The Tellus Calendar: A Metric and Perennial Proposal for Calendar Reform

December 2021

Gabriel V. Rindborg

gabrielrindborg@gmail.com

Abstract: Though calendar reform has fallen out of fashion in the early 21st century, the Gregorian Calendar is still a problematic timekeeping system that would benefit from adjustment or outright replacement. A number of reforms have been suggested since its implementation. Some of these, I argue, were too radical or not beneficial enough to warrant widespread adoption. I suggest instead a 12-month perennial calendar based on the French Republican Calendar (FRC), with 10-day weeks and three-week months. This, in my view, would bring enough benefit to warrant change, while also not shifting too many frames of reference at once. It would also be devoid of the social-political complexities which prematurely killed the FRC. In essence, it would be the as close to a metric calendar that could realistically be adopted in the near future. I term it the *Tellus Calendar*.

Time measurement is a fundamental element of civilisation. As with anything fundamental, their inherent peculiarities fail to stand out to most after internalisation. In the western world, that most peculiar of descriptive, the Gregorian Calendar still constitutes the monolithic paradigm of time measurement on the scale of the human life. Yet, it is a paradigm riddled with inconsistencies and oddities when compared to the standardisation achieved in other areas. In a continuation of standardisation, a form of metric calendar would appear to constitute the ideal. Yet many rationalisations of the calendar have been proposed since the onset of the enlightenment without any success in their adoption. I suggest that this is a consequence of failing to address the balance between excessive change, desirable change, and necessary change. A calendar requires the careful calibration akin to the handywork of a horologist.

The Gregorian Calendar presents a particularly unbalanced distribution of days, weeks, and months, which is not so much the doing of the natural rotation of the planet around our star, but a product of historical baggage. Consider the well-known knuckle trick used to aid in the memorisation of which months have 31 or 30 days. Then consider the strange 28-, at times 29-day month of February. Every child, and I suspect every adult, has at some point struggled with these days; perhaps even causing serious scheduling misses. The division of the year into four economic quarters is complicated by this fact, causing unnecessary fluctuations in performance and results (Hanke 2018; Rayasam 2015). Further, the 7-day week under a 12 month system is another oddity which makes it calendar non-perennial (El-Bayeh 2020), each month beginning on a different day of the week, as well as each year. Such a system is an unnecessary remnant of monotheistic religious practice from a specific part of the world. Would it not be better to know for certain that every 30th of the month was the equivalent of a Sunday? To top it all off, the Gregorian Calendar carries the inconvenience of not being algebraically balanced when traversing into pre-Christian times (Emiliani 1993, 1994). Since the year of the birth of Jesus Christ is set to the year 1, there is no year 0, and all conversions between BC/BCE and AD/CE require the unintuitive subtraction of a year.

Numerous proposals have tried to deal with these issues before. Some, such as Emiliani's Holocene Calendar, attempting only to deal with the question of the year 0. Others, such as the French Revolutionary Calendar, and the Positivist Calendar attempted to radically redefine the entire system from the ground up. Despite support for the 13-month year, the League of Nations was unable to implement such a reform for a number of reasons (Anon 1931; Bearce 1932). I argue that path dependency and the psychological friction involved in the introduction of new systems have likely been major factors in putting a stop to these proposals. Changes that bring little perceived gain are also unattractive.

Beyond the evidence pointing to the inaccuracy of placing the Holocene start date at CE + 10,000 years, as the current definition deviates by at least 300 years (Walker et al. 2009), the addition of a number one to the current Gregorian date seems to add next to nothing of perceived value to society as a whole. Other proposals such as the Invariable Calendar, the World Season Calendar, and the popular World Calendar were more attentive to limiting the changes to allow for ease of implementation. Unfortunately, these proposals may have been ahead of their time given the relatively strong religious character of societies at the time of their conception. Below follows a proposal which tries to alleviate the worst perceived

problems of the Gregorian Calendar while also not doing away with too much so as to make a potential implementation smoother for all involved parties. It thus constitutes a tangible gain with less mental friction.

I have opted to designate the proposal as the *Tellus Calendar*, though I am sure more suitably bureaucratic names may come to take its place. The Tellus Calendar calendar takes inspiration from the French Republican Calendar (FRC) (see Eviatar Zerubavel 1977). It carries on the twelve-month, but maintains the corresponding Gregorian, or locally developed names, for ease of transition, despite the seventh, eighth, ninth, and tenth months (September, October, November, December), being the ninth, tenth, eleventh, and twelfth as a result of the hubris of the Caesars. More radically, it is the structure of weeks and month which is directly imported from the FRC. There are twelve months, consisting of thirty days each, distributed into three ten-day weeks per month. In this way, months enter the realm of the evenly distributed.

Ten-day weeks may seem daunting given the ritualistic nature of contemporary two-day weekends. Yet, nothing prevents the establishment of three days of rest per ten-day week in whatever preferred configuration. Technically, the ratio would be more beneficial to rest than the current 2/7 system, which totals only 28% off days as compared to 30% in the 3/10. This one change might prove dissatisfactory to religious authorities bent on the seven-day week. But the aim of the very calendar is in opposition to non-secular goals. Let them adapt their dogma to our reason rather than our reason to their dogma.

As regards names, this is left open, allowing each language to develop their own, with French having the advantage of being able to adapt the FRC names, and Portuguese for instance being able to partially take names from their existing Gregorian weekday names. If inspiration is to be taken from the FRC or from Portuguese, the English names could be: Primday, Duoday, Triday, Quarday, Pentaday, Hexaday, Sepday, Ocday, Nonday, Dacaday. These are the names used in the example calendar found in the appendix but can be regarded as example placeholders. Though addition of names to the existing names is also possible, a total conversion in this sense may help to reduce the confusion and inaccurate conversions between the new system and the Gregorian. Further, the use of pre-existing weekday names from shorter week systems might produce an irrational sensation of having made the working weeks longer.

The three-week months would potentially come to be the most beneficial parts of the reform. Such a system would provide even weeks and even months. It would be a perennial system; the first, eleventh, and twenty-first days of any month would always fall on a Primday, and so on and so forth. This would significantly improve scheduling, both financially, academically, and privately.

The astute but unfamiliar reader of the FRC will have noticed that five and a quarter of a day are missing, as twelve times thirty equals three hundred and sixty. Our ideas, as fine as they may be, cannot change our trajectory around the sun on their own. The leap year stands as a testament to the limits of neatness. Instead, it is here perhaps that the most controversial solution thus far comes into play: a five plus one week separated from the remaining months. That is to say a five-day standalone (half) week onto which leap days would be added. This may seem contradictory to the rationalisation purposes of the proposal. Yet, the year is unfortunately not 360 days long, and these days have to be accounted for. In the

Gregorian Calendar, and indeed most of the world, the end of the year (December to January) is marked by a number of celebrations, particularly during the last week of December. The FRC in its revolutionary zeal proposed a shift of the new year to coincide with the proclamation of the revolutionary republic, which also happened to fall on the autumn equinox in Paris. It was preceded by a unique extra five-day celebratory half week, with an additional day added on leap years. Despite its charm, the calculation and recalibration of the new year around a meteorological event in a specific location adds a layer of unnecessary complexity. Instead, I suggest that the new year is to be kept to the transitional period between December and January, but with a five day long (or six on leap years) special week added right after December. It would thus coincide with the common practices of the globalised world, add a flair to the end of the year, and it would single out a common global period for festivities and reflections.

New Year's Eve would fall on the fifth or sixth day of the special week, and the week would reset when entering the new year. Whether this week would have the accompanying numerical day names, special individual names, or both is open to debate. I suggest both, with the week potentially carrying a name exalting its uniqueness such as 'Saturnalia', 'Half Week', 'Special Week', 'Celebratory Week', 'Rest Week', or something of a similar nature. Seasons in this system would still be evenly distributed for the most part. Equinoxes would shift slightly more during the year than in the Gregorian system, but nothing major given that they already do. A perfectly season-based calendar, though relevant in an agricultural society, carries little significance in the modern world, and these small fluctuations would nevertheless be unnoticeable.

Finally, there is the question of the numerical year date. What date is the equivalent of the Gregorian 2020 AD/CE in this new system? Of course, it is adaptable, and those who wish to make 2020 into 228, 12020, or 4718 are free to do so. But despite the secularising and rationalising drive behind the idea, it seems, for the sake of ease, better to equate the year to the Gregorian year. January 1st would always equal January 1st in any conversion, and the leap year calculations would not affect conversions significantly as they would be preserved and equal in all years. Leap days would thus be added to the end of the celebratory week every year that is evenly divisible by four but not evenly divisible by one hundred, except if evenly divisible by four hundred. This would not deal with the non-arithmetic transition between BCE and CE but the advantage, given by how quickly people may be able to adapt to the new system, might outweigh this cost. This is part of the compromises that must be made in order to achieve a successful transition. The more abrupt the change, the more difficult it becomes to accept it.

The proposal may not be perfectly rational, secular, or revolutionary, but it balances out the pros and cons of our age so as to provide a calendar which has lower barriers to adoption by the population. True, a three-week month and a ten-day week are a radical proposal, but instead of being packaged with a new start date, new names, new holidays, and weighed down by French political history, it is now more readily digestible. In essence it is the FRC but with a new and recognisable coat of paint. Hopefully, if calendar reform once again becomes fashionable, the Tellus Calendar will be among the more enticing proposals.

References

- Anon. 1931. 'Calendar Reform'. *Science* 73(1883):118–118. doi: 10.1126/science.73.1883.118.a.
- Bearce, Henry W. 1932. 'The Proposed Revision of the Gregorian Calendar'. *The Scientific Monthly* 35(6):500–510.
- El-Bayeh, Claude. 2020. 'A Novel Optimization Algorithm to Create Perennial Calendar System Based on Gregorian and International Fixed Calendars'.
- Emiliani, Cesare. 1993. 'Calendar Reform'. *Nature* 366(6457):716–716. doi: 10.1038/366716b0.
- Emiliani, Cesare. 1994. 'Calendar Reform for the Year 2000'. *Eos, Transactions American Geophysical Union* 75(19):218. doi: 10.1029/94EO00895.
- Eviatar Zerubavel. 1977. 'The French Republican Calendar: A Case Study in the Sociology of Time'. *American Sociological Review* 42(6):868–77.
- Hanke, Steve. 2018. 'It's Time to Change the Calendar, Once and For All'. *Forbes*, December 20.
- Rayasam, Renuka. 2015. 'The Case for an Entirely New Calendar'. *BBC*, December 30, Online.
- Walker, Mike, Sigfus Johnsen, Sune Olander Rasmussen, Trevor Popp, Jørgen-Peder Steffensen, Phil Gibbard, Wim Hoek, John Lowe, John Andrews, Svante Björck, Les C. Cwynar, Konrad Huguen, Peter Kershaw, Bernd Kromer, Thomas Litt, David J. Lowe, Takeshi Nakagawa, Rewi Newnham, and Jakob Schwander. 2009. 'Formal Definition and Dating of the GSSP (Global Stratotype Section and Point) for the Base of the Holocene Using the Greenland NGRIP Ice Core, and Selected Auxiliary Records'. *Journal of Quaternary Science* 24(1):3–17. doi: 10.1002/jqs.1227.

Appendix

Example Proposal for a Revised Calendar: The Tellus Calendar

<i>Month 1 (January)</i>									
Primday	Duoday	Triday	Quarday	Pentaday	Hexaday	Sepday	Ocday	Nonday	Dacaday
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

<i>Month 2 (February)</i>									
Primday	Duoday	Triday	Quarday	Pentaday	Hexaday	Sepday	Ocday	Nonday	Dacaday
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

<i>Month 3 (March)</i>									
Primday	Duoday	Triday	Quarday	Pentaday	Hexaday	Sepday	Ocday	Nonday	Dacaday
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

<i>Month 4 (April)</i>									
Primday	Duoday	Triday	Quarday	Pentaday	Hexaday	Sepday	Ocday	Nonday	Dacaday
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

<i>Month 5 (May)</i>									
Primday	Duoday	Triday	Quarday	Pentaday	Hexaday	Sepday	Ocday	Nonday	Dacaday
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

<i>Month 6 (June)</i>									
Primday	Duoday	Triday	Quarday	Pentaday	Hexaday	Sepday	Ocday	Nonday	Dacaday
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

<i>Month 7 (July)</i>									
Primday	Duoday	Triday	Quarday	Pentaday	Hexaday	Sepday	Ocday	Nonday	Dacaday
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

<i>Month 8 (August)</i>									
Primday	Duoday	Triday	Quarday	Pentaday	Hexaday	Sepday	Ocday	Nonday	Dacaday
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

<i>Month 9 (September)</i>									
Primday	Duoday	Triday	Quarday	Pentaday	Hexaday	Sepday	Ocday	Nonday	Dacaday
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

<i>Month 10 (October)</i>									
Primday	Duoday	Triday	Quarday	Pentaday	Hexaday	Sepday	Ocday	Nonday	Dacaday
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

<i>Month 11 (November)</i>									
Primday	Duoday	Triday	Quarday	Pentaday	Hexaday	Sepday	Ocday	Nonday	Dacaday
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

<i>Month 12 (December)</i>									
Primday	Duoday	Triday	Quarday	Pentaday	Hexaday	Sepday	Ocday	Nonday	Dacaday
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

<i>Week of Saturnalia</i>									
1	2	3	4	5	6 (*on leap years)				