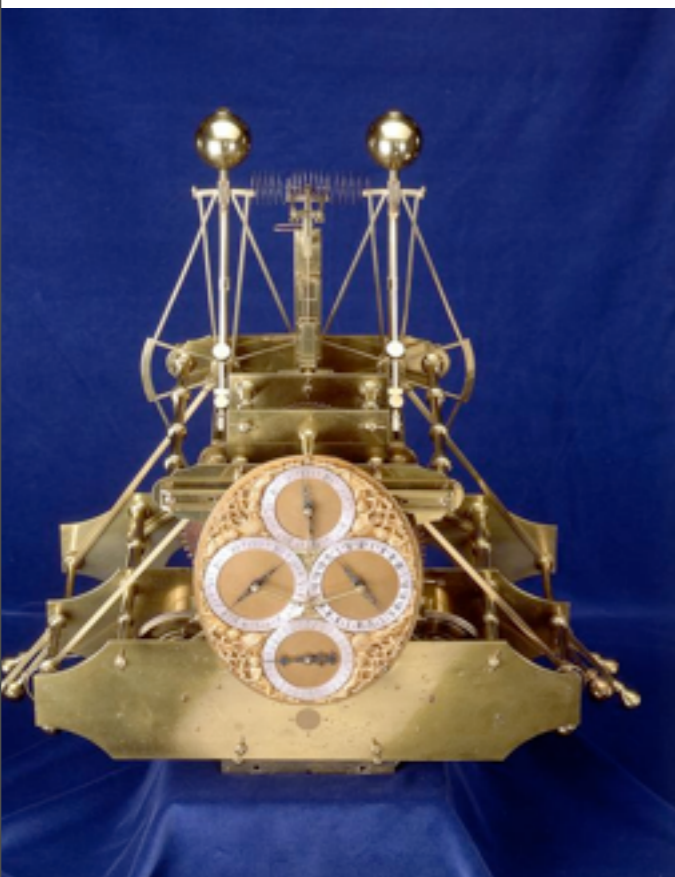


unnoticed revolutions?



time-keeping, book-keeping & control?

History of information
Thursday
Feb 28, 2013



1827 Account		£ R S		1827 Carried up		£ R S	
Jan 1.	Billy Garner	-	1 . .	21.	M ^r Butler sub ^d to the	484	1 11
4	Children's books		10 6.	School of industry by the	1	. .	
5	Placed in the 3 ^d Gate	300 .		& female friendly society	1	. .	
-	to Thackeray's account	69 19		(copy for Society already paid)			
-	Lewis for a sheet	1 1.		24	Pauli (Furnish)	15 .	
8.	Prizes for Charities	4 1 6		Brown (washed 2 up)	2 12 .		
	Hodgkinson's bill	22 16 .		Refil & Prigg (lab)	2 10 .		
	Stubbs d ^r	7 10 6		26	trawl & janes	2 17 6 .	
11	L. M.	5 .		30	Carpenter's bill	28 15 4	
12	D ^r to Masterman on			D ^r black silk	4 18 10 .		
	W ^r Butler's acct. of 1826	42 . .		Rendelph & Fitzgibbon	3 . .		
16	Haughler Stationer	7 9 8		Feb 15	M ^r Haraden (arrived)	25 6 .	
	Horse & James	16 6 .		M ^r Weyatt's bill	4 - 6 .		
	D ^r 2 up for L ^r R. Howard	3 17 .		Drawings (Nichols) (Cloyne)	2 - -		
	Uery	~ 12 .		M ^r Day's bill	10 2 .		
	Arnould (T ^r Viner)	3 6 .		9	Foreigners friend society	5 . .	
				paid at 2 ^d 52 to Broad St			
				Cloyne for drawings	2 10 .		
				J. Nicholson's book	11 1 10 .		
				23	Redmayne (to Towardly) paid	10 1 6 .	
				28	Balance of year acc ^t		
				from Dec 1826. Taylor, T. & Co's			
				Hollingsworth, Teller, & Co	22 16 6 .		
				Charities &c. including 20			
				advanced to year on Dec 26	627 8 11		



dazed

Thor's-day Originally cognate with or formed similarly to Old Frisian *thunresdei* , Middle Dutch *donresdach* , *donderdach* (Dutch *donderdag*), Old High German *donarestag* (Middle High German *donerstac* , *donrestac* , German *Donnerstag*) < the genitive of the Germanic base of [thunder n.](#) (used as the name of a god)

The Latin days of the week in imperial Rome were named after the planets, which in turn were named after gods (see discussion at [week n.](#)). In most cases the Germanic names have substituted for the Roman god's name that of a comparable one from the Germanic pantheon. The sky-god Tiw was originally also a god of war, like the Roman Mars.

jeudi

quinta-feira

donnerstag

गुरुवार

木曜日

星期四

الخميس

uncertain

purification Anglo-Norman *feverer* , *feverrer* , *feveryer* , *feverzere* , *feverell* , *februer* , *februarare* , *februarie* , etc., Anglo-Norman and Old French *fevrier* , *feverier* , Old French (northern) *fevriel* (1119; Middle French *fevrier* , French *février*) and its etymon classical Latin *Februārius* , in post-classical Latin also *Febrarius* (frequent in inscriptions), use as noun (short for *mēnsis Februārius* month of February) of masculine of *Februārius* of February < *februa* (plural; also *februm* , *februum* , singular) means of purification, expiatory offerings, of uncertain origin

28 February

février [9 ventôse]

feverio

二月

Phalugra 9 [Indian]

Rabi`athani 18 [Islam]

Adar 5 [Jewish]

Esfand 9 [Persian]

where are we?

4711 - Chinese

New Year: February 10: guǐ-sì 癸巳 (water snake)

1391 - Persian

New Year: Wednesday March 20 (04:03:13 am)

5773 - Jewish

New Year: September 5-6

1434 - Islamic

New Year: November 24

??? - Mayan

"The clock, not the steam engine, is the key machine of the modern industrial age ... even today no other machine is ubiquitous."

```
java.lang.Object  
    java.util.Calendar  
        java.util.GregorianCalendar
```

Lewis Mumford, *Technics & Civilization*, 1934

```
public class GregorianCalendar  
    extends Calendar
```

all over the place

year

2015
1980
1950
1900



Questions

Tags

Users

Badges

Unanswered

Ask Question

Why does `GregorianCalendar.getInstance` contain a `calsys` and `cdate` of type `JulianCalendar`

0
500
3000
5000
30,000
50,000

week



1 2 3 4 5 6 7 8 10 11 12 13 14 15

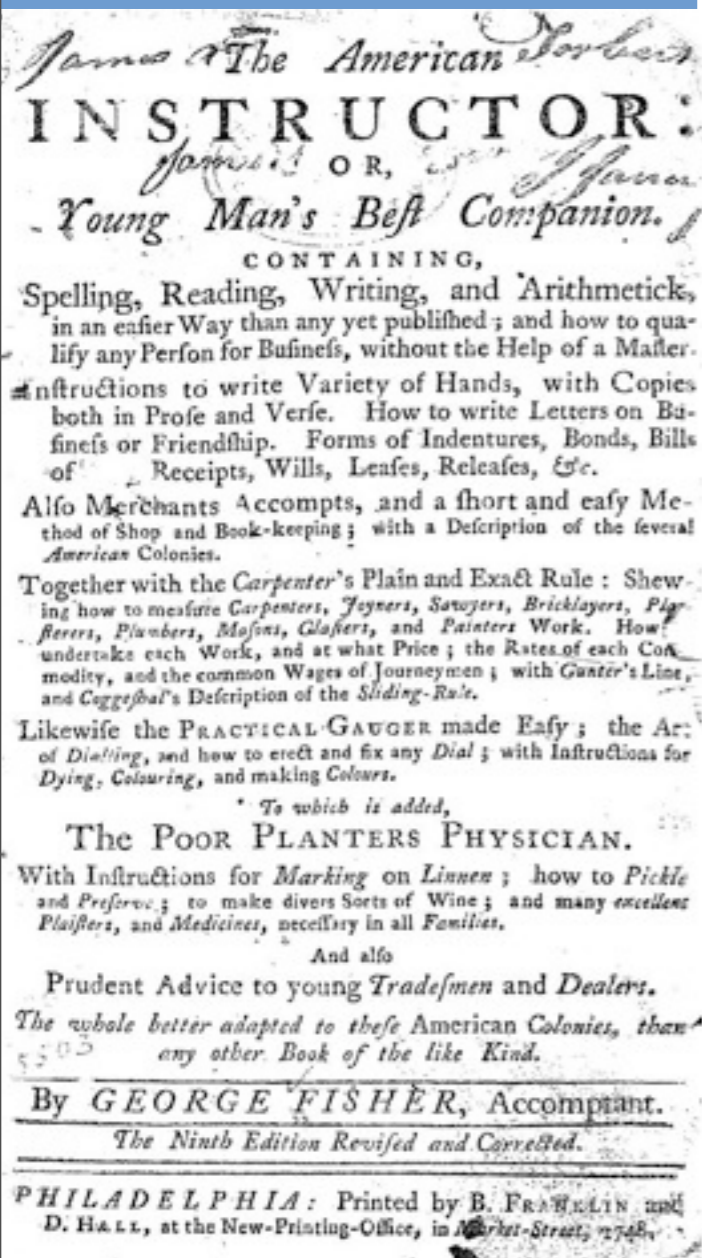
week

radical changes

"Then, between ... 1275 and 1325 ... Europe's first mechanical **clock** and canon ... **marine charts**, perspective painting ... and **double-entry** bookkeeping ... decades unmatched in their radical changes in perception until the era of Einstein ... **In the past seven centuries bookkeeping has done more to change the perceptions of more bright minds than any single innovation in philosophy or science.**"

Alfred Crosby, *The Measure of Reality*, 1997

changing perceptions of bright minds



*Advice to a young Tradesman, written by an old One.
To my Friend A. B.*

As you have desired it of me, I write the following Hints, which have been of Service to me, and may, if observed, be so to you.

REMEMBER that TIME is Money. He that can earn Ten Shillings a Day by his Labour, and goes abroad, or sits idle one Half of that Day, tho' he spends but Six-pence during his Diversion or Idleness, ought not to reckon that the only Expence; he has really spent, or rather thrown away Five Shillings besides.

short-term interests of bright minds

Midterm exam or **paper** (25% of course grade)

The midterm will be an 80 minute, in-class exam and include three essay questions, two chosen from a list of questions provided in advance. There will also be short-answer sections asking you to identify quotations, people, dates, images, and other aspects of the course.

We will give out a study guide. Exam questions will be based on material covered in readings, slides, and class discussion. Class slides will normally be posted shortly before each class.

Students can ask to submit a paper instead of a midterm exam. This paper will be a 2000 word essay in response to one of a list of essay questions. **We will provide a list of topics on March 1 and, if you wish to write an essay, you must let us know in writing which one you propose to write by March 7. We will let you know if you may proceed by March 10.** The paper is due at 9 a.m. on the morning of the midterm (March 21). If you do not submit by that time, you should take the midterm exam, which starts at 9:30.

If you want to write a paper, send a proposal to Paul & Geoff (with a copy to Bryan) by 5 pm on March 7.

If you want to write a paper, send a proposal to Paul & Geoff (with a copy to Bryan) by 5 pm on March 7.

<http://blogs.ischool.berkeley.edu/i103s13/midterm/midterm-essay-topics/>

(a) We have discussed several cases of information ‘revolution’ and methods for assessing them.

EITHER choose an instance of technological or informational change that has been proclaimed revolutionary and show whether the claim is justified or not

OR choose an instance that has not been claimed revolutionary and argue for its importance in contrast to the standard claims, and suggest why it has been overlooked.

In either case, use the examples that we have discussed to support your argument

.....

(b) ”Many, if not most, of the cultural phenomena of the modern world derive from [the 18th century] — the periodical, the newspaper, the novel, the journalist, the critic, the public library, the concert, the public museum. Perhaps most important of all, it was then that ‘public opinion’ came to be recognized as the ultimate arbiter in matters of taste and politics.”—Tim Blanning, *The Culture of Power*.

Choose **ONE** example, either from Blanning’s list or from other seventeenth- or eighteenth-century developments mentioned in the class, and argue how the cultural phenomena came about. Consider key technologies, people, places and social institutions that might have been critical to the cultural phenomena. Finally, argue about the significance of the cultural phenomena you have chosen to the history of information: Does the story that you have outlined support a technologically deterministic history of information?

.....

(c) Assume that Phaedrus came to Socrates not with a scroll but a printed book. Write the ensuing dialog as Socrates contemplates the effect of the printing press on society.

back to/in time

"It is commonplace that the years between 1300 and 1650 saw within the intellectual culture of Western Europe important changes in the apprehension of time."

E.P. Thompson

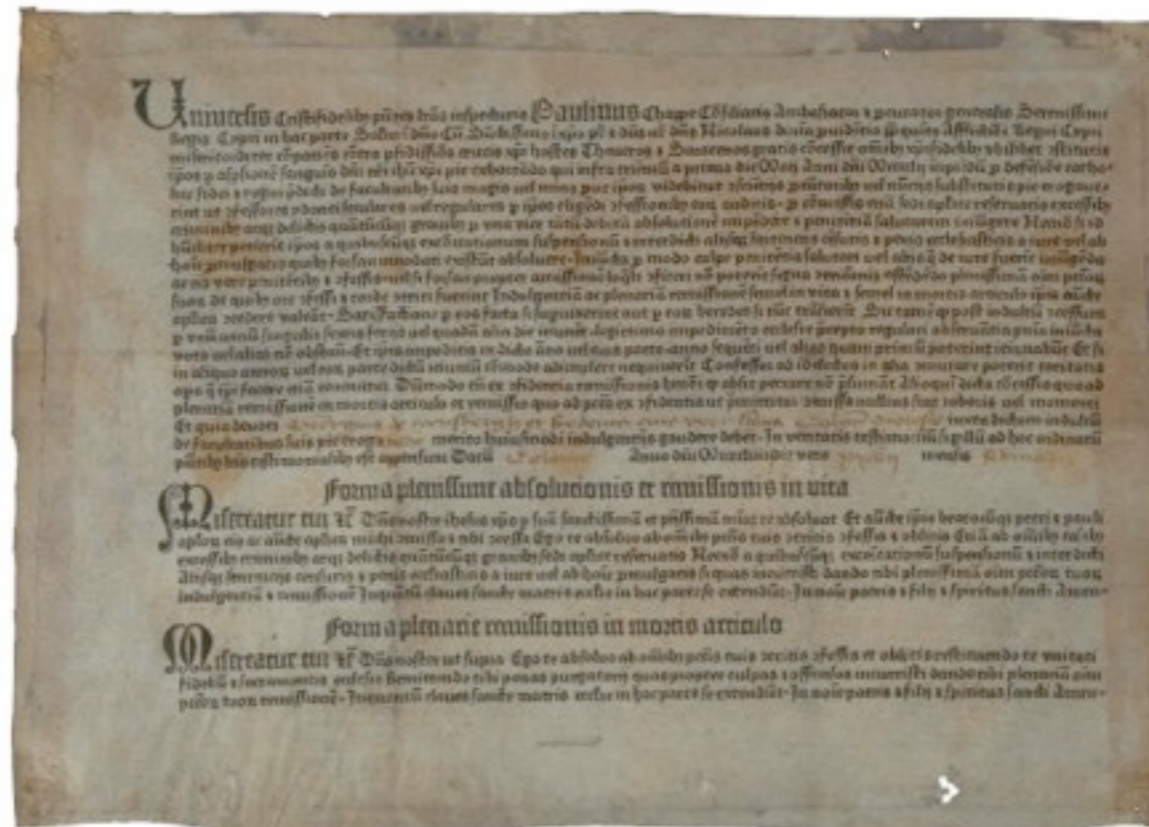
time and money

debts to God

1309: An indulgence to pardon a year's worth of sin costs one penny



Pope Clement V
1260–1314



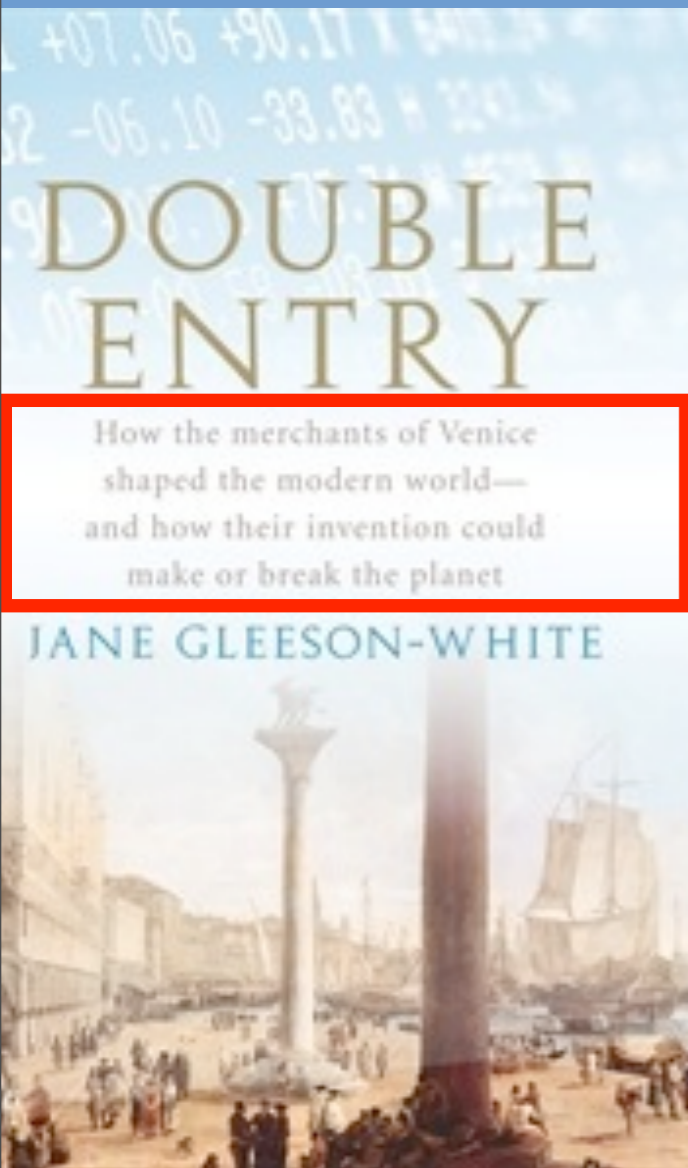
real determinism?

Max Weber (1864-1920)

'Protestant ethic'
rational capitalist accounting
'desacralization' (cp Darnton)

Werner Sombart (1863-1941)

"abstraction of profit [leads to] economic
calculation ... systemic organization ...
depersonalization."





" 'Merchant's time' which Jacques Le Goff ... opposed to the time of the medieval church." --Thompson

accounting shift

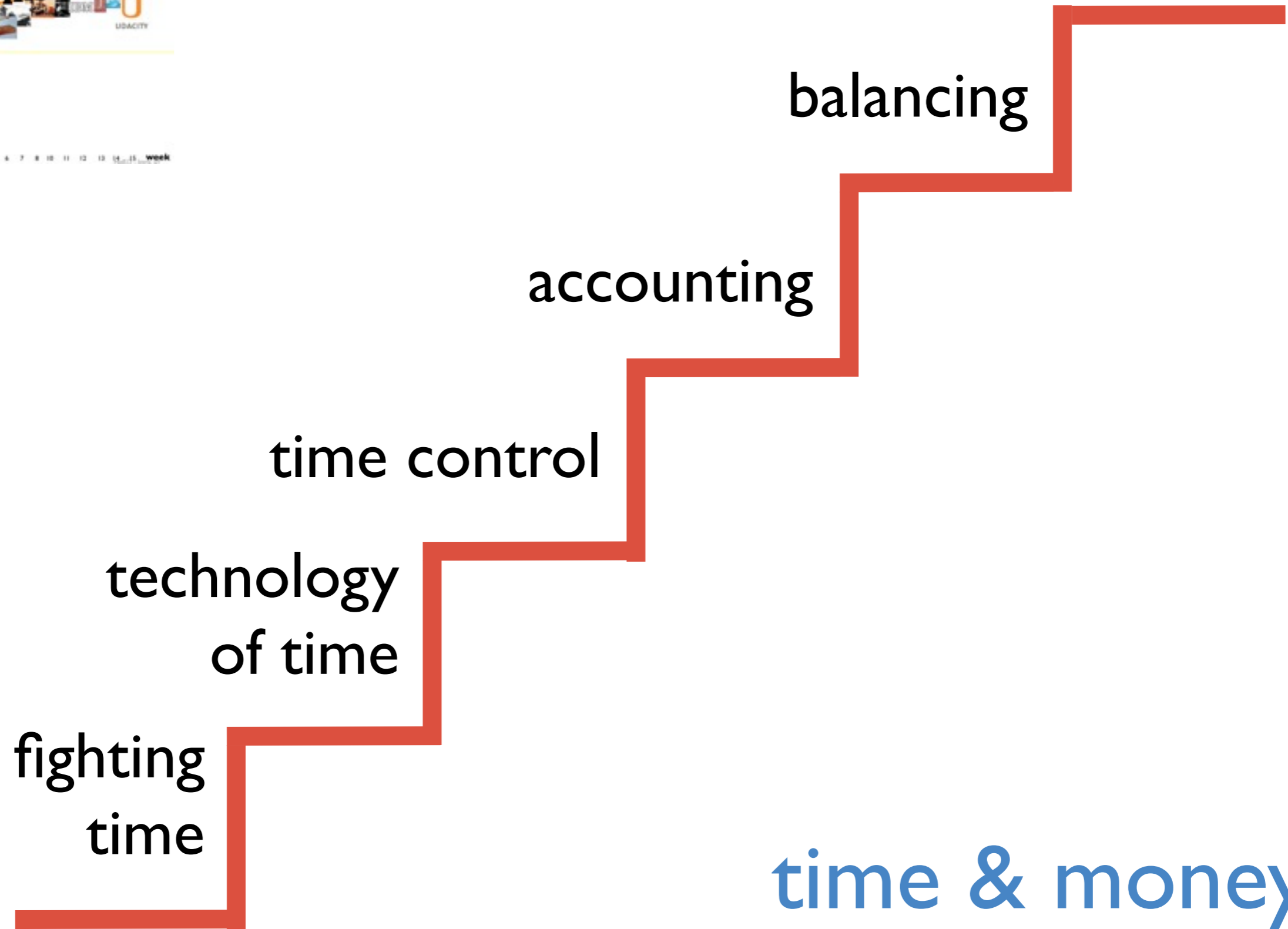
"ceci tuera cela"

"The Palace of the Bourse [stock exchange] ... The architecture of a building should be adapted to its function. As for the function ... it fills that to perfection: it is a stock exchange in France just as it would have been a temple in Greece ... on days of high religious solemnity, the theory of stockbrokers and jobbers can be majestically expounded"

Victor Hugo, *Notre Dame de Paris*, 1831



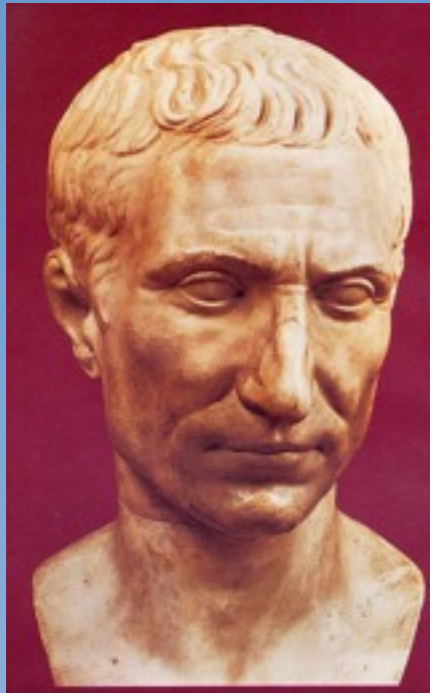
overview



time & money

8th century bce: 10 month calendar
713 bce: 2 months added
153 bce: beginning of the year moved
from March to January

Roman rules



Julius Caesar (100 - 44 bce)

Julian Calendar

troublesome equinox

46 bce: 445 days

45 bce: 365



Augustus (63 bce - 14 ce)

8 bce: a further course correction

Augustan Calendar



Luigi Lilio
d 1576



Gregory XII
1502-1585

further uncertainties

the year dot:

Dionysius Exiguus (c 470-544 ce)

day one

January 1 (Julian Calendar)

March 25 (Council of Tours, 567)

the equal hour

14th century

the struggle for Easter

1582: Gregorian Calendar (*leap years, centurial years*)

the big leap

Thursday October 4 to Friday October 15

old time religion

Orthodox & Protestant resistance

"latent Popish interest"

--John Wallis, FRS,

Savilian Professor of Geometry, Oxford

popular superstition

The Landlord calls for Rent before 'tis due,
King's Tax, and Windows, Poor, and Parson too;
With Numbers more, our Grandsires never knew.
Domestick Servants all will have their Pay,
And force their Masters e're the Quarter Day.



John Wallis
1616-1703

anglo-american resistance

1752

Wednesday September 2

Thursday September 14

complaints from Montaigne to Pynchon

"give us back our eleven days"



28 Feb: Unnoticed Revolutions? Time and Money

- (cur | prev) 10:16, 4 March 2012 Cycomachead (talk | contribs) m . . (45,314 bytes) (0) . . *(Changed the Statue of Anne date to 1710 as that was the year which is mentioned in the document and the year when in was published in England.)* (undo)

residuals

residual effects

tax day: April 6 / April 15

... and confusions

History of copyright law

From Wikipedia, the free encyclopedia

The history of copyright law starts with early privileges and monopolies granted to printers of books. The British Statute of Anne 1709, full title "An Act for the Encouragement of Learning, by vesting the Copies of Printed Books in the Authors or purchasers of such Copies, during the Times therein mentioned", was the first copyright statute. Initially copyright law only applied to the copying of books. Over time other uses such as translations and derivative works were made subject to copyright and copyright now covers a wide range of works, including maps, performances, paintings, photographs, sound recordings, motion pictures and computer programs.

The Statute of Anne, 1710 (1/6)

(transcription below image)

This is the first copyright act in the world, the British Statute of Anne, from 1710. This facsimile is taken from British Library, 8 Anne c. 19. Several monographs on copyright date this text to 1709. However, 1710 is the correct date, see John Feather, *The Book Trade in Politics: The Making of the Copyright Act of 1710*, "Publishing History", 19(8), 1980, p. 39 (note 3). Transcription from fraktur is available below the image. Words in roman type in the original are formatted here as *italics*.

Coming up
ip



decimalization

French revolution

year 1 again (1793)

10 days a week

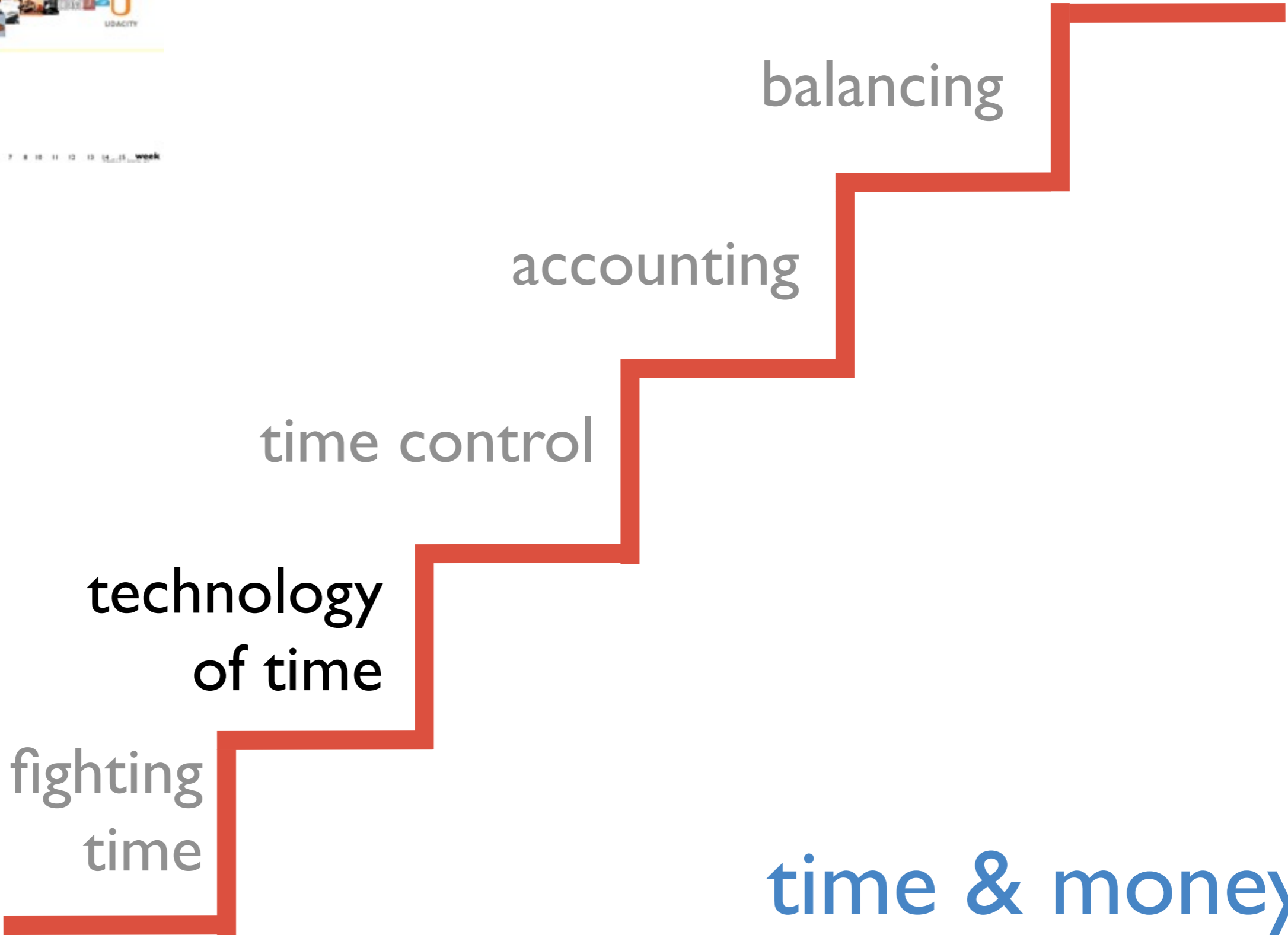
10 months a year

New Year September

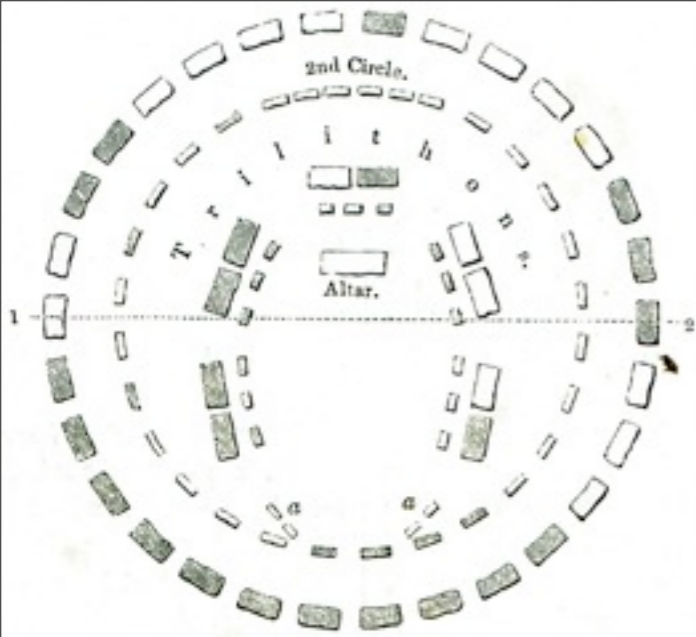
an urban revolution?

Vendémiaire, Brumaire, Frimiaire, Nivôse, Pluviôse, Ventose,
Germinal, Floréal, Prairial, Messidor, Thermidor, Fructidor

overview



time & money



the long then

"Most of what has been written about Stonehenge is nonsense"

R.J.C. Atkinson

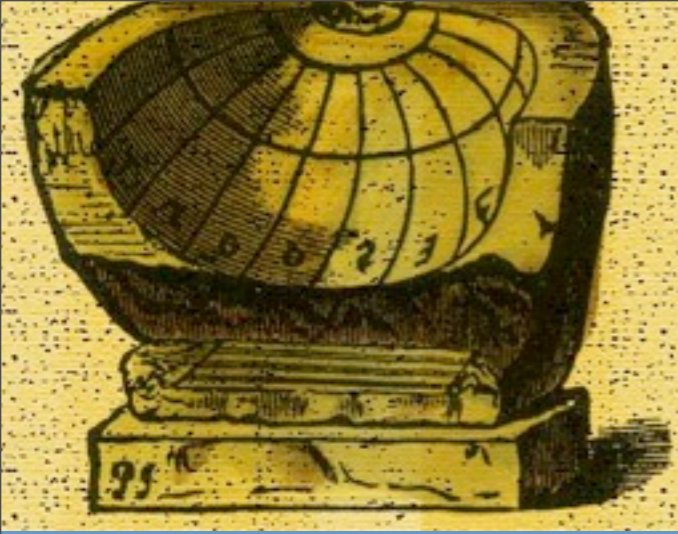
c. 3100 bce



Whan that **Aprill** with his shoures soote
 The droghte of **March** hath **Perced** to the roote,
 And bathed every **veyne** in swich **licour**
 Of which **vertu engendred** is the **fleur**;
 Whan Zephirus eek with his sweete breeth
Inspired hath in every holt and heeth
 The **tendre** croppes, and the yonge sonne
 Hath in the ram his halve **cours** yronne,
 And smale foweles maken **melodye**,
 That slepen al the nyght with open ye
 (so priketh hem **nature** in hir **corages**);
 Thanne longen folk to goon on **pilgrimages**...



antikythera c 200 bce
 12-Hofl | 3-Time&Money 22



clock time

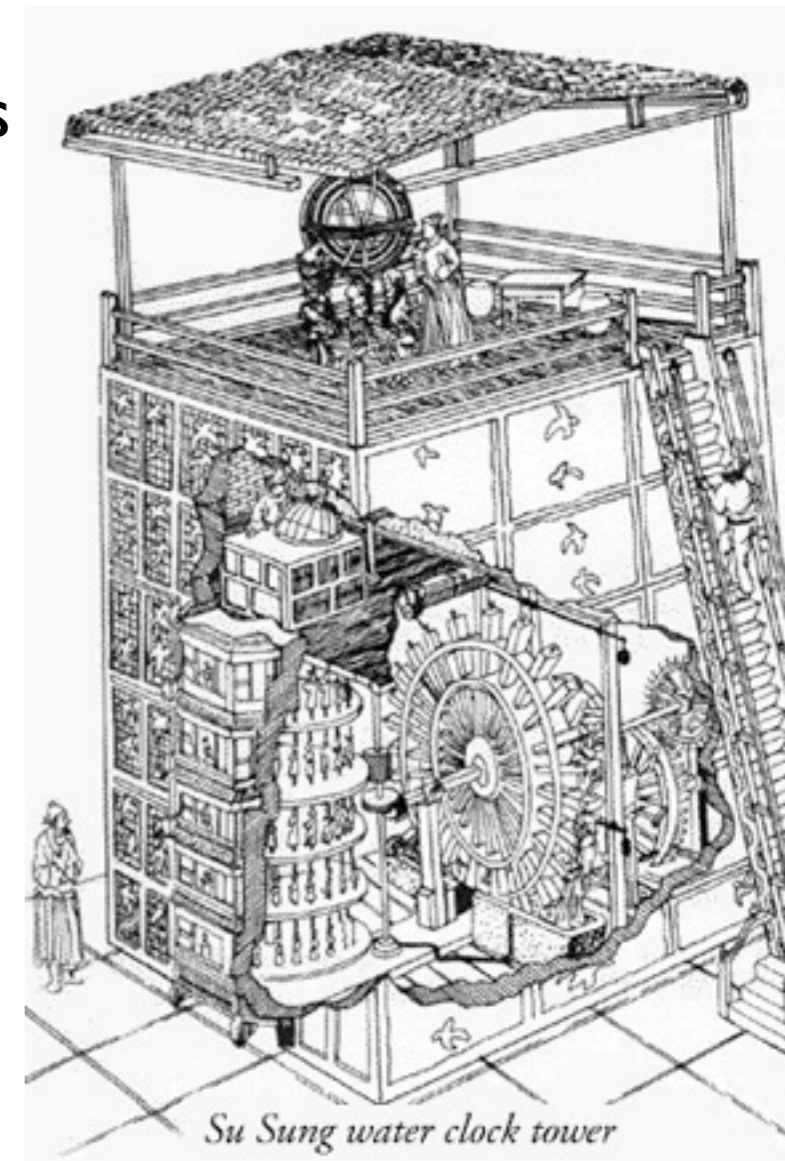
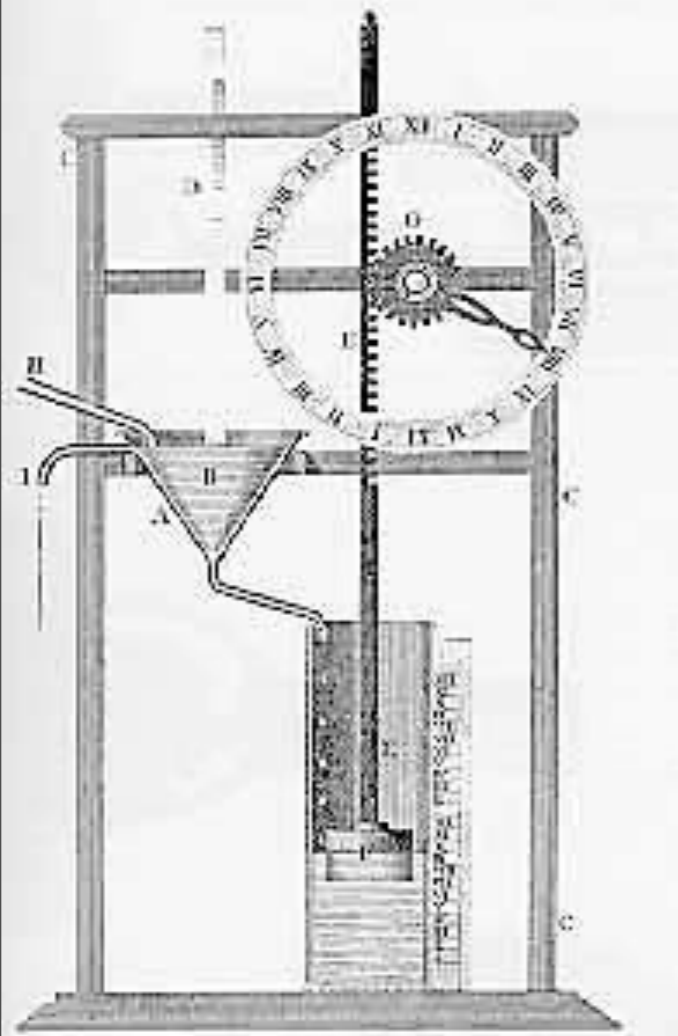


3500 bce: sundials

1400 bce: Egyptian water clocks

700 ce: hourglasses

1086: Su Sung's water tower



"Wel sikerer was his crowyng in his logge
Than is a klokke, or an abbey orlogge"

higher tech

1300: mechanical clocks
Richard of Wallingford

1656: Huygens pendulum clock

1660: Hooke & the spring watch



Richard of Wallingford
1292-1336

looking ahead

automata

86

The Antiquity
modum dentata, quæ unâ motione coacta, versando faciunt effectus, varietatesque motionum: in quibus moventur Sigilla, vertuntur Metæ, calculi aut Tona projiciuntur,

Chap. VI. | Chap. VI. of Clock-work;

87

Clocks, and some other **Automata**, might have their beginning there; or that Clock-work (which had long been buried in oblivion) might be revived there. But

Derham, *The Artificial Clock Maker*, 1696

computus

84 Scaligeri Poetices in 2 Vol. interfol.

85 **Cluverii computus chronologicus,** interfol.

feedback mechanisms

"feedback control dates at least from the waterclock of Ktesibios of Alexandria [3dC BC] no new feedback system

[until the] thermostatic furnace."

--Beniger, *Control through Communication*

12-Hofl 13-Time&Money 25

Mechanick Dyalling:

TEACHING

Any Man, though of an Ordinary Capacity and unlearned in the Mathematicks, to draw a True

SUN-DIAL

On any

Given Plane,

However scituated: Only with the help of a straight *RULER* and a pair of *COMPASSES*; And without any Arithmetical Calculation.

By Joseph Moxon, *Hydrographer to the Kings most Excellent Majesty.*

LONDON.

Printed for Joseph Moxon on Ludgate-hill, at the Sign of Atlas. MDC LXVIII

computus

1668: Joseph Moxon, *Mechanick Dyalling*

1748: George Fisher, *American Instructor*

"the Art of Diallying, and how to erect and fix any *Dial*

244 *The Young Man's Best Companion.*

But to proceed to Diallying, the following Figure represents an Horizontal Dial, described for the Latitude of New-York, at 41 deg. 44m. North.

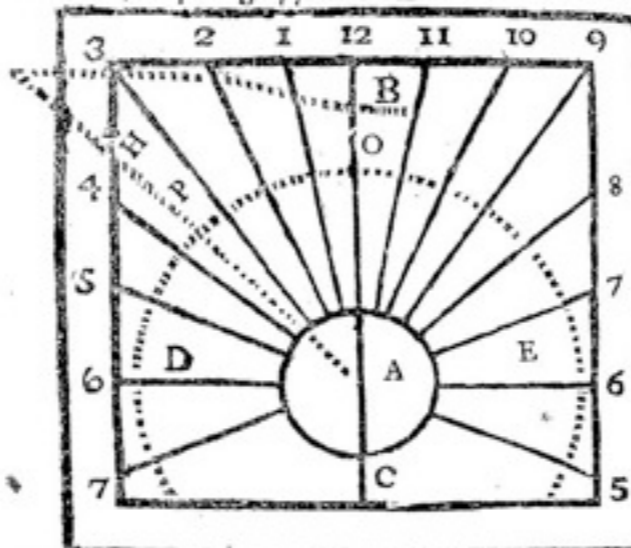


Fig. A. Draw the Meridian or 12 o'Clock Line *BAC* and cross the same with the Line *DE*, at right Angles in the Point *A*, which must be the Center of your Dial, and the Line *DE*, is the 6 o'Clock Line; then take with your Compasses 60 Degrees from a Line of Chords, and with that Extent, setting one Foot in the Center at *A*, with the other describe the Circle *DOE*, which done, take from the same Line of Chords, all the Hour Arches in the following Table; and placing one Foot of your Compasses in *O*, (where the Circle crosses the Meridian) with the other set off the Hour Arches both Ways upon the Circle *DOE*.
Latitude 41 Degrees 44m. North.

Hours.		Hour.
Fere-noon.	After-noon.	Arches D. M.
11	1	9 46
10	2	20 22
9	3	32 44
8	4	48 4
7	5	67 22



from logs to longitude

time, space, and naval supremacy

the limits of the log
starvation, piracy, wrecks

1707: Sir Cloudesley Shovell's fleet

1,315 sailors; one survivor

1714: Longitude Act

£20,000 - to fix longitude to half a degree





various contenders

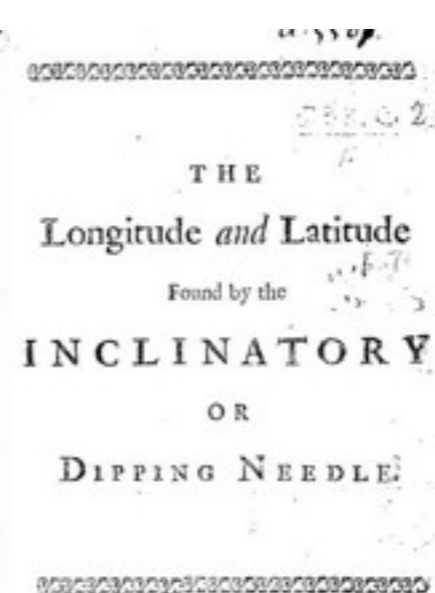
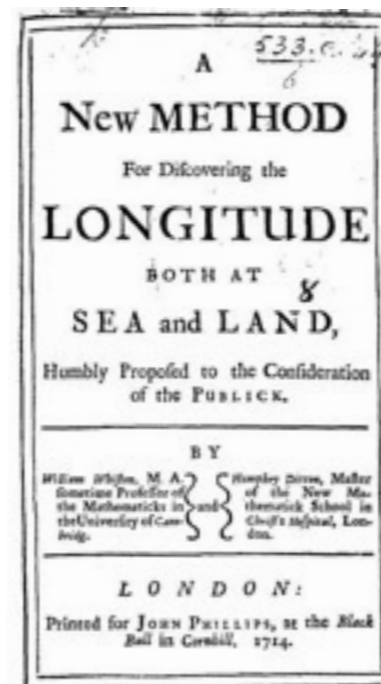
time, space, and whelping dogs

Galileo, Newton, Huygens, Halley and the heavens

Wren's observatory

vs

nutters galore





John Harrison
1693-1776

RS plays defense



H1

Harrison vs Men of Science

H1 - Lisbon Trial, 1736

awarded prize, 1773

AN
A C C O U N T
 OF THE
PROCEEDINGS,
 IN ORDER TO THE
D I S C O V E R Y
 OF THE
L O N G I T U D E :
 IN A
L E T T E R
 TO THE
 RIGHT HONOURABLE *****,
 MEMBER OF PARLIAMENT.
 L O N D O N :
 Printed by T. and J. W. PASHAM, in Black-Friars, and Sold by
 the BOOKSELLERS, in London and Westminster. M.DCC.LXIII.

A
NARRATIVE
 OF THE
PROCEEDINGS
 RELATIVE TO
 The DISCOVERY of
 THE
Longitude at Sea ;
 BY
 Mr. *JOHN HARRISON's*
 TIME-KEEPER,
 Subsequent to those published in the Year
 1763.
 L O N D O N :
 Printed for the AUTHOR, and Sold by
 Mr. SANDBY, in Fleet-Street.
 MDCCLXV.

THE
PRINCIPLES
 OF
 MR. HARRISON'S TIME-KEEPER,
 WITH
 PLATES OF THE SAME.
 PUBLISHED BY ORDER OF
 THE COMMISSIONERS OF LONGITUDE
 L O N D O N :
 PRINTED BY W. RICHARDSON AND S. CLARKE
 AND SOLD BY
 JOHN NODDIE, AND MESS. MOUNT AND PAGE.
 M DCC LXVII.

REMARKS
 ON A
 P A M P H L E T
 Lately published by the
 Rev. Mr. *MASKELYNE,*
 Under the Authority of the
 BOARD OF LONGITUDE.
 By JOHN HARRISON.
 L O N D O N :
 Printed for W. SANDBY in Fleet-Street.
 MDCCCLXVII.
 (PRICE SIXPENCE.)

A
DESCRIPTION
 CONCERNING
SUCH MECHANISM
 AS WILL AFFORD A NICER, OR TRUER
MENSURATION OF TIME;
 TOGETHER WITH
SOME ACCOUNT
 OF THE
ATTEMPTS for the DISCOVERY
 OF THE
LONGITUDE BY THE MOON:
 AS ALSO
AN ACCOUNT
 OF THE
DISCOVERY
 OF THE
SCALE OF MUSICK.
 By JOHN HARRISON,
 INVENTOR of the TIME-KEEPER for the LONGITUDE
 at SEA.
 L O N D O N :
 Printed for the AUTHOR, and sold by T. JONES,
 No. 138, FETTER-LANE.
 M.DCC.LXV.



going global

c1850: telegraph time

1852: Greenwich mean time

1883: US standard time

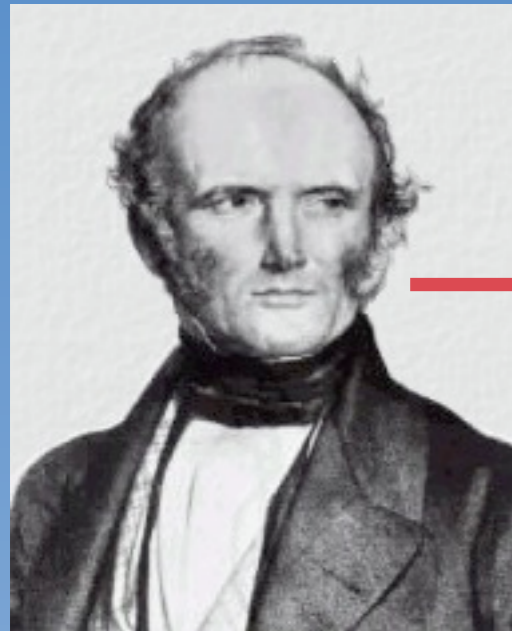
1884: Meridian Conference, DC

1911: France: Cassini Meridian

1966: Uniform Time Act



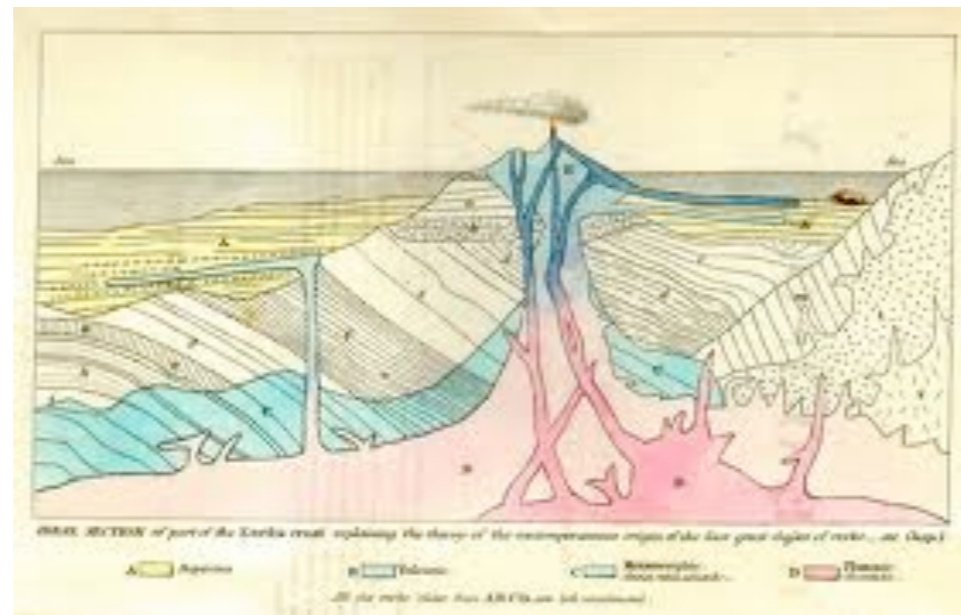
deep time



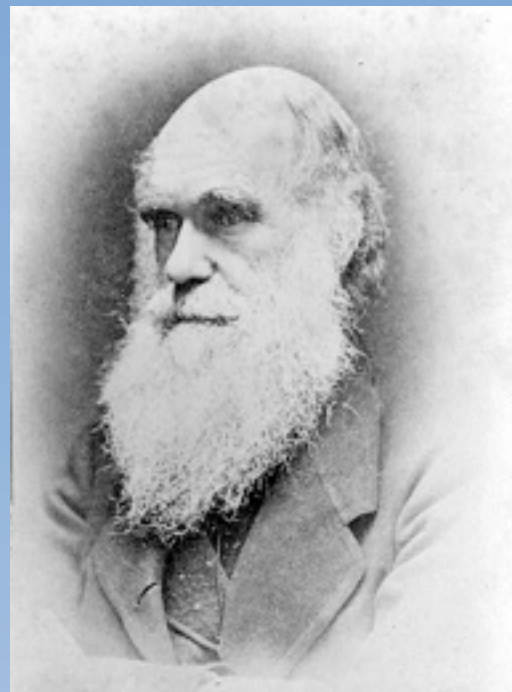
Charles Lyell
1797-1875

geological time

Lyell: "time, time, time"

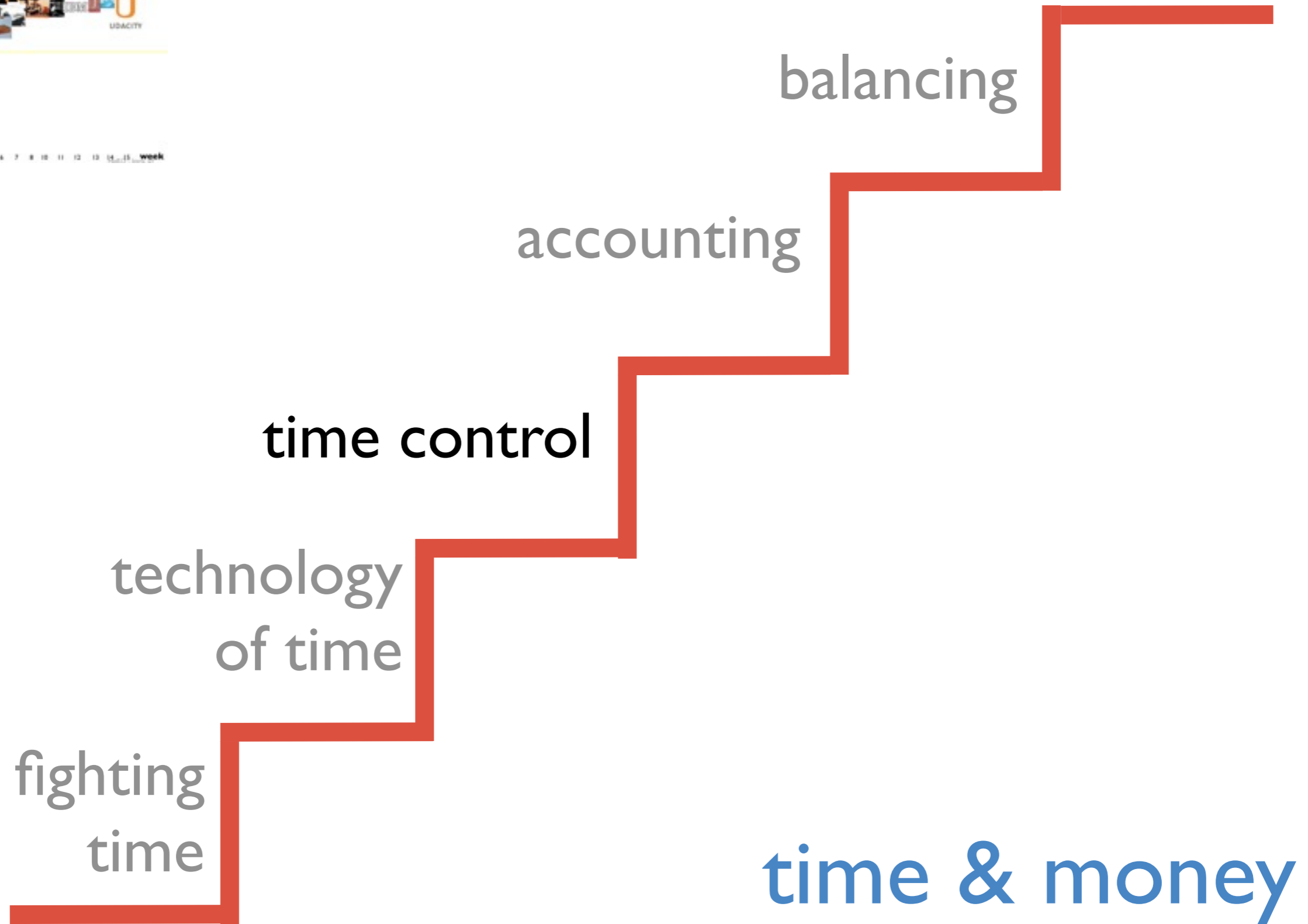


Darwin: "I really think my books
come half out of Lyell's brain."



Charles Darwin
1809-1882

overview



time control

bell tolling

1335: Amiens start of work, lunch, end of the day controlled by bell rung by the city

--decree of Phillip VI

1664: "that as many as might live within the sound might be thereby induced to a timely going to rest in the evening, and early arising in the morning to the labours and duties of their several callings"

fields to factories

"The work pattern was one of alternate bouts of intense labour and idleness, wherever men were in control of their working lives. (The pattern persists among some self-employed, and perhaps also among students.)

"the industrial revolution demanded a greater synchronization of labour"

--Thompson

factory discipline

Wedgwood's Etruria "clocking in"; tell-tale clocks





Laurence Sterne
1713-1768

invasive clocks

Pray dear, quoth my mother, have you not forgot to wind up the clock? Good G--! cried my father...Did ever woman, since the creation of the world, interrupt a man with such a silly question?

--Laurence Sterne, *Tristram Shandy*, 1759

"No modest lady dares to mention a word about winding up a clock ...Nay, the common expression of street-walkers is, "Sir, will you have your clock wound up"

--*The Clockmaker's Outcry against the Author*, 1760

12-Hof113-Time&Money 36

THE
Clockmakers Outcry
AGAINST THE
AUTHOR
OF
The LIFE and OPINIONS of
TRISTRAM SHANDY.
Dedicated to the
Most Humble of Chrifitian Prelates.
Tu es Sacerdos secundum ordinem Melchisedech?
Art thou a Priest according to the Order of MEL-
CHISEDECH?

time

"Machines were the Pemberton force .. Machines for opening letters and sealing them, automatic typewriters, dictation phonographs, pneumatic chutes. But none of the other machines was so **tyrannical as the time-clock** ... She knew that the machines were supposed to save work. But she was aware that the girls worked just as hard and long and hopelessly after their introduction as before."

Sinclair Lewis, *The Job*, 1917

battles ahead

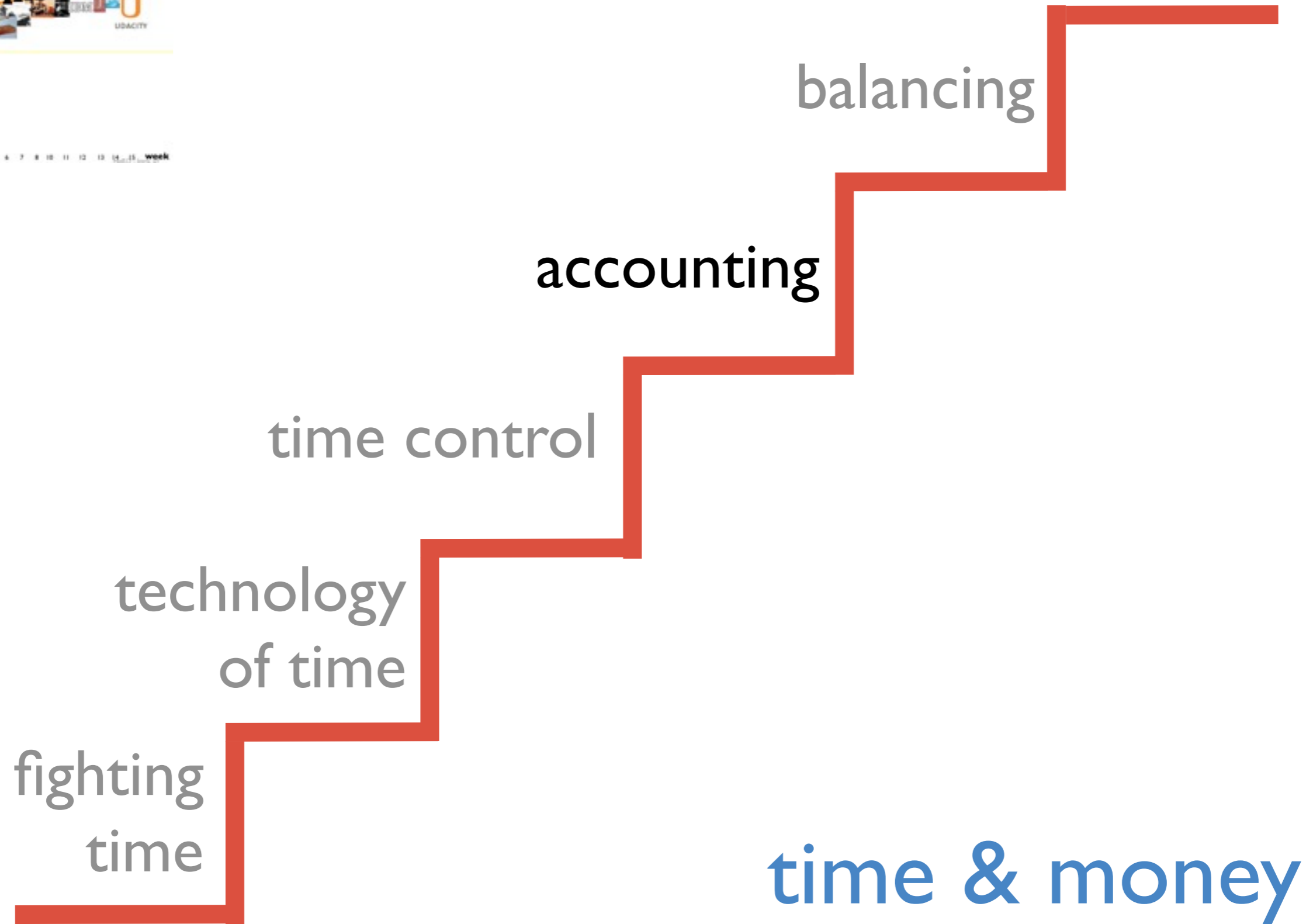
"a vigorous and licensed popular culture had evolved, which the propagandists of discipline regarded with dismay"

"fight, not against time, but about it"



Coming up
ip

overview





accounting



Sumerian tablets

record keeping

the code of Hammurabi

"if a man has given on deposit without
elders or contract ...[if] they contest it,
there shall be no claim"

--Hammurabi, Babylon c 1700 bce



Rome

adversaria, codex accepti et dispensi, liber rationum



the Italian method

"The inventor of Accounting ..."

1494: Luca Pacioli *Summa de Arithmetica*
[cp Gutenberg et al ...]

more reliable history

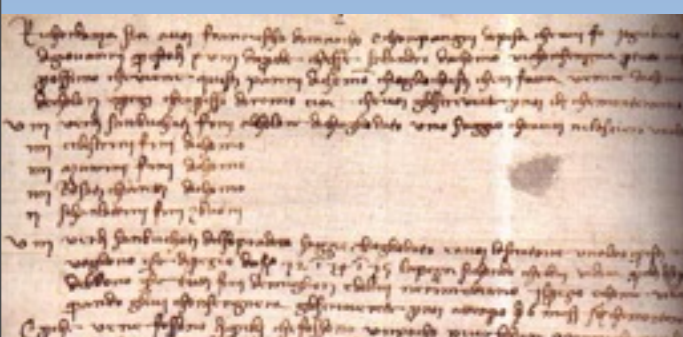
1211: proto double entry, Florence
"Arabic" numerals, via al-Khwarizmi

c 1340: double entry in Genoa

1366: The Merchant of Prato
(Francesco di Marco Datini)



Luca Pacioli
c 1445– 1517





Maurice of Nassau
1567–1625

a popular literacy?

from princes and courts

Prince Maurice of Nassau

Colbert, "Information master" for Louis XIV

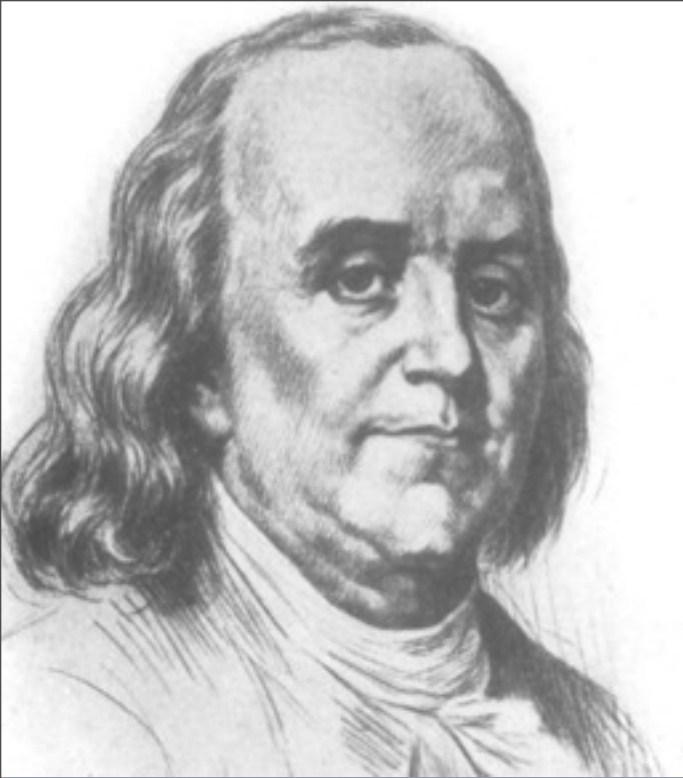
to plebians and the gallows

Peter Linbaugh, *The London Hanged*, 1993

Anna Karenina vs War & Peace



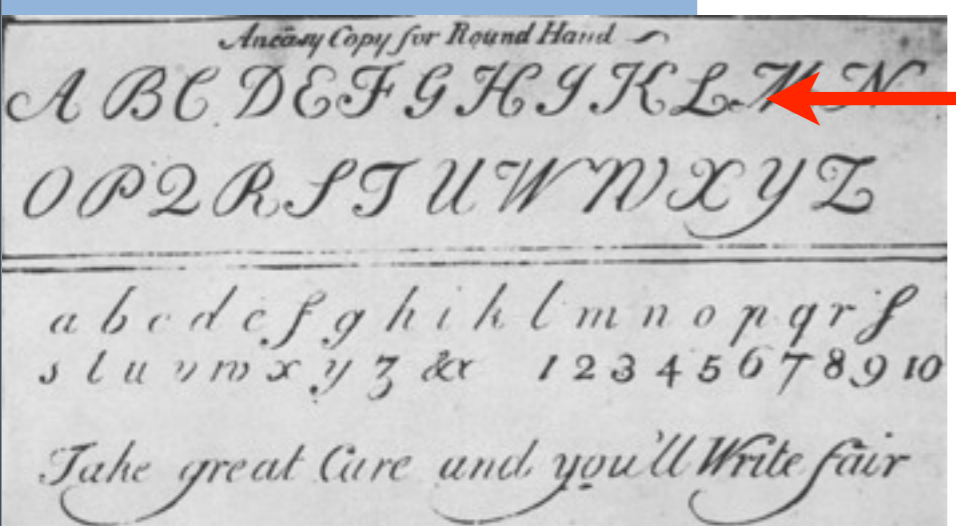
Jean-Baptiste Colbert
1619–1683



Old Tradesman
1706-1790

popular item

James O' The American Boy
INSTRUCTOR:
James O' R, James
Young Man's Best Companion.
 CONTAINING,
 Spelling, Reading, Writing, and Arithmetick,
 in an easier Way than any yet published; and how to qua-
 lify any Person for Business, without the Help of a Master.
 Instructions to write Variety of Hands, with Copies
 both in Prose and Verse. How to write Letters on Bu-
 siness or Friendship. Forms of Indentures, Bonds, Bills
 of Receipts, Wills, Leafes, Releases, &c.
 Also Merchants Accompts, and a short and easy Me-
 thod of Shop and Book-keeping; with a Description of the several
American Colonies.
 Together with the *Carpenter's Plain and Exact Rule*: Shew-
 ing how to measure *Carpenters, Joiners, Sawyers, Bricklayers, Pla-*
sterers, Plumbers, Masons, Glasiers, and Painters Work. How
 undertake each Work, and at what Price; the Rates of each Com-
 modity, and the common Wages of Journeymen; with *Gunter's Line,*
 and *Coggeshal's Description of the Sliding-Rule.*
 Likewise the **PRACTICAL GAUGER** made Easy; the Art
 of *Dialling*, and how to erect and fix any *Dial*; with Instructions for
Dying, Colouring, and making Colours.
 * *To which is added,*
The POOR PLANTERS PHYSICIAN.
 With Instructions for *Marking on Linnen*; how to *Pickle*
 and *Preserve*; to make divers Sorts of Wine; and many *excellens*
Plasters, and Medicines, necessary in all Families.
 And also
 Prudent Advice to young *Tradesmen and Dealers.*
The whole better adapted to these American Colonies, than
any other Book of the like Kind.
 By **GEORGE FISHER**, Accomptant.
The Ninth Edition Revised and Corrected.
PHILADELPHIA: Printed by B. FRANKLIN and
 D. HALL, at the New-Printing-Office, in *Market-Street,* 1748.



THE
Young Man's
COMPANION,
 Or a very useful Manual for
YOUTH.
 CONTAINING
 Plain and full Directions for Spelling, and Reading
 English and Latine, and the Englishing the La-
 tin Bible without a Teacher; with easie Rules
 for Writing and Arithmerick. Likewise the
 Plotting, and Measuring of Land, Globes, Stee-
 ples, Walls, Barrels, Timber, Stone, Boards,
 Glass, &c.
 Of Surveying, Astronomie, Dialing, and Glazing;
 also some secrets in Navigation, Geography,
 and Colouring of Globes; with a Map of Eng-
 land; and a Brief History of the Kingdoms
 Remarques on the late Great Frost, and other
 Prodigious Accidents. All foreign Coin reduc-
 ced to English Money, with the Commodities of
 several Countries: Of the Weather, Astrology,
 Palmistry and Geometry: Reccipts in Physick
 and Chyrurgery, of Husbandry and Ordering of
 Bees: Of Weights, Numbers, Purchase of An-
 nuities, Leases, &c.
 An Account of Time, Days and Months, under their vari-
 ous denominations: Hard Words in Law and Chyrur-
 gery explained.
 With all the Fairs, Highways and Roads in England,
 and, many more useful things; together with an
 Alphabetical Table for the ready finding any Matter
 herein contained.
 The second Edition, with very large Additions.
 By William Mather.
 LONDON, Printed for Thomas Hawkins, in George-Yard
 in Lombard Street. 1685.

In the British Edition of this Book, there were many Things of little or no Use in these Parts of the World: In this Edition those Things are omitted, and in their Room many other Matters inserted, more immediately useful to us Americans. And many Errors in the Arithmetical Part are here carefully corrected.

VALE & FRUERE.

eternal truths?

successive adaptation

William Mather, *Young Man's Companion*
 (24 editions by 1775)

George Fisher *The Instructor*, 7 editions to 1744
 (or Mrs Slack?)

The American Instructor, 9th edition, 1748
 (16 editions by 1800)

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 ced to English Money, with the Commodities of
 several Countries: Of the Weather, Astrology,
 Palmistry and Geometry: Reccipts in Physick
 and Chyrurgery, of Husbandry and Ordering of
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 (16 editions by 1800)

"Not only published by Franklin and Hall,
 but ... largely rewritten by Franklin."
 --Linglebach, "Franklin's *American
 Instructor*" 1952

enduring advice

Advice to a young Tradesman, written by an old One.

To my Friend A. B.

As you have desired it of me, I write the following Hints, which have been of Service to me, and may, if observed, be so to you.

REMEMBER that TIME is Money. He that can earn Ten Shillings a Day by his Labour, and goes abroad, or sits idle one Half of that Day, tho' he spends but Six-pence during his Diversion or Idleness, ought not to reckon that the only Expence; he has really spent, or rather thrown away Five Shillings besides.

Beware of thinking all your own that you possess, and of living accordingly. 'Tis a Mistake that many People who have Credit fall into. To prevent this, keep an exact Account for some Time of both your Expences and your Incomes. If you take the Pains at first to mention Particulars, it will have this good Effect: you will discover how wonderfully small trifling Expences mount up to large Sums, and will discern what might have been, and may for the future be saved, without occasioning any great Inconvenience.



5/23/06	WITHD	Good Earth Groceries	27.36	Deposit	1,669.04
		Groceries	4456 PURCHASE	Open Split	
5/23/06	EFT	Sun State Credit Cards (Sun State)	250.00		1,419.04
5/24/06	1209	Water Company	32.15		1,386.89
		Utilities:Water			
5/27/06	EFT	Phone Company	47.62		1,339.27
		Utilities:Telephone			

still going

the books & the bottom line



Welcome to GnuCash.org

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Microsoft Windows XP/Vista/7

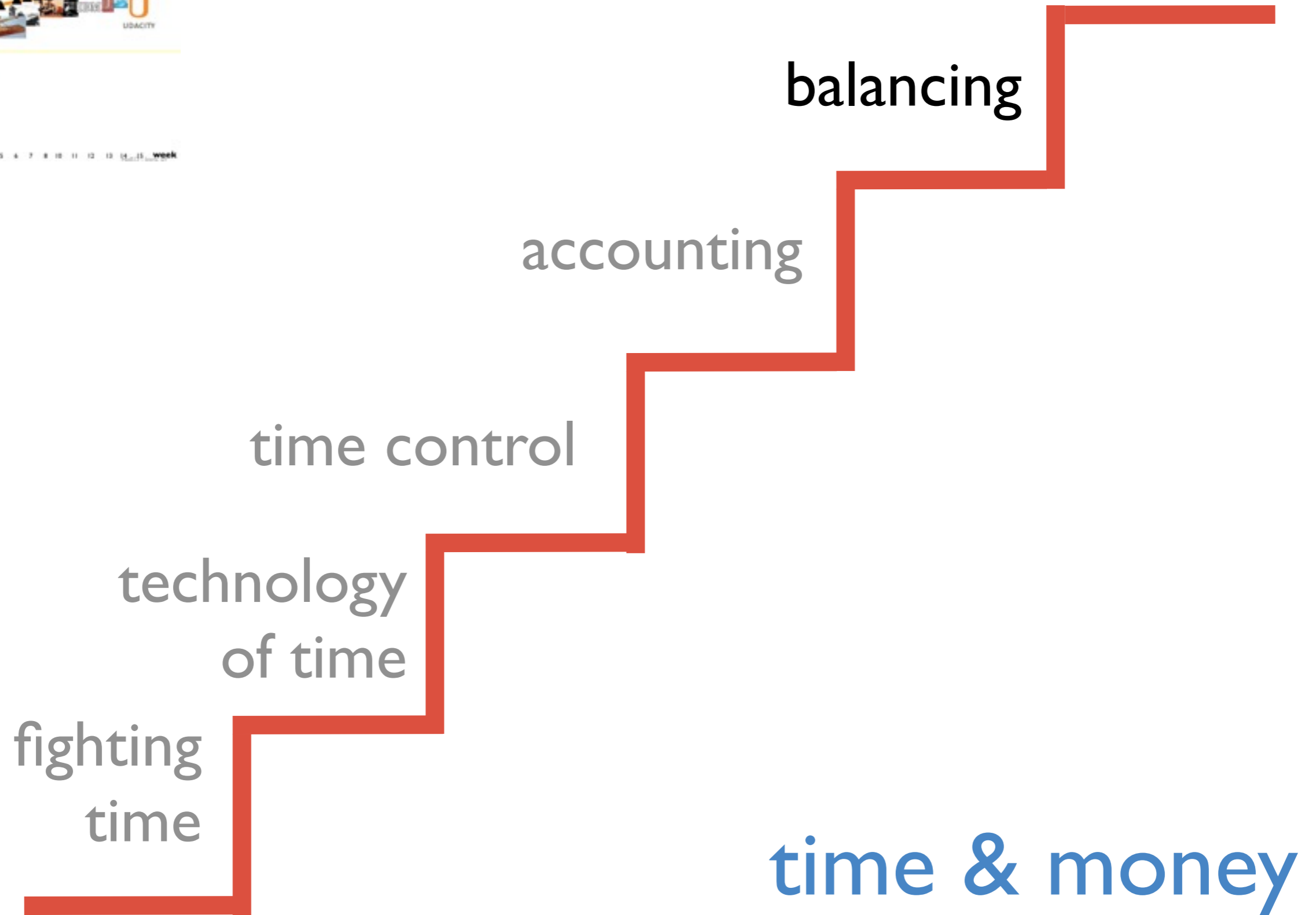


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overview





"if they come out alike"

assets = liabilities + equity

Trial on Stockton, California's bankruptcy eligibility next month

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SACRAMENTO, Calif. | Tue Feb 26, 2013 5:56pm EST

Exclusive: Bankrupt San Bernardino picks twice bankrupt manager

Recommend 234 people recommend this. Sign Up to see what your friends recommend.



By Tim Reid
LOS ANGELES | Fri Feb 22, 2013 2:56pm EST

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Christopher Edmonds - TSC

Enron Files for Chapter 11 Bankruptcy Protection

By Christopher Edmonds 12/02/01 - 09:10 PM EST

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After exhausting its other options, **Enron (ENE)**, once the king of deregulated power markets, pulled the plug Sunday and sought bankruptcy protection, leaving creditors scrambling and investors wondering how its staggering debt will affect trading Monday morning.



out of balance

UK argues downgrade shows need for austerity

February 25, 2013 | [RSS Feed](#) | [Print](#)

AP

By DANICA KIRKA, Associated Press

LONDON (AP) — The British government attempted Monday to cast as good a light as possible on the loss of the country's cherished triple-A credit rating, arguing it showed the need to press ahead with austerity measures to lower debt.

Rep. Gohmert: Staggering US Debt 'Immoral'

News

Growth in US budget deficit slows in January

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by Associated Press

kvue.com
Posted on February 12, 2013 at 2:19 PM

WASHINGTON (AP) -- The federal government reported a rare surplus for January and is on track to run its smallest budget deficit since President Barack Obama took office.

Tuesday, 26 Feb 2013 05:10 PM
By Jim Meyers and John Bachman

unbalanced
but
good or bad?



Michael Pento, Contributor

I examine federal monetary policies and other macroeconomic issues

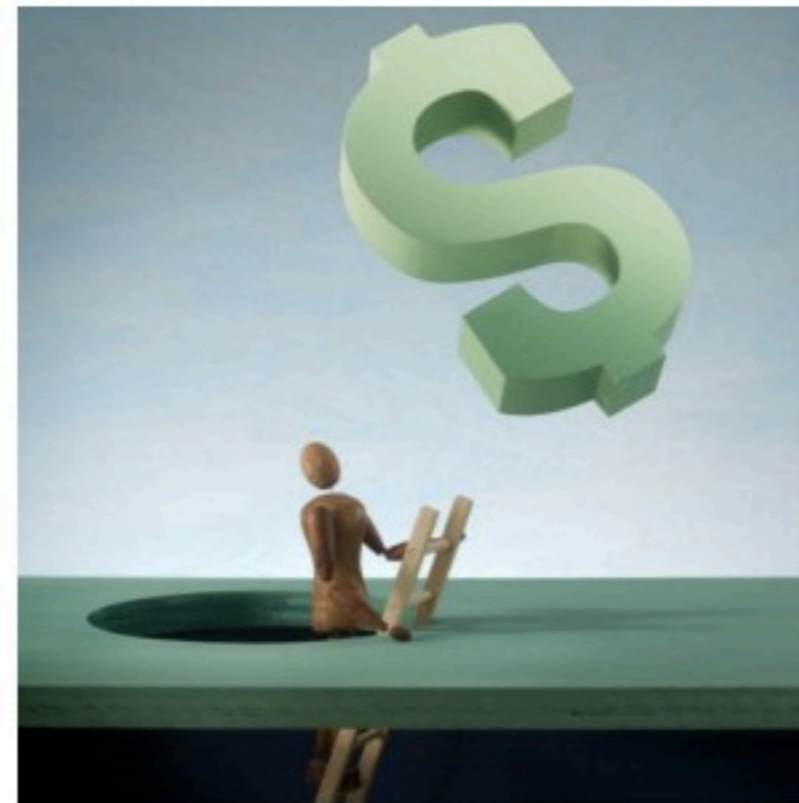
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2/15/2012 @ 12:35PM | 270 views

Trade Deficit Data Belies U.S. Recovery

[+ Comment now](#)

Wall Street is extolling the virtues of our rising U.S. trade deficit as a sure sign the economy is well on the road to a full and viable recovery. It was reported last week that our level of trade imbalance jumped to a six-month high in December to \$48.8 billion (up 3.7%), from \$47.1 billion in the prior month. For all of 2011, the shortfall grew 12% to \$558 billion, the most since 2008.



Other countries may not be buying as much of U.S. stuff

balancing acts



David Hume
1711–1776

"apprehension of the wrong balance of trade, appears of such a nature, that it discovers itself wherever one is out of humour with the ministry, or is in low spirits."

David Hume,
"Of the Balance of Trade," 1752

the bottom line?





Cal
Time

An Operational Excellence Project

schools "a spectacle of order and regularity ...
they are become more tractable" --Thompson

time, money, & education

"The Nonequivalence
of High School
Equivalents"

Stephen V. Cameron
& James J. Heckman

1991

"They who have the art
To manage books, and things, and make them work
Gently on infant minds as does the sun
Upon the flower - the tutors of our youth,
The Guides, the Wardens of our faculties,
And Stewards of our labour, watchful men
And skilful in the usury of time,
Sages, who in their prescience would controul
All accidents, and to the very road
Which they have fashion'd would confine us down,
Like engines."

William Wordsworth, *Prelude*, 1850

coming up

5 Mar: Communications “Revolution”

Required Readings

- George, Henry. 1869. “The Western Union Telegraph and the California Press”.
- Beauchamp, Christopher. 2010. “Who Invented the Telephone? Lawyers, patents and the judgments of history.” *Technology and Culture*, 51(4 October).

Additional Materials

- John, Richard. 2010. *Network Nation: Inventing American Telecommunications*. Cambridge, MA: Belknap Press.
- Fischer, Claude S. 1992. Chapter 2, The Telephone in America. *The Social History of the Telephone to 1940*. University of California Press. Berkeley. Pp 33-59.

7 Mar: The Telegraph in China

Guest Lecture: Tom Mullaney, Stanford University

assignment

Fisher, Franklin and other teachers of accounting suggested that the technology of accounting could help readers gain control their lives. Thompson by contrast suggested that new technologies led to people having their lives controlled. (When he noted that "The small instrument which regulated the new rhythms of industrial life ...was not only useful; it conferred prestige upon its owner, and a man might be willing to stretch his resources to obtain one" [p70], he might have been talking about the cell phone.) Again, while many suggest that communications technology is liberating, George suggested that it was primarily used to control access to information and other people's lives. Are these two visions (one of increasing freedom, the other of increasing control) compatible? Use the readings and, if you wish, some modern technology to make your case.