After World

Robin Watkins

The sun does not oblige us to do this or that;
it only obliges us to do *something*.
—A. L. Chizhevsky

The silica in rocks, oxygen in the air, carbon in our DNA, the iron in our skyscrapers, the silver in our mobile phones were all, in essence, made inside stars billions of years ago. To consider material history, and so its embedded social history, as an expression of shared energy caught my attention when I first came across the research of twentieth-century interdisciplinary scientist Alexander Chizhevsky. Enveloped in our own technofictions as we are today, his theories may seem both of the past and yet all the more relevant for the future in light of the issues we are confronting in our day and age, from melting ice caps to frozen assets, infrastructural disruptions to the fall of post-war empires. As Manuel DeLanda writes of our present, 'human society may be seen as a "material" capable of undergoing these changes of state as it reaches critical mass in terms of the density of settlement, amount of energy consumed, or even intensity of interaction'.[1] This morphology is precisely what Chizhevsky studied so intently over his lifetime, developing a relational statistics that attempts to understand human society as a *material*, not only composed physically but also by the spheres of psychic activity belonging to natural phenomena. More specifically, Chizhevsky's theories focused on the physiological kinesis of the sun's influence on the behaving body—its skin pigment, heartbeat, the chemical composition of blood,[2] the electrochemical response of nerve centres[3]—offering a thesis that the physics of solar affect directly infiltrates and intervenes in the course of history.

As I understand it, Alexander Chizhevsky (Aleksandr Leonidovich Tchijevsky, 1897–1964) was born in a town called Tsekhanovets, once part of the Russian Empire, in what is now Poland. From an early age he became interested in the effects of solar activity when he became acquainted with the space scientist Konstantin Tsiolkovsky in Kaluga—now home to memorial centres that bear both their names—during a turbulent moment that (perhaps not so incidentally) sent him to the frontier of World War I. Chizhevsky's doctoral degree thesis at the Moscow State University led to the publication of 'Physical Factors of the Historical Process' in 1924, later abbreviated and

translated by Vladimir P. de Smitt, Columbia University, New York, in 1926; a text in which the alternating mood of the world-historical process is at its core. The facsimile you now hold in your hands is a copy of this translation, which I came across in 2009 and, as far as I know, it is the only summary of his work in English.[4] Although carrying a somewhat deceptively simple title, the work strays far from conventional readings of history. Instead of studying the past through artefacts or biofacts, the analysis of 'material already dead and useless', Chizhevsky sought to decipher living statistical facts.[5] Bringing together his own blend of chronobiology and historiometry in order to compute revolutions, war cycles, migrations, pandemic outbreaks and other patterns of mass behaviour, he consulted thousands of events in Russian history books, classifying them into groups and assigning values to them. This data was then converted into graphs that show the approximate frequency and polarity of historical events following the intensity of sunspots, drawing a parallel between the eleven-year solar cycle (on average) and societal temperament (at large).[6] Not to be taken too literally, Chizhevsky stated that the solar cycle can never 'be called predominant or indispensable' to phenomena, placing us in a field of plural causalities and multidirectional affects.[7] Or to say, his theory does not focus on the planned results of decision-making but rather draws attention to the outline of the *unintended collective consequences* of human decisions.[8] His decision to use statistics provided him with an efficient vehicle through which to model and express his ideas clearly, without the noise of the colossal complexity of worldly interactions. Nevertheless, and irrespective of the reductive effects of statistics in general, his hypothesis, in digesting several centuries of terrestrial activity and converting it into flat, semi-smoothened intervals, presents an unprecedented correlation as well as prelude to our computational now; an excavation into the history of the world on a scale that would seem quite impossible not least one hundred years ago—merely approaching Patrick Brogan's 624-page chronicle of *World Conflicts* on my bookshelf today feels daunting.

To enable the futurology that Chizhevsky envisioned—a practice where things *coincide* to shape a certain probability or prediction—is less of a challenge in 2017 than in 1917. Nowadays we have algorithms at our fingertips that are able to interpret the effect of pretty much anything, including solar plasma.

To read Chizhevsky's graphs within this context is to trace the origins of our current technospheric beliefs back to a time when such parallelism was a relatively new thought. Unmasking the deities of information with objective and modern methods of computation meant shifting the divine workings of research (and its inherent basis in belief) towards a directly explainable, natural source. As such, Chizhevsky renews an ancient form of pagan data collection that replaces symbols of meditation with tools for analytical mediation and unlocks a methodology from which future events can be predicted. If there is such a thing as a spiritual form of statistics, this is probably as close as we might get to it.

Chizhevsky's research and scientific accomplishments were however also grounded and pragmatic. His development of the Central Research Laboratory for Ionisation in the 1930s, for instance, was supported by the Soviet government. From the laboratory, Chizhevsky researched and established the physiological action of negative ions (large quantities have an excitable effect on animals) and positive ions (large quantities have a sluggish effect). As a result he developed the air ioniser or Chizhevsky's Chandelier, which was later adopted by the New Age movement before becoming a common application in offices, government work environments, factories, even hospitals. By filling the air with negative ions, the Chandelier charges an atmosphere, thereby attracting and removing particles (mould spores, pollen, smoke, bacteria, viruses, dust) and preventing air-borne contagions or dirt from spreading. At the same time as supplying fresher air to industrialised USSR, he lectured on biophysics internationally, was invited to work with Chemistry Nobelist Svante Arrhenius (Chizhevsky was also nominated for the Nobel prize in chemistry), and performed research in the field of haemodynamics (the study of blood flow through organs and tissue in living bodies). In 1935, he discovered the metachromasy of bacteria known as the 'Chizhevsky-Velkhover effect', making it possible to forecast solar emissions that might be harmful to humans. All these strands of practical and theoretical research contributed to what Chizhevsky termed *heliobiology* or solar biology—his visionary perspective was summarised by the scholar George M. Young: 'in opposition to the Russian Cosmologists who spoke of how man affects the cosmos, Chizhevsky was interested in how the cosmos affects us'.[9]

For Chizhevsky's own trajectory, however, more localised, terrestrial powers would drastically affect his fate. In the early 1940s, his beliefs got him into serious trouble with Soviet leaders of the time, and his practice as an interdisciplinary scientist ended abruptly. He was sent out of his laboratory and into the Gulag; Joseph Stalin considered his theories and publications (in particular 'Physical Factors of the Historical Process') to undermine the ideological foundation of the Soviet Union: that solar flares could have had anything to do with the revolution was seen as preposterous and a direct provocation. Chizhevsky refused to withdraw his published research, and so he was sentenced to a labour camp in the Ural Mountains, followed by a 'rehabilitation' period in Kazakhstan, which added up to sixteen years of imprisonment. At some point, it is told, prison authorities realised they had a famous biologist in their midst and, when faced by a cholera epidemic that was sweeping the camp, they dragged him from his cell to see if he could contain it, which he did with the help of 'bleaching powder and other crude remedies at hand'.[10] As a result, Chizhevsky was given access to a small laboratory in the prison camp until he was eventually freed; he gradually returned to his scientific work in Moscow but never wrote about solar cycles again, turning instead to his other interests of painting, archaeology and poetry.

In 2017, exactly one hundred years after the October Revolution, we are approaching solar cycle 25. Standing before a time of political insecurity and uncertainty—rising nationalism, decentralised warfare, great migration, and possible ecological disaster—the world has never been so global, though it certainly has felt more together. The second part of this publication contains sunspot diagrams that were output especially for this edition by the Solar Influences Data Center, the solar physics research department of the Royal Observatory of Belgium. From solar cycle 0 (beginning in the year 1750) to 25 (beginning in the year 2020), it follows the complete history of observed and statistically recorded sunspots over the centuries, including the tumultuous decades since Chizhevsky's passing. Much like a Pythagorean Music of the Spheres, each cycle displays a distinctive blazing crescendo set within a similar register: the jagged red line, rising and falling, registers the true number of sunspots whereas the black line displays the smoothened average; the horizontal axis of time gives accord to the associations we might have with a given date or event, lending a beat to society's rhythmic events. Through our reading, we inevitably partake in enhancing particular histories, rendered from the convenient tales of our shared past, as much as inventing the narratives that make up our own subjective compositions. The fact that Chizhevsky's theory continues to resonate makes its probability worth considering, an imaginative speculation worth following: with the predictability of the world's general future aside, another kind of logic that might carry us through the forces that govern the physical factors of the present is needed. Whether this is drawn from mass-mediated politics or an astrology chart, I hope it will be accompanied by a voting ballot as well as a greater awareness of sunspots and their plausible effect on our collective decisions towards an after world, our world from here.

1 Manuel DeLanda, *A Thousand Years of Nonlinear History* (New York: Swerve Editions, 2012), p. 15.
2 Aleksandr Leonidovich Tchijevsky, 'Physical Factors of the Historical Process' (paper presented at the American Meteorological Society, trans. Vladimir P. de Smitt, Columbia University, New York, December 1926).
3 Ibid., p. 12.
4 I first read about this text in John T. Burns, *Cosmic Influences on Humans, Animals, and Plants: An Annotated Bibliography*, Magill Bibliographies (Lanham, MD: Rowman & Littlefield,1997).
5 Tchijevsky, 'Physical Factors of the Historical Process', p. 12.
6 Ibid., p. 13.
7 Ibid., pp. 19–20.
8 DeLanda, p. 17.
9 George M. Young, *The Russian Cosmists: The Esoteric Futurism of Nikolai Fedorov and His Followers* (Oxford: Oxford University Press, 2012), p. 166.
10 Ibid., p. 164.