A radicalizing event:
How the Chornobyl Disaster catalyzed disintegration of the Soviet Union

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Preamble

Radioactivity is the ability of the atoms' nuclei to disintegrate, releasing colossal energy (approx. 1 000 000 (*one million!)* times as much as the ordinary fuel), and emitting irradiation of so high energy that it penetrates through solid non-transparent media, turns stable material particles into ions (thus the name "*ionizing* radiation") and radicals, which start new physical-chemical reactions, many of them quite uncommon, quick and powerful. That is, radioactivity and its direct effects possess properties, which are most unusual, and, with almost no exaggeration, next to fairy-tale ones. From the moment of the emergence of biological life, its forms have been exposed to the ionizing radiation – and have developed quite efficient biological adaption to its effects under the normal radiation conditions at the Earth.

On the contrary, informed, cognizant acquaintance of the humankind with radioactivity and its direct physical and biological effects happened a historically short while (~130 years) ago, when it was discovered. In the following decades, ionizing radiation aroused some sensations, usually more comic that sensible, which soon faded. The notion entered global mass knowledge ~80 years ago (1945, the atomic bombardments in the end of WW2); the first mass personal encounter happened only ~40 years ago – in 1986, when the Chornobyl Disaster happened.

The combination of so outstandingly extreme and unusual material properties of radiation[1] with rather short period of their cultural appropriation, – moreover, the period being blemished with two extreme, both for their severity and scope, traumatizing events – could hardly result in anything except a badly distorted, practically mythic perception of radiation.

So, one can state that (1) the humankind is at the initial stages of cultural, cognizant adaptation to radioactivity and its effects, and (2) the current stage is distinct with major ignorance and deeply rooted myths. The two above circumstances require from a researcher of the topic rather brave, independent, very holistic, and, quite importantly, "outside-the-box" thinking. The author dares to think that, owing to his direct, exceptionally informed and equipped exposure to the Chornobyl Disaster, he is able to make a contribution, which can improve this hazardous state.

Introduction

The importance of the research project

The problem of influence of a large-scale emergency or disaster on the demise of a totalitarian/authoritarian state appears to be particularly important now for several reasons. Moreover, in many aspects, it is far from being a purely academic issue.

First, it appears that the learning process of cohabitation with radiation, outlined in the Preamble, has reached a phase, when all previous experience, including that of the Chornobyl Disaster, has accumulated enough evidence, a certain "critical mass" of it, to revise the existing views and perceptions of radiation, purify them from the myths and extremes, and transform them into a productive holistic multidisciplinary concept. Practical application of this latter should form the basis for the informed decisions about using or limiting the use of nuclear technologies; it should make this use more reasonable, and thus efficient and safe. In this holistic concept, the knowledge of social effects of radiation-related phenomena, particularly radiation accidents and disasters, constitutes an important part. The aspect is even more timely since now the industry of nuclear energy, after post-Chornobyl recession, has revived and dramatically expands.

Second, acute escalation of competition between democratic and totalitarian/authoritarian states seems to be a defining feature of the present geopolitical situation in the world. In this struggle the totalitarian/authoritarian states, on the one hand, clearly have become a global threat, and, on the other, often push themselves to the limits of their stability. The elimination of the existing regimes in such states as e.g., Russia or Iran is an issue of global importance. The Chornobyl Disaster, which was followed by the disintegration of the country, in which it happened, 5 years later, gives a valuable possibility to cast light on the general regularities of the disasters' impact on the disruption of the authoritarian/totalitarian states. Applying this knowledge to the existing ones, first of all Russia, one can obtain useful forecasts, and get prepared for the future scenarios.

Third, lately an opinion that Ukrainians did next to nothing to obtain the state independence, that it was a kind of windfall, a "present" for a passive nation (and it, this logic further continues or implies, led to the current "war for independence" with Russia) – the opinion has become rather widely spread both between academia, intellectuals and the general public. This opinion is far from being true, it belittles Ukrainians as nation, harms their self-respect, the latter being an important precondition for the victory in the war and future national development. So, laying out an exhaustive, thorough description of the struggle, in the last years of the USSR, for democratization, autonomy and eventually for the independence is an important task for shaping the Ukrainian identity. In this struggle, the Chornobyl Disaster and ecological problems in general (attention to the former was in a great degree evoked by Chornobyl) were among the most highly-ranked issues. It was obvious for the researchers, which looked at the events from a short temporal distance, or/and were witnesses or participants of the events themselves. E.g.,

[1] In this text, the complex of radioactivity and its direct effects will be called "a radiation" for briefness.

a collection of interviews of prominent political figures of the period was named “Ukraine: From Chernobyl’ to Sovereignty”[2] (1992); in a subtitle of a book “Ukraine under Perestroika”[3] (1991) “Ecology” precedes “Economics & the Workers’ Revolt”. In Yaroslav Hrytsak’s recent history of Ukraine (2022) a respective chronological subchapter is named “From Chornobyl to Independence”[4], and it contains an important statement:

> “The topic of Chornobyl became one of the central in the confrontation of Ukrainian [democratic and national] opposition with [Communist] party’s authorities in Moscow and Kyiv. The very notion of “Chornobyl” – a devastating disaster – was more and more often expanded to describe other sides of the life in Ukraine (the topics of “spiritual Chornobyl”, “the Chornobyl of Ukrainian language”)” (p. 539).

Three remarkable traits of the author’s study of Chornobyl

This research project is part of the concluding stage of my several-decade-long study of the Chornobyl Disaster, the study being remarkable for combination of three important traits. First, the researcher is himself a witness and participant of the events studied, and have valuable immediate and insider information about the events, the data may be crucial in research of so novel an object as the radiation and its effects (see Preamble). On the one hand, I am a Chornobyl liquidator and, moreover, a uniquely informed one: in 1986 I was commander of radiation reconnaissance platoon in the Chornobyl zone and thus have intimate knowledge about its radiation and social environment. On the other hand, I am a member of the Chornobyl-affected population, and was able to observe it quite closely from the moment of its appearance.

Kharkiv, where I lived then, though not a capital, was the third-biggest university, scientific and industrial city of the USSR, and the second-biggest city of Ukraine. It happened to have two peculiar traits, extremely useful for the purposes of the study. First, it got quite large population of the Chornobyl-affected, both the veterans-liquidators and the evicted Chornobyl ex-residents. This group was one of the biggest and most active among the similar groups in the cities of the USSR, and produced a well-developed case of the life and social activities of the Chornobyl-affected. Second, Kharkov had large mass of intellectually and socially advanced people, and this circumstance showed itself in the struggle for democratization in the USSR in 1986-1991. I was a witness and active participant of this process. In particular, in 1989, at the first (at least partly) free elections to the highest, parliament-like legislative body of the USSR, I worked in the team of a democratic candidate, and was responsible for the communication with the media.

Second, the study is exceptionally multidisciplinary, and embraces the whole academic spectrum – from hard and natural sciences to social ones and humanities, including history; only such unprecedented combination has proved to be an adequate epistemic tool to treat the Chornobyl Disaster. Third, owing to the insider information and the unbiased holistic approach, the study has turned out to be a pioneering one; after some lag, its principal findings were reproduced in mainstream international studies.

The conceptual foundations

This research directly stems from a project “The Environmental History of the USSR”, initiated by the OSA in 2004 and performed jointly with the CEU Environmental Sciences & Policy Department. In its framework I wrote the first holistic overview of the event, named “Chernobyl: Accident mitigated, disaster perpetuated”[5]. In it, based on the information collected and approach and conclusions of my previous research “Chernobyl liquidators' health as a

[2] Solchanyk, Roman (ed.). 1992. Ukraine, from Chernobyl' to sovereignty: a collection of interviews. London: Macmillan, in association with RFE/RL Research Institute. 174 p.

[3] Marples, David R. 1991Ukraine under Perestroika: Ecology, Economics & the Workers’ Revolt. N. Y.: St. Martin's Press. 243 p.

[4] Hrytsak, Yaroslav. 2022. [Essay on] History of Ukraine: formation of modern nation XIX-XX centuries [*Narys istoriji Ukrajiny. Formuvann’a modernoji natsiji XIX-XX stolitt’a*]. Kyiv: Yakaboo Publishing. 656 p.

[5] Mirnyi, Sergii. 2005. Chernobyl: Catastrophe mitigated – disaster perpetuated. Overview report for the project “Environmental History of the USSR and post-USSR” (Central European University (Budapest), Env. Sci. and Policy Dept, Open Society Archives, 2003-2005)). Manuscript. 40 p.

psycho-social trauma[6]", I suggested the answer to the question "What turned the Chornobyl NPP reactor's accident into a global Chornobyl Disaster?" by giving the following definition:

The Chornobyl Disaster is an accident (1) of radiation nature (2) of unprecedentedly large scale, which happened (3) in a sensitive place of the world (Europe) (4) in a historically crucial moment, and (5) (thus) it has led to important and long-lasting global consequences.

Each component in this definition is likely to be crucial – but radiation appears to be the most important one. It is because **ionizing radiation is the uniquely powerful psycho-social stressor**, around which all other constituents assembled. **The radiation possesses a devastatingly harmful constellation of unique material, psychological and cultural traits**.

In material domain, radiation is the most easily-measured contaminant (because of a huge and specific energy it releases). The fact that its smallest quantities can be measured everywhere, by rather cheap and widely available instruments, both under normal circumstances (the natural background) and in the post-accident period, creates a feeling of its omnipresence. From psychological side, radiation is an invisible hazard, imperceptible by all human[7] organs of senses. This feature exacerbates the feeling of radiation's "omnipresence", and, as all invisible hazards, creates particularly powerful suspense, which, if long enough, leads to distress. The relative novelty of this hazard also incurs additional disstress. In cultural domain, radiation is commonly considered to be deadly, or at least very harmful (and, in particular, in so personally and culturally important sphere as reproduction). This perception partly reflects real features of radiation but is mostly formed by the information impact of WW2 nuclear bombardments and anti-nuclear-war propaganda during the Cold War. A yawning lack of knowledge (of "quantitative culture") and of cognizant practical experience due to the novelty of this hazard further exacerbate the situation. All above circumstances create **a self-perpetuating circle, an avalanche-like type of psycho-social reaction to the radiation hazard**. It is useful to keep this in mind while studying the impact of events, involving radiation, on the individuals, their groups and society.

The last issue, potentially helpful for this research, is the idea that "the important and long-lasting global social consequences" include, rather paradoxically, not only negative but also quite a few positive ones. The Chornobyl Disaster effectively ended the global nuclear arms race, the nuclear tests, the Cold War and thermo-/nuclear confrontation, which could erase the life from the Earth; for decades, it eliminated the threat of thermo-/nuclear war. The nuclear industry, which had before Chornobyl proliferated in a rapid and rather irresponsible manner, was put under public control and severely limited; its present revival, approximately four decades later, is based upon much safer technologies, improved control, monitoring and communication. Chornobyl dramatically increased environmental awareness and activity, both globally and within the USSR, and led to massive ecologic movements. The list can be continued but I want to conclude it for now with a statement that the Chornobyl Disaster also boosted the democratization processes in the USSR (which were at the time of the Chornobyl explosion was at the initial, very unsure stage), and eventually led to quick and (because of this?) practically peaceful disintegration of a huge, threatening nuclear totalitarian empire of the USSR.

The research hypothesis

Two important preliminary remarks. (1) Of course, the contribution of the Chornobyl Disaster effects into the USSR's disintegration can't be quantitatively assessed. The goal of this study is to provide a qualitative picture of the social processes, unfolding in the USSR in its last years. In it the events, directly of highly probably connected with Chornobyl, are brought to foreground. (2) The research hypothesis was changed – specified – In the course of the fellowship. First, the target time period has been narrowed (see below). The demise of the

[6] Mirnyi, Sergii. 2001. Chernobyl Liquidators' Health as a Psycho-Social Trauma. Budapest: Bogar Kiado. 192 p.

[7] And of all other live organisms, for that matter. It appears that the organ, which could directly sense radiation, turned out to be not important for survival – perhaps, due to a good adaptation to the ionizing radiation during the whole course of the evolution.

USSR has been more accurately addressed as a “disintegration” since it was, despite being an extraordinary event, a politically controlled process (but not a chaotic “collapse”). Also, the initially intended systematic comparison of the Chornobyl-related social processes in Ukraine and Russia of that period was eliminated from consideration since it proved to be a separate, quite extensive task.

The final research hypothesis is as follows.

The explosion, with full subsequent destruction, of the nuclear reactor at the Chornobyl nuclear power plant (1986.04.26) and its aftermath directly endangered the Soviet people, thus radicalized large populations, and triggered grassroots social activities and hesitations of the authorities. Broadening and strengthening, the evoked social activity culminated in the heated elections to the top legislative body of the country in 1989. In this parliament, for the first time in the USSR for more than half a century, a democratic opposition emerged, and its activities become a driver of the next stage. Centrifugal and democratic processes at grassroots and elite levels, converging and overcoming the resistance of the conservative antidemocratic forces, ended in the disintegration of the USSR.

The research process

The research at the OSA has turned to be very productive and inspiring due the combination of its several components, some of them rather unexpected and non-apparent. Below I will list them in, so to say, “the order of appearance”, and briefly describe their positive effect of the research.

My thrilling epistemic adventure at the OSA rather unexpectedly started from the OSA Book collection, which was the first to catch my eye (literally, since it is located at the Research room and the OSA premises). The comprehensive record of events in the USSR in 1989[8], based on the RFERL materials and compiled by its worker, presented a rolling social ocean of events of most diverse agenda and scale, unfolding at the huge space from the Baltic and Black seas to the Pacific ocean, from the North ocean to the southern Soviet Central-Asian national republics. In this picture, the [1st] “Convention of People’s Deputies of the USSR”[9] – both its election and particularly ensuing sittings and other activities, and their effects – played a prominent role. At this background, the events connected with the Chornobyl Disaster or environment did not appear to be particularly remarkable. This feeling was reinforced by acquaintance with a volume, also from the OSA Book collection, of interviews with Ukrainian prominent figures of the last years of the USSR, recorded and prepared by the RFERL staff[10]

At this point of the research, the next OSA component turned out to be very handy – namely, an OSA exhibition of the OSA collection “Winning Freedom: Ukraine, 1989–1991”[11]. It showed many sources and massive events of the last three years of the Soviet Union, which led to Ukrainian Independence; again, Chornobyl was not particularly prominent here.

The exhibition was curated by Katerina Belenkina, my extremely helpful and knowledgeable advisor during the fellowship. She explained that the temporal range of the exhibition had been chosen exactly because during 1989-1991 the movement toward the Ukrainian Independence and USSR’s disintegration was already quite apparent, massive, it had plenty of events of large scale and importance, many of them being visually and emotionally appealing. This communication finalized my decision to review the target period of the research. It was narrowed to the period of 1986-1989. It was one of the most obvious effects of great many of what I would call the OSA intellectual environment, which manifested itself in many other formal and unformal settings, and particularly in the framework of my “Visegrad Scholarship at OSA” presentation. To complete the list of positive non-apparent components of the OSA environment, which are not part of the archival collection, I would like to mention an inspiring spiritual air of the archives – that of a passionate, persistent, intelligent research – a critical component to make the project successful.

[8] The USSR in 1989: a record of events/compiled by Vera Tolz; edited by Melanie Newton; foreword by Vladimir G. Treml. Boulder: Westview Press, 1990. 740 p.

[9] *Sjezd narodnyh deputatov*, in Russian.

[10] See ref. at Footnote 2.

[11] OSA. 2024. Winning Freedom: Ukraine, 1989–1991. Collection, curated by Katerina Belenkina. https://ukraine.89-91.osaarchivum.org/

The OSA archival collections on Chornobyl, its multifaceted effects, and related issues are outstandingly extensive –perhaps, even exceptional. In this research *the subject files "Chernobyl" of RFE/RL Research Institute's Analytic Research Department* turned out to be of the key importance. They cover the period from the first post-explosion days[12] to long after the USSR demise. The *holdings on more specific aspects* of Chornobyl, like *"Environment: Chernobyl"*[13], *"Disasters: Chernobyl"*[14], *"[Ecology: Chernobyl]"*[15], *"Atomic energy: Chernobyl"*[16], *"Atomic Energy: Accidents, Chernobyl"*[17], much aided in arriving to more broad, multifaceted picture of the process.

The series of video interviews with Chornobyl survivors[18], conducted *by Svetlana Alexievich and Tatiana Loginova*, conveyed the scope of human suffering and the spectrum of emotions and thoughts evoked. It was essential not only to follow the events but to see the direct human reasons, which had been behind the concrete social and political activities in the waning years of the USSR.

The Soviet Media Digest Files[19], in particular *on Ukraine* (e.g., [20]) and *ecology*, showed how the topic of Chornobyl and connected environmental issues evolved in the Soviet media, gradually shifting from the strict, 100% censorship to more and more free dissemination of the information on the subject. On the Disaster's anniversary and in the period before and after it, the topic particularly peaked, its "height" increasing with each year; the news reports started to reflect the first public actions, their scope and importance increasing. *The Situation Reports of the RFERL Research Institute*, e.g. on the Baltic republics[21], much aided in navigation in the unfolding stream of the events.

The *Background Reports*[22] summed up and analyzed the situation at certain points of time. They evolved from the first, rather general opinion[23] about the style of initial reactions to the explosion from the authorities of the Soviet Union and its satellite "socialist countries" – to

[12] Chernobyl, 1986 - 1986; HU OSA 300-50-1:1034/1; Old Code Subject Files; Polish Unit; Records of Radio Free Europe/Radio Liberty Research Institute; Vera and Donald Blinken Open Society Archives at Central European University, Budapest.

[13] Environment: Chernobyl, 1984 - 1988; HU OSA 205-2-20:40/7; Subject Files of Dan Ionescu; Research and Analysis Department; Records of the Open Media Research Institute; Vera and Donald Blinken Open Society Archives at Central European University, Budapest.

[14] Disasters: Chernobyl, 1986 - 1986; HU OSA 300-85-12:126/8; Subject Files; Samizdat Archives; Records of Radio Free Europe/Radio Liberty Research Institute; Vera and Donald Blinken Open Society Archives at Central European University, Budapest.

[15] [Ecology: Chernobyl], 1986 - 1986; HU OSA 300-85-44:34/15; Unpublished Samizdat: Subject Files; Samizdat Archives; Records of Radio Free Europe/Radio Liberty Research Institute; Vera and Donald Blinken Open Society Archives at Central European University, Budapest.

[16] Atomic energy: Chernobyl, 1986 - 1986; HU OSA 300-80-1:58/1; Old Code Subject Files; Soviet Red Archives; Records of Radio Free Europe/Radio Liberty Research Institute; Vera and Donald Blinken Open Society Archives at Central European University, Budapest.

[17] Atomic Energy: Accidents, Chernobyl, 1986 - 1987; HU OSA 300-120-3:23/3; Subject Files; Western Press Archives; Records of Radio Free Europe/Radio Liberty Research Institute; Vera and Donald Blinken Open Society Archives at Central European University, Budapest.

[18] Interviews with Chernobyl Survivors; HU OSA 331-0-2. https://catalog.archivum.org/catalog/OoMaG9RL

[19] Soviet Media Digest Files; HU OSA 300-81-4. https://catalog.archivum.org/catalog/OAeRAKJR

[20] Ukraine Today: Soviet Media Digest, 1987-04-22 - 1987-05-18; HU OSA 300-81-4:9/1; Soviet Media Digest Files; Monitoring Unit; Records of Radio Free Europe/Radio Liberty Research Institute; Vera and Donald Blinken Open Society Archives at Central European University, Budapest.

[21] Situation Report: Baltic Area, 18 July 1986, 1986-07-18; HU OSA 300-8-47:1/7-4; Situation Reports; Publications Department; Records of Radio Free Europe/Radio Liberty Research Institute; Vera and Donald Blinken Open Society Archives at Central European University, Budapest.

[22] Background Reports; HU OSA 300-8-3. https://catalog.archivum.org/catalog/j5L8L6lR

[23] A Return to Normality in Eastern Europe?, 1986-05-16; HU OSA 300-8-3:119/1-24; Background Reports; Publications Department; Records of Radio Free Europe/Radio Liberty Research Institute; Vera and Donald Blinken Open Society Archives at Central European University, Budapest. Available at https://catalog.archivum.org/catalog/qmv20yJEWL

rather detailed overview of them in "the Eastern Europe"[24]. The latter concept embraced not only non-Soviet "socialist" European countries but also the Baltic republics of the USSR. At this stage, despite the enormous initial public shock and outrage, the suppressed democracy prevailed: at all this "socialist" space, including the Baltic republics (later the leaders on the way to democratization in and independence from the USSR), everything was quiet at the surface – except for Poland, where the public protests (though not large) sprung almost immediately.

The Samizdat Archives within the Records of RFERL Research Institute produced a rather valuable find – two directories of novel, emerging social actors in the USSR, namely NGOs, which had been then called "informal/unofficial organizations"[25]. The first directory[26] embraces all Soviet Union and all types of NGOs, the second[27] – only the Russian Federation and only socio-political NGOs, though ecological organizations were included too "only if they deal with socio-political problems". The dates of the both registers are a near-perfect match: 1988 and January (with some supplements on June) of 1989. The directories form a valuable database, which can be regarded, within this research, as a certain bottom-line, final result of emergence of a new important type of social actors, centers of social activity, – which, significantly enough, had already institutionalized themselves enough to be listed. Chornobyl, ecology and environment were in the agenda of large number of these newly-emerged NGOs. At the next stage of the research the directories will be analyzed in thorough detail and statistically processed.

Induction period: a notion

The picture of the processes in the Soviet Union in its last years, which emerged from my study of the OSA collections and from communication with the colleagues in the OSA, coincided with my direct personal observations of the social dynamics in those years, – and suddenly reminded me of a notion from my first profession, chemistry.

In chemical processes (they are called "reactions"), sometimes an interesting phenomenon is observed. The reaction has already started – the experimenter knows it for sure (the reagents are mixed, or the heating is applied, etc.) – but no apparent effects are observed or detected. And then, after some period of apparent inactivity, – the process starts to develop in a rather rapid, bustling way. This initial period, during which the process, though already underway, is invisible, hardly detectable (particularly as compared with the next rapid stage), was named the induction period. It is schematically shown at the graph below.

The period of 1986-89 in the USSR was rather quiet, though it was obvious that, as compared with the previous period of *zastoj*-"stagnation", "the process has started to run[28]", to use Gorbachev's own famous saying. It looks like an "induction period" before the next, stormy period of 1989-1991. It would be ideal to check this assumption using the data, collected in the course of this research at the OSA. However, at this stage of the study, it is hardly feasible due to the limited time of the fellowship, large amount of the material collected, and necessity at first to design and justify the criteria for selection of the data to be reflected at the vertical axis. That is why I performed an express-check of this hypothesis using the chronological list of events,

[24] Eastern Europe and Chernobyl: The Initial Response, 1986-05-23; HU OSA 300-8-3:69/6-12; Background Reports; Publications Department; Records of Radio Free Europe/Radio Liberty Research Institute; Vera and Donald Blinken Open Society Archives at Central European University, Budapest. Available at https://catalog.archivum.org/catalog/qmv20MLEWL

[25] *Neformal'nyje organizatsii,* in Russian.

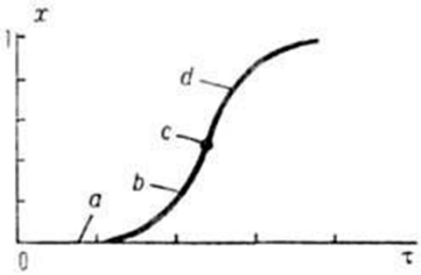
[26] RL/AS 52. Moscow Popular Front: USSR Amateur Social Organizations. Handbook, 1988 - 1988; HU OSA 300-85-37:1/43; Registered Unpublished Documents; Samizdat Archives; Records of Radio Free Europe/Radio Liberty Research Institute; Vera and Donald Blinken Open Society Archives at Central European University, Budapest.

[27] Information Agency of Free Inter-Professional Union of the Workers (IA FIUW; IAF [*IA SMOT*; *IAS*]): Directory of Informal Social Organizations [NGOs] and mass media of 137 cities [of Russia]. [Information bulletin No 16]; 1989; HU OSA 300-85-9:150; Registered Unpublished Documents; Samizdat Archives; Records of Radio Free Europe/Radio Liberty Research Institute; Vera and Donald Blinken Open Society Archives at Central European University, Budapest.

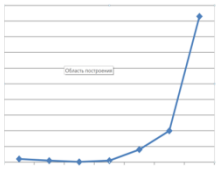
[28] *"Процесс пошел" (Rus.).*

relevant to obtaining the Ukrainian independence, from the recent book of Oleksandr Zinchenko[29].

At the picture below the first curve is a generalized scheme of the chemical process with an induction period (the segment *0-a*); the second represents, as a very rough estimate, a number of pages in the chronological list, corresponding to the each year starting from 1985 (when Gorbachev came to power, and proclaimed necessity of essential socio-economic changes, calling it *Perestrojka*, literally “Redevelopment”, “Restructuring”) to 1991 (when the USSR ceased to exist). Observed is a rather remarkable congruence.



In chemistry



Events of 1985-1991

This near-perfect match prompts more detailed look at the causes of the induction period in chemistry. There the established principal regularities can be summed up, in the most general terms, in a couple of statements:

- The easier the particles, which eventually react, activate (that is, transfer from a passive, inert state to an agitated, (re)active one) – the shorter is the induction period.
- During the induction period, occurs the initial accumulation of:
  - active centers, e.g. chemical radicals (for chain reactions, in which each act/interaction causes one or several subsequent ones), or
  - the products of the reaction (for autocatalytic reactions, in which the products of the process catalyze, accelerate it; hence the more of the products are present – the larger is their accelerating influence at the unfolding process – the more rapid, productive is the process).

It appears that the above well-established formulations, with minimum change of the terminology, can be directly applied to social processes. In the research project’s proposal, I used the term “catalyzer”, which originates from chemistry and means the substance, which (usually quite essentially) accelerates-“catalyzes” the process, in an indirect, metaphorical meaning. Hardly could I imagine that will this nice analogy transpire in so fine a detail in the studied phenomenon of a totally different nature.[30]

Main preliminary findings

The principal conclusion of the study is that the Chornobyl Disaster (1986-), the notion embracing the explosion and radioactive release, and their secondary and tertiary effects, was likely to be a trigger of the first, induction period of the disintegration of the USSR. This induction period culminated, in the spring of 1989, in an unprecedented, as for the degree of

[29] Zinchenko, Oleksandr. 2024. How Ukrainians demolished the evil empire [*Yak Ukrajintsi zrujnuvaly imperiju zla*]. Kharkiv: Vivat. 558 p.

[30] I cannot help concluding the chapter with an ironic (meta-)remark. It seems that this research also follows (meta-?)regularity, which was mentioned by Prof. Hayden White as belonging to Dominic LaCarpa; it is that the basic traits of the research object inevitably reproduce themselves in the features of the research process. Indeed, the research reported here had what appeared to be rather slow start. It was partly due to rather extreme external circumstances (the majority of them connected with the war in Ukraine), partly because of the vast number and diversity of the sources available, and partly because of the complexity of the object studied. The latter two circumstances required extra resources to arrive to the adequate overarching concept, the one that is not forcibly imposed on the phenomenon dealt (as it, unfortunately, often happens with a novel phenomenon of Chernobyl) with but naturally emerges from it.

freedom and mass involvement, elections to the Convention of People's Deputies of the USSR, and ended with the start of the Convention[31]. The list of concrete triggering processes and phenomena is rather extensive, and is presented below.

The Chornobyl Disaster evoked in large populations a massive fear of being irradiated in a lethal or at least harmful degree, the fear overwhelming a traditional, deeply rooted fear of the Soviet repressive regime. The perception of Chornobyl radiation as a personal threat agitated almost entire (or at least the overwhelming majority of) population of the USSR. Under-informing and outright misinforming the population by the Soviet authorities badly undermined the credibility of the latter; it multiplied the (already existing for a long while) distrust of the Soviet citizens to what the regime said and did.

Chornobyl penetratingly demonstrated (particularly in combination with the series of other disasters and accidents of the period) critically important and personally perilous flaws of the Soviet system of government. The consequences of those flaws started to be perceived by people as bearing more personal risk than the actions against the flaws of the system;

The Disaster gave birth to the first broad and simultaneously tight-knit communities, critical of the Soviet power. Those were of the Chornobyl-affected, united with a traumatic Chornobyl experience and economic interest in getting compensations for it. It was, probably, the first massive, truly popular dissident movement in the USSR. This emerging element of the civil society later evolved into the NGOs and political parties.

The Chornobyl contamination of the environment, in combination with a host of grave, concrete, personally perilous ecological problems, accumulated over the decades in the USSR, evoked deep emotions and ensuing massive actions. In addition, Chornobyl and ecological topicality provided both excellent justification and disguise for social movements, which contained underlying political agenda.[32]

The Chornobyl radiation, which "defected" from the Soviet Union, escaped its borders – paradoxically, opened them. At first, for the free-world, for the "Western" influence on the internal USSR matters. Gradually, for the streams of information from the USSR to the world, and in the opposite direction[33]. In this respect, very demonstrative is the comparison of Chornobyl with Kyshtym/"Mayak" radiation contamination accident at the Urals in 1957. The latter, then the biggest in the world (in peaceful time), was located deep in the country, its radiation releases were not detected by the foreign countries, – and thus this important radiation event had practically zero impact on national and international history.

Extreme international and national pressure to obtain information about the Chornobyl event and its hazards extended the limits of the freedom of information. The process evolved from absence and suppression of this essential, basic freedom – via its very limited variety of "*glasnost'*" [a kind of permission to voice the concerns], rather formally proclaimed by Gorbachov, – to gradual elimination of censorship. In turn, it resulted, in particular, in accumulation of more and more information about the tragic and terrible events in the USSR past, and about the current disasters, accidents and in general problems of the USSR and its

[31] Since its start, at the Convention meetings, for the first time in the lifetime of several Soviet generations, there was an almost full freedom of speech. It was rather frequently exercised by the members of the democratic opposition, outnumbered but very active, protected from persecution (again, for the first time in the lifetime of several Soviet generations) by their legal status, that of the members of the parliament. The meetings were aired live on radio and TV all over the Soviet Union, and very intently listened by the population; the individual with a portable transistor radio set near the ear was a common, frequent sight at the streets and in the public transport. The Convention, both its sittings and extra-chamber activities, became a driver and itself a part of social processes of the next period, – which ended in 1991 with the disintegration of the USSR.

[32] Anatolij Podobajlo, biologist, during the last years of the USSR – student and activist:
"…the nature-protection movement … had a national connotation – for after the Chornobyl Disaster it was safer to protest, raising ecological issues. … Say, recent protest in Bashkortostan [in the RF] – it is exactly post-Chornobyl revolution of ours [in Ukraine]. The Bashkirs protested to save the nature, some sacred mountain of theirs. But the context is definitely national." *Ukrajins'ka Pravda*, 2024.06.07.
https://www.pravda.com.ua/articles/2024/06/7/7459565/

[33] E.g., the Soros "Soviet-American Foundation "Cultural Initiative"", his first foundation in the USSR, was established in 1987.

society. One can justly state that it indeed was a self-perpetuating, self-(and other concurrent processes)-expanding – truly an “autocatalytic”, self-accelerating – process.

Next steps of the research

The fellowship helped to surface an intricate and extensive web of interactions and phenomena related to the object of the study, it led to interesting and daring generalizations. Additional analysis of the large array of materials, which I collected in the OSA, is required to reinforce and substantiate the conceptual framework emerged. The attempts to numerically, quantitatively process the data will be undertaken.

Furthermore, it appears to be desirable to support the findings presented above with additional sources from the collections of the National Museum “Chornobyl” (Kyiv), the Ukrainian libraries (first of all, newspapers and magazines of April-May 1987-1989), and of archives, museums and private collections in Kharkiv.

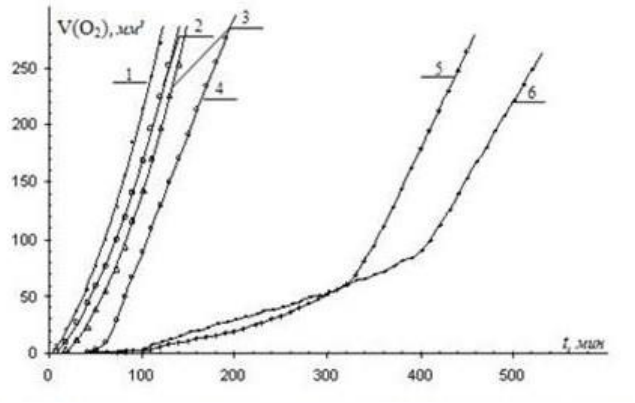
The helpful final step before preparing publications on the topic seems to be preparation of the chronology of directly Chornobyl-evoked (incl. grassroots) events in 1986-1989. Some kind of its semi-quantitative treatment looks like an intriguing and promising research enterprise.

Application of the research results

The results of the fellowship are expected to be presented as papers at an international academic journal, and at several conferences. They are likely to form the conceptual basis for a panel at one of the conferences, devoted on the 40th Chornobyl anniversary in 2026.

The findings will be incorporated as a subchapter of the chapter on the positive consequences of the Chornobyl Disaster in my final academic book on the topic, “Chornobyl as Victory”. They will be definitely reflected in excursions and a new exposition at the National Museum “Chornobyl”.

Coda
A thought-provoking image



I cannot help but put here a thought-provoking image, which I run into during this research. It is a graph, which shows how the chemical reaction unfolds under varying circumstances. Despite being far from direct, vulgar analogy of so different phenomena as material particles and their assemblies, and human beings and their social assemblies, – looking at this graph, I cannot help thinking that similar image can be a useful epistemic tool to reflect dynamics of social processes in different societies after a certain triggering event.

What the vertical axis can represent? Number of the public actions? Of the people involved? Of political symbols in the public spaces – the eliminated old, the appeared new?

The curve 1, with no induction period, apparently can represent some democratic country: there is an unsuppressed, developed civil society with ready structures and established pathways for reaction; the response is almost immediate (e.g., recent “far-right” riots in the UK in response to a mass stabbing and (intentional?) misinformation about the identity of the

perpetrator[34]). The next two represent almost similar behavior, though with a small, rather short induction period – which can be attributed, by the way, to the traits of the trigger event itself, as this research prominently suggest. The curve 4 can be explained by either less mature civil society, or more suppressive government of the country (or both), or, as mentioned before, by the peculiarities of the trigger event.

The last two curves – 5 and 6 – perhaps, should represent undemocratic, suppressive state regime and/or the civil society, which, aroused by the trigger event, develops only during the ensuing social process. What we see in those cases is a long induction period of apparent absence of reaction, followed by a gradual slow rise, – and then, with a somewhat differing delay, a "breakthrough" (expanding, by the way, more gradually than for the first, "democratic" curves… or is it just because of a larger size of the country?). Which of those two last countries can be Iran, and which – Russia? And when?

[34] Ostal'skiy, Andrey. 2024. With Russian participation? Andrey Ostal'skiy on pogroms in the UK [*S russkim uchastijem? Andrey Ostal'skiy – o pogromah v Britanii*]. Radio Liberty, 2024.08.05. https://www.svoboda.org/a/s-rossiyskim-uchastiem-andrey-ostaljskiy-o-pogromah-v-britanii/33065769.html