First, it is reasonable to presume, given what the actual records tell us about the Calendar conversion in the British colonial world (and in England itself, if not Scotland), that a date before 14Sep1752 in an English (colonial) record is a Julian date—even if it is written with a doubled year for the dates between 1Jan and 24Mar—and that one from 14Sep1752 on is Gregorian.

Similarly, a date before 1Jan1752 for which the year is not doubled, can reasonably be presumed to follow the Annunciation Year Style (year begins on 25Mar), unless it is an element in a chronological records series which can be shown to follow a divergent pattern. The first, and most important step, then, is to analyze the records context to identify such a possible pattern.

**My Rules for Representing Transcribed & Interpreted Dates**

My general practice in dealing with primary source documents is to photocopy them if at all possible to preserve the literal data in its original context. When this isn't practical, I generally transcribe the original as literally as possible.

When it comes to the representation of dates in my publications, though, I believe that the typical reader is best served by my standardization and modernization to the usual genealogical date format: DDMMMYYYY. I prefer to concatenate the elements because a date is a conceptual unit, and I accordingly do not like to see a date divided between lines by word-wrapping.

Where double dating is appropriate, due to the existence of overlapping dual calendars, for the year part of date, I'm content to follow Anderson's conventions, except that I've eliminated the "can be inferred with confidence" category, and I bracket all dates which might have been, but are not, doubled in the original record (I've also appended an alternate, highly abbreviated, symbology here for cases where space is severely limited):

1637/8	+	where doubledate appears in the original
1637[/8]	[+]	where doubledate can be reasonably inferred from context
1637[/8?]	[+?]	where doubledate can be presumed, but with some doubt
1637		where no inference can reasonably be made

In summary, where at all practicable I accumulate photocopies of the original documents to preserve the dates in their original form, and otherwise I transcribe them with great literality in my notes—maintaining a certain interpretive agnosticism. However, when the time comes for interpreting these dates for analytical purposes and publication, I apply my interpretive expertise and represent the dates in a modernized form, that yet indicates where my the original leaves off and my interpretation begins.

APPENDIX: Dates of Gregorian Calendar Adoption

Where my sources provide a specific day of adoption it is the first day of the new calendar; I have calculated the last day of the old calendar and the # of elided days in <angle brackets>. The sometimes supplementary, sometimes contradictory information from Smith is flagged with an “~”.

OLD STYLE Last Day		NEW STYLE First Day	Political Entity
		1913~	Albania
			Austria
40ct1583	<10>	150ct1583~	Vienna (University)
50ct1583	<10>	160ct1583	Tirol, Salzburg~ (Bishophric)
14Dec1583	<10>	25Dec1583	Carinthia (Karnten), Styria (Steiermark)
6Jan1584	<10>	17Jan1584	Bohemia, Moravia, Vienna (Imperial)~, Lusatia (Lausitz) [or 23Jan1584~ for Lausitz]
12Jan1584	<10>	23Jan1584	Silesia (Schlesien)
18Jan1583	<10>	29Jan1583~	above the Enns
50ct1583	<10>	160ct1583~	below the Enns
130ct1583	<10>	240ct1583~	OberElsass, Breisgau
2Sep1752	<11>	14Sep1752	Britain (incl Scotland, Ireland, & the British Empire)
19Dec1916	<12>	1Jan1916~	Bulgaria
1929			China
18Feb1700	<11>	1Mar1700	Denmark
1875			Egypt
2Sep1752	<11>	14Sep1752	England, Scotland, Ireland, & British Colonies
		1753~	Finland
9Dec1582	<10>	20Dec1582	France generally (including Lorraine)
		28Nov1583~	Cleve (Duchy)

The French Revolutionary “Calendar of Reason”, was enacted retroactively to “Autumn” 1792. This ill-advised experiment divided the year into 12 months, each with 3 10-day weeks (a total of 360 days). The months were divided into 4 seasons:

Autumn (Vendemaire, Brumaire, Frimaire)  
 Winter (Nivose, Pluviose, Ventose)  
 Spring (Germina, Florea, Prairiel)  
 Summer (Messidor, Thermidor, Fructidor)

In its 14 years of operation this calendar had time to make the seasonal designations nominal, since by 1806 it was some 70 odd days behind the conventional calendars; France returned to the Gregorian Calendar on 1Jan1806 (on 11 Nivose XIV).

aft the Peace of Munster Alsace

		27Nov1583~	Strassburg (Bishophric)
		1648~	“areas controlled by westphalen”
5Feb1682	<10>	16Feb1682	Strassburg (City)
	before	16Jan1688~	Barr

German-Speaking Polities

Since most German-speaking areas were organized into small cities and principalities, but not countries, I have merged all these together into a single list. Switzerland, of course, is treated independently. Where known I provide both <EnglishName>/<GermanName>. Since this list is ordered by date of adoption, Protestant polities fall to the bottom.

21Dec1582	<10>	1Jan1583~ Feb1583~	Hennegau Passau
10Feb1583	<10>	21Feb1583	Luttich (Bishopric), [Trient~?]
13Feb1583	<10>	24Feb1583	Augsburg (Bishopric)
4Oct1583	<10>	15Oct1583	Trier [(Archbishopric)~]
5Oct1583	<10>	16Oct1583	Augsburg (City), Bavaria (Bishopric & Duchy~), Brixen~ (Bishopric), Eichstatt~ (Bishopric), Freising~ (Bishopric), Regensburg~ (Bishopric)
2Nov1583	<10>	13Nov1583	Julich-Berg (Duchy)
3Nov1583	<10>	14Nov1583	Aachen [or 11Jan1583~], Cologne (Archbishopric)
4Nov1583	<10>	15Nov1583	Wurzburg (Bishopric)
11Nov1583	<10>	22Nov1583	Mainz [(Archbishopric)~]
16Nov1583	<10>	27Nov1583	Baden (Margravate), Munster (Archbishopric), [or 28Nov1583 {Bishopric}] Strassburg (Bishopric)
14Dec1583	<10>	25Dec1583~ 2Feb1584~	Steiermark Ungarn?, "legally on 21Oct1587
1Jul1584	<10>	12Jul1584	Westphalia/Westphalen (Duchy)
16Jun1585	<10>	27Jun1585	Paderborn (Bishopric)
21Oct1587	<10>	1Nov1587	Pressburg (Parliament of), Bratislava
14Dec1590	<10>	25Dec1590	Siebenburgen
22Aug1610	<10>	2Sep1610	Prussia/Preussen (Duchy) [or 2Sep1612~]
13Dec1614	<10>	24Dec1614 1624~	Pfalz-Newberg/Neuburger Pfalz [or 24Dec1615~] Osnabruck~ (Bishopric)
15Mar1631	<10>	26Mar1631~	Hildesheim (Bishopric)
1Feb1668	<10>	12Feb1668~	Minden (Principality)
3Jan1686	<10>	14Jan1686~ Feb1686~	Wald-Mittelbach Odw. "btw 14Jan1686 and 4Aug1688" Neustadt an der Weinstrasse at least the nearby villages of Gimmeldingen & Haardt
18Feb1700	<11>	1Mar1700	German polities not already converted EB says the Imperial Parliament in Regensburg laid this down in 1700; Smith specifies the date. I thought Ginzel said date was 30Oct1699 but I probably misread him.
		May1923	Greece
16Feb1923	<12>	1Mar1923~	Greece (except the Church)
11Mar1924	<12>	23Mar1924~	Greece (the Orthodox Church)
		1587	Hungary
4Oct1582	<10>	15Oct1582	Italy generally except...
20Dec1749	<11>	1Jan1750~	Florence, Pisa
20Dec1872	<12>	1Jan1873	Japan
4Oct1582	<10>	15Oct1582	Luxembourg
			Netherlands/Belgium
			Catholic provinces
22Dec1582	<10>	1Jan1583	Brabant, Flanders, Holland, Hainaut, "and several other southern provinces"
			Protestant provinces
30Jun1700	<11>	12Jul1700	Gelderland, Zutphen
30Nov1700	<11>	12Dec1700	Utrecht, Overijssel
31Dec1700	<11>	12Jan1701	Friesland, Groningen, Genf~

- 18Feb1700 <11> 1Mar1700~ Norway
- 40ct1582 <10> 150ct1582 Poland & the Baltics  
 1617~ Poland, generally, including Danzig  
 Dorpat [now in Estonia]  
 "from 1625 to WWI went back to Julian"
- 5Nov1918 <12> 18Nov1918~ Latvia/Lettland  
 ~ Lithuania  
 "parts were Greg. til 1800 then reverted to Jul. til  
 WWI"~  
 1617~ Kurland/Courland~ (Duchy) [now in Lithuania]
- 40ct1582 <10> 150ct1582 Portugal
- 10ct1924 <12> 140ct1924~ Rumania (Orth Ch holidays still Julian)
- 1Feb1924 <12> 14Feb1918 Russia
- 40ct1582 <10> 150ct1582 Spain ["and all lands under Phillip II"~]
- 18Feb1700 <11> 1Mar1700~ Swedish suzeranties in Ger.  
 (Duchies of West Pomerania & Bremen-Verden)
- 17Feb1753 <11> 1Mar1753 Sweden  
 except that Sweden gave a nod to the Gregorian reform  
 from 1700-1712 by subtracting 1 day in 1700 (by not  
 treating it as a leap year), but then this  
 half-hearted measure was thought better of and Sweden  
 reverted to the the pure Julian calendar by adding  
 back an extra day-30Feb1712.
- 200ct1583 <10> 310ct1583 Switzerland  
 Basel (Bishophric)
- 11Jan1584 <10> 22Jan1584 Catholic cantons  
 Jun1584~ Luzern, Uri, Schwyz, Zug, Fribourg, Solothurn  
 Unterwald~[-Obwalden, Unterwald-Nidwalden]  
 The formerly protestant canton of Appenzell was  
 split into Catholic (Appenzell Inner Rhoden) and  
 Protestant (Appenzell Ausser Rhoden) sectors by  
 the counter-reformation in 1597; consequently both  
 calendars were used side-by-side, as in many of  
 the German states. The reform was adopted in part  
 in the Valais area (not yet a separate canton) in  
 1622 [11Mar1655~]. Graubunden, until 1803 a  
 league of city states, adopted the reform only in  
 its Catholic regions; the league as a whole didn't  
 formally accept the new calendar until 1812.
- 31Dec1700 <11> 12Jan1701 Protestant cantons & cities  
 Zurich, Bern, Basel, Schaffhausen, Geneva, Muhlhausen  
 Biel [and Tlurgau~?]
- 1724 Appenzell [Ausser Rhoden], Glarus, St. Gallen~ (City)  
 1760 Graubunden (piecemeal until complete in 1812)
- 19Dec1926 <12> 1Jan1926~ Turkey
- 15Jan1919 <12> 28Jan1919~ Yugoslavia, except for Serbian Orth Ch
- 2Sep1752 <11> 14Sep1752 United States & other British Colonies  
 followed the mother country in adopting the New Style  
 calendar except that the Alaskan territory stayed on  
 Julian until it was purchased in 1867 from Russia.

## Bibliography

In researching this subject, first I turned to my **Encyclopaedia Britannica** (1965) and also (1987); the Gregorian calendar is very thoroughly explained but details on its adoption in various places were lacking. Research at the University of California (Berkeley) library led me to a 1982 Vatican publication of proceedings of a conference on the 400th anniversary of promulgation; the relevant paper therein, while suffering from like defects, steered me at last to an important secondary source (in the main stacks at UCB):

F.K. Ginzel, *Mathematische und Technische Chronologie*, (Leipzig, 1914)

Vol III of this work of German scholarship contains chapters on the adoption histories for both types of calendar conversions: Ch. 244 (157-170), for the “Jahrestile”, and Ch. 255 (266-279), for “Die Einfuhrung des Gregorianischen Kalenders”.

The following self-published article provides additional, and partly contradictory information:

Mike Spathaky, “**Old Style and New Style Dates: A summary for genealogists**”

(Mike Spathaky [CompuServe 100417,2363], 1995)

who in turn cites:

**Whitaker’s Almanack**, 126th edition (1994)

“Calendar” in *Encyclopaedia Britannica*

Cheney C R (ed.) **Handbook of Dates for Students of English History**, (London, 1948).

I’ve supplemented these with adoption data from the excellent recent guide:

Kenneth L. Smith, **Genealogical Dates: A User-Friendly Guide** (CamdenME: Picton Press, 1994)

which provides supplementary detail on many dates of the Gregorian adoption, but although there is a bibliography, Smith does not tell us his source for this information.

The lists in Ginzel and Smith are only partially overlapping, and there are several discrepancies between them. Since I know Ginzel to be a scholarly work, I give him the nod. But I have merged in the contradictory as well as the complementary information from Smith, nonetheless, tagging it with a “~”. Smith says this about his own data:

A word of caution about using this list: one must not accept it as gospel. In general, the researcher must determine the conversion date himself for his particular area of interest. The “official” dates are at best a marker as to where to start looking. For example, although Protestant Germany supposedly converted in 1700, there are at least some towns which can be documented as having converted in 1686...

Although the cautionary attitude here advised applies equally to Ginzel, it is misleadingly agnostic. If research gives us a specific date upon which a polity adopted the new calendar, the presumption must be that any public records after that date are based on the new calendar. Only private (and particularly church) records are likely to be exceptions to this dictum. Ginzel does make the point that in areas like Germany, where the Gregorian reform was adopted piecemeal on a very local basis, actual usage was much less likely to switch neatly over on the official date, and double-dating was likely to thrive during an extended conversion period.

Since I first put together this report back in 2007, I have since discovered [an internet site created by one Toke Nørby](#), with much more extensive specific country information, though he appears to rely heavily on Ginzel, as I do.