

Stream of consciousness about stream of time

Fluxo de consciência sobre o fluxo do tempo

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1 Time as change

“TIME” is an abstraction imposed upon us by physicists, bureaucrats and others to create order. As when loud church bells, or minaret chanting, created shared community time. “Change” is concrete, empirical, intersubjectively communicable. Some changes, like positions of hands on clocks or ringing of bells, particularly Big Ben (now under repair), and subatomic processes, are *chosen* as representing “time”, carrying “time”, even as being “time”. “No change” means no time. But clocks continue, marking “time”. Time is different from gravity operating on planets and apples. Gravity is there even if nothing is falling. And, its pull varies with a parameter, g , experienced by astronauts in outer space, with $g = 0$. We often find time “passing quickly”, “slowly”, “standing still”; referring to some changes with those characteristics, not to “time”. Whereas changing g impacts all objects with mass, m , with a force $F = mg$, there is nothing corresponding to this for all changes. There is no parameter, h , for the speed of time in general. When an aging person uses metaphors like “time passing slowly”, “standing still” or “simply flow-

ing”, it is because little is changing in the context from day to day, week to week, year to year. Official, public *kronos* is ticking, or ringing, but little else is changing. “Still” should not be confused with *kairos*, the moments we want to capture forever: no change, wishing for “time” to “stand still”. We can speed up, accelerate, changes, and slow down, decelerate. “Power” is command over change; some have more, some less. “Class”—economic, military, cultural, political—is another word for power. Our age is marked-marred by “accelerated history”: from a Cold War with two superpowers pitted against each other via the implosion of one (holding on to ultimate power) and the other declaring “we won” unipolarity to its empire cracking, declining, falling. Down, out.

Enters *multi-polarity*, with USA, EU, Russia, African, Latin American and Islamic unities, India, ASEAN, China, Japan. 10 poles. With USA-EU poles as *West*, and Russia-China+ poles as *SCO*, 8 poles. Not uni- or bipolar, a new multi-polar world emerging, solidifying. All these mega-happenings within the time span of only two decades. What happened to the macro level of states and nations? States fused into regions and nations into civilizations; in 10 or 8 poles; 8 if USA-EU fuse into West and Russia-China into SCO; will they do that? August 2017 the former have serious problems; the latter less so. Underlying it all was a jump from quantity to quality in speeds of transportation and communication, from linking states to linking regions, except for big states already regions by them-

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selves. The mega level grew at the expense of many too small macro level states. And the meso level within societies, divided by fault-lines, and the micro level between and within persons? Something similar. At the meso level: multipolarity, bi-gender; tri-generation child-adult-old; penta-racial (white-yellow-brown-black-red). Human rights, democracy- *different but equal* -were crucial factors.

At the micro level: recognition of different, significant others, inclinations, co-existing inside ourselves, as normal and enriching. *But class survived*. And huge inequality in power and resources. We will return to tetra-class-economic-military-cultural-political-domestically, and globally among states, as factor delaying change. "Time" accelerates by accelerating changes accelerating us. Countless "things" change. But changes hang together in ways we are unable to unravel. A handful of planned changes may bring about a whirlwind; or a stand-still, with changes canceling each other. *Plus ça change, plus ça reste la même chose?* That is something else, applying to the deep scripts; they change slowly or not at all. Empirical changes are by definition surface changes, quick or slow.

A famous jazz musician was once asked what jazz would be like in 20 years or so. His answer: "if I knew, we would already be there"; he would be playing that jazz. Well, we might be there where jazz change is concerned, but there are zillions other change dimensions. This limits our ability to plan the future; future, like present, being holistic and dialectic. How about the past? Clocks and calendars can be reversed. And so can many changes. Some, like aging, death, seem irreversible. Can we by reversing changes bring back the past? This essay is inspired by Martin Suter's novel *Die Zeit, die Zeit*, time, time- (Zürich: Diogenes 2012) and by those who inspired him: to reverse changes to recreate in minute detail a point in the past—more particularly when the beloved wives of the two protagonists were still alive, hoping to meet them. In other words, Suter's novel also makes the irreversible reversible, by recreating the exact context. No reason to follow a creative novelist that far. But making reversible changes to bring back some of the past sounds interesting. And many do that symbolically at silver-golden-platinum

anniversaries: dressing, photos displayed, icons, memories, speeches. Re-creation. This author organized in 1951 a bus tour for natural science students Oslo-Capri-Oslo through 10 countries, and 50 years later, in 2001, we recreated the first 60 kms ride with the 70-80 tears old. Most of us alive, standing on the same Natural Science faculty stairs, boarding a bus. Deeply touching because so much had been recreated, including the seating in the bus. The past crept deep inside us. So did the present: "how old they look"; after a second or two followed by "that may also apply to me". Many used bus mirrors for checking. But altogether a memorable, fine re-creation. Better let bygones be bygones? No. They are parts of us. Better relive the joys and rethink what could have been better. Recreate to reflect. Reflect to recreate.

2 Change as curves

Enters a pioneer: Thomas Malthus 1766-1834, with an "arithmetic"-linear curve for food production, a "geometric"- exponential curve for people production, population; reflecting on the relation between the two. Population growing much faster than food, 2-4-8-16 vs 1-2-3-4 every 25 years, people were condemned to misery. This is to celebrate the malthusian primacy given to two curves—audacious, complex, simple—not to explore solving the contradiction. A typology of primordial curves using four simple curve shapes: J, A, U, L shaped, only up, down-and-up, up-and-down, and only up. JAUL like in "haul", hauling history. That misses the contradiction between Malthus' two J-shaped curves, like Malthus misses the A curve. And then the flat curve for no change at all, missed by both. With the mathematics of functions of one variable, $y=f(t)$, at our disposal much more sophisticated curve typologies can be developed. But the word "shape" presupposes a variable t, a t-axis. Malthus used "khronos", no. of years for t, whether there is such a thing or not. We can do it as if time is at the highest level of measurement, "interval scale", beyond "cardinal scale" (no. of days, years). But ordinal scale will do: "earlier, at the same time, later" for time; "less, same, more" for change. Can we still talk about curve shapes? No problem. All JAUL are

there as more-more-more, more-same-less, less-more-less, less-less-less. And the flat curve as same-same-same. We can explore shapes with t as continuous variable, and with t as a 3-point, ordinal scale, variable. Khronos is generally accepted, but the ordinal scale is more honest, more truthful, and sufficient. After Malthus came logistic curves-world population stabilizing-and A-shaped curves-now decreasing. And a focus on aging populations heading for L, down; and on "younging" populations heading for J, up. The West and China are aging, Africa and Latin America younging, shifting the world population gravity in their direction. All curves. Another typology for curves is between monotone, never decreasing or never increasing, and not monotone, doing both. In other words, between J and L on the one hand, and A and U on the other. A and U have a maximum and a minimum, can both add the other, and much more. Thus, the dromedar curve has one maximum but the camel has two, with a minimum in-between. Both animals can cover vast space and vast time. The curves mentioned so far are all continuous; no jumps. This is a general characteristic of Western thinking, impervious to the many discontinuities and jumps in Western history. To mention some: the 395 division of the Roman Empire in West and East; the end of the West in 476; of the East in 1453. The Iberian peninsula: Jews pitting Umayyad Muslims against Visigoth Christian fundamentalists, establishing the Córdoba Caliphate in 711, disestablished in 1492. All very dramatic, all very discontinuous.

The Western way of peering into the future is careful "trend extrapolation"; trends, and extrapolations, both being continuous. *Natura non facit saltus*, nature makes no jumps. The code for the world was the intelligent design of the Creator, or—amounting to the same—immutable Laws of Nature. All that is needed is the codes to unfold.

The Chinese way takes jumps for granted, in dialectic holons with forces and counterforces, themselves with forces and counterforces. Maybe too dynamic, as opposed to the Western view being too static, with continuous curves paving their continuous paths into the future? A good argument for work on a meta-theory building on both. Mathematics harbors discontinuities, but not the mathematics of planetary movements.

Nature being most natural when static yielded to nature being most natural being dynamic, in dynamic equilibrium. In mathematics arithmetics and geometry yielded to calculus, Euclid to Cauchy. Planetary equilibrium assumed normative character. Economics has still not liberated itself from that commanding model for profit.

3 Curves as history

Enters a pioneer: Fernand Braudel 1902-1985, with tripartite history: *événements, conjonctures, la longue durée*. Events are points, trends are curves, long-lasting a constant; curves, all as time functions. History is the sum of all three, as explored in *The Mediterranean World at the Age of Philip II* (1949). A complex yet simple, audacious, gift to humanity focused on the victims of history, the suffering of marginal people; not on kings, aristocrats.

Two classical sciences, geography and history, explore the human condition in space and time. In [1] above the basic point was "time is change", in [2] above "changes are curves". History is about curves in the broad Braudel sense. *The sum of curves constitute history*.

The meaning of that statement is in what it excludes. It rules out history as succession of epochs: antiquity-middle ages-modernity. And rules out history as succession of decisions by rulers; effective decisions are not made out of strength, but by sensing curves. Very much was happening within each epoch. JUAL makes points in space and time different. Curves convey that diversity, epochs not. Even two actors on the same A-curve but in different sections of that curve, one uphill, the other downhill, are in different situations. So do beginning and ends, as J or as L; very different. Curves give us a language for a very rich historical discourse; epochs do not. "Epochs" share something, but basing understanding on that only is to history what prejudice is to humans: prejudgment. Discriminating human beings by imposing similarities. Disregarding the right of points in space and time, like humans to be different, and yet equal.

Look at Malthus again. As pre-diction about the future we today see his thesis as a *self-denying*

prophecy, mobilizing initiatives to make the prediction of increasing misery not come true. Decreasing the population growth by birth control—for Malthus the cleric vice—increasing the food supply, for instance by imports. *Creating history*. As a post-diction: why not more misery if Malthus was the rule? Because “self-denying” curves were also operating. *Exploring history*.

Look at Marx’s increasing misery in the world capitalist system thesis. Self-denial led to major innovations: welfare states, social democracies—more or less social and democratic—social capitalism. Self-denial stimulated curves to meet the basic needs for health and education of lower class males to use them as soldiers and-or workers: in Bismarck Germany and in late Tokugawa (70% literate)-Meiji Japan. Great leaps into the future. And both are still capitalist. The UK and the USA, for all their democracy, were late-comers: the UK as late as the National Health Service Act on July 5 1948, the USA still not, leaving health, and much education, to the “market”. Used to running most of the world they sensed competition, but instead of learning the curves decided to crush Germany and remote Japan. The First and Second world wars were already in the cards. Could they have been avoided if Germany and Japan had not raised the levels of lower class males to deny their predicted increasing misery? And, could that have been avoided if Marx had not made that prediction? We will never know, but the answer may be yes, yes. Predictions matter. Then, read Marx as post-diction, into past history. Marx himself does that with his epochs-stages-phases and the exploited, deprived of means of production, overthrowing the exploiters. But it is easier to preside over past history with hindsight, with *l’esprit des escaliers*. Had Marx published at the time of slave-owners and land-owners, they might have been as cunning and creative at self-denial as capitalists. Marx’s predictions were also *self-fulfilling prophecies*, enforcing existing and launching new working class movements like trade unions, with many actions like strikes, but few efforts to launch alternative economies beyond shared company decision-making. Few real cooperatives in the basic sense of transcending the employer-employee distincton.

4 What are the units of history?

In what “something” are curves emerging, and taking shape? In individuals and collectivities, as categories and as actors, at the micro, meso, macro, or mega levels. Chemistry may serve as a metaphor, with individuals as atoms and collectivities as molecules; super-collectivities of collectivities, regions, worlds; like super-molecules of molecules, like proteins. The task is like chemists to unravel compositions, and processes, curves. Above we explored how macro level states and nations fused into mega level regions and civilizations. In 1958 the European Community emerged as an actor after centralization of power curves had worked for some time; the same happened to the ASEAN region in 1967. With those curves working all over more followed, and more will follow. At the meso level, between territorial provinces new states were, are, will be born, feeding them into the macro level. And at the same time, at the micro level, J-shaped hunger announces itself, followed by feeding with mouthfuls, from zero food, to some, to much, to maybe too much (Japanese saying: stop at 80% full). The hunger curve evolves from a J to an A; maybe with a repeat for the desert tummy. So also for sex? More complex; maybe more camel, less dromedar. We can follow the tradition and over-select macro, so-called societies; in principle self-reproducing by producing both people with needs and what is needed to meet the needs. In today’s inter-connected world a less realistic, but useful, abstraction. And the micro level? Meso level fault-lines satisfy the micro-level need for *identity*. Who am I, woman, adult, white, middle-class, ethnic, in the center? Pick one, two, three, four, five, or all six of the above. Fault-lines propose identities, impose identities or serve to compose identities. We get social groups with more or less overlapping identities. Conclusion:no level has monopoly on the “units of history. All four are inter-connected by curves operating, impacting on each other.

5 History as power

Enters a pioneer: Karl Marx 1818-1883, with parts of the story: Power =C lass. But we have posited four types: economic, military, cultural, political power. The four power curves for key social groups

become key analytical and political instruments. Marx worked with two groups with and without means of production, and one power, force. With four power types we get 16 power profiles; from high-high-high-high to low-low-low-low; powerful to powerless. An actor or category can have "full house" in 1 way, be short on one in 4 ways, on 2 in 6 ways, on 3 in 4 ways, on all 4 in 1 way; adding to 16. With 14 profiles between full and zero power, powerful and powerless. Simplify to two power dimensions and four profiles; two in *rank equilibrium*, high-high and low-low and two in rank disequilibrium. Disequibrated actors try to equilibrate, get high on the lagging; like catching up on education or income. Highly predictable curves: where there is rank disequilibrium, something happens to that actor. Then two actors: rank concordant, meaning high-high and low-low; or in *rank discordance*, high-low for one, low-high for the other. *Rank concordance* is the recipe for structural violence. *Rank discordance* is a recipe for direct violence. At the center of violence and peace theory. Marx had one rank, exploiters vs exploited, and one power, force; the exploited revolt. Marx missed multi-dimensional power, power profiles, rank equilibrium and disequilibrium, and above all rank concordance and discordance. His concern was class and class struggle, not genus and genocide. Rank discordance, Jews, Armenians high on economic-cultural and low on military-political power and Germans, Turks with the opposite profile, was underlying two genocides. Does it also underlie class struggle? Like the first to revolt being educated working class, typographers, maybe against uneducated exploiters, not the most powerful exploiters? Mobilizing the emotional energies related to rank discordance? Many predictions have now been made, inviting self-denials. *To avoid direct violence we should avoid rank discordance.* That can be done by increasing the lagging economic-cultural ranks of the party high on military-political power as done in Malaysia but not in Germany and Turkey. Less mesmerized by who has "too much" and more by who has too little; without arming those short on arms. *To avoid structural violence we should avoid rank concordance.* Avoid rank profiles of "full house" and of "no power house" at all. A person high on culture (professor) and

on the economy (a good salary) should not also be high on political power (MP). Leave that to people low on one or two of the others. A person low on culture and on the economy should not also be low on political power but have political power, through trade unions. In other words, do not reduce the difference between high and low on any one rank dimension but the differences in power profile sums. However, the difference between high and low can also be reduced by making them irrelevant, or less relevant. That can be done by making other concerns more relevant. Thus, people very different in total ranks can be made similar by giving them a shared concern, like "clean environment". This is where NGOs take over and class yields, leading to the wrong conclusion that they have become "middle class". No, class is still there, but is less salient in organizing society. From a marxist point of view there are good reasons for despair. Power to overcome exploitation in a classless society is dissipating, by multi-dimensional power, into self-centered rank equilibration, and into classes working together on all kinds of other concerns Correct, and that is why lifting the bottom up is indispensable, as is putting lids on the top lest they use resources for more power. However, we have also good reasons to be skeptical of the Big Bang class revolt to solve all problems: too much change from too little.

6 Conclusion

This essay about time is about human dignity. We are not drifting along something called time willy-nilly, like falling down pulled by something called gravity. Time is change; being masters of much change relevant to us we can create new contexts and call that moving forward in time, and recreate old contexts and call that moving backward in time. If that time language is important for us. Is it? Maybe change language is more important? And particularly creating and re-creating contexts to our liking? We have wonderful instruments for keeping contexts, not perfectly, but nearly so: the photo, and the video! Maybe we simply do not re-create enough, re-enjoying the past? Maybe we are even proud of not "fooling ourselves" into believing that we can "reverse time", being true fools, trapped in a time discourse? But

will we not sooner or later stumble upon that rather basic distinction between reversible and irreversible changes? Are we so sure they are really irreversible? The sun is supposed to undergo such changes, but are they relevant to us? And how about the person, like every human being aging, old or not, exclaiming: "I feel ten years younger!" Maybe he is more what he feels than what the calendar tells him? Or, more correctly, maybe he is what he chooses to be? And should re-create what made him or her feel that way? We are more on top of time than time on top of us. But it depends on our own consciousness of these matters and on what we choose to do. Recreating and creating contexts is demanding; drifting along is not. Recreating past: a case for reviving "bygones" was given above. Creating futures: I had a dream. Freedom. Not to have permanent obligations but to decide ad hoc, based on the merits of the matter. With the human concerns of Other and Self on top. Beyond that being one's own master. Re-creating pasts, creating futures. Including making a wonderful present last. And last. And last.



Johan Galtung Professor Johan Galtung, Norwegian, is a conflict mediator and pioneer in peace studies. He is known worldwide as founder of the academic discipline "Peace Studies" and mentor in the field of mediation and conflict transformation - both in the theoretical and practical spheres. Galtung first conceptualized the question of peacebuilding, calling for the creation of systems that

create sustainable peace. They are also the concepts of "structural violence" and "negative" and "positive" peace, which have had so much influence in successive generations of researchers working in the field of research for peace. It has played a decisive role in mediating and preventing violence in 45 armed conflicts in the world over the last four decades.

Johan Galtung holds a PhD in Mathematics and Sociology. He has received ten Doctor Honoris Causa degrees awarded by several universities and is Honorary Professor by four other universities. He founded in 1958 the Institute for Peace Research in Oslo and the pioneering magazine in the area of Peace Studies: *Journal of Peace Research*. He co-founded the Nordic Institute for Peace Research (NIFF) in 2000. He is a consultant of several UN agencies, a professor and a lecturer. He was the founder (in 2000) and rector of the University of Peace TRANSCEND, the first University of Peace Studies online in the world. He is also founder and director of TRANSCEND International, a global non-profit network for peace, development and the environment, founded in 1993 with more than 500 members in more than 70 countries.