



Historical Article

I Felt Reborn (Primo Levi): From the Nobel Dynamite Factory to a Remembrance Place

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*The Periodic Table*¹ by Primo Levi has been designed by the Royal Institution of Great Britain “the best science book ever written”.² Indeed, in this book there is a perfect mixture of science, allegory, chemistry, life, memory, history and human experience. The book is built as a collection of chapters or stories each entitled with an element of the very periodic table by Mendeleev: in total 21 elements each recalling a life experience of the author, the chemist and writer Primo Levi, an author famous in the world as one of the most important witnesses of the Shoah. Primo Levi was born in Turin on July 31st, 1919 to two Jewish families of Provence (France) and Spanish origins. Immediately we discover in his childhood, adolescence, and youth a first paradox of the fate: he could not attend with constancy the primary school due to the very precarious conditions of his health, the same health that in the future will reveal fundamental for his survival in the lager. From 1934 Primo attended the High School Liceo Classico “Massimo D’Azeglio” in Turin where got his baccalaureate in 1937: second paradox of the fate, he didn’t succeed in passing the exam of Italian literature – he had to pass a supplementary exam – the subject that made him famous in all the world. In the same years he started to attend the Chemistry Faculty at the University of Turin. In 1938 the Italian government under the Fascist tyranny of Mussolini promulgated the “racial laws” imitating the German anti-Semitism actions. These laws prohibited the University studies to young people of “Jewish race”, but allowed them to conclude their studies if they already attended University courses at the coming into force of them. Therefore, Primo Levi succeeded in graduating in Chemistry in 1941 discussing a thesis on the Walden inversion with the grade 100/100 cum laude.³ In the following two years he worked as chemist in an asbestos quarry close to Turin to extract nickel from the waste of asbestos production and then he moved to Milan to work in a Swiss drug factory. During this period he wrote two little tales – *Nickel* and *Chromium* – that successfully will go to constitute two chapters of the book *The Periodic Table*. In 1943 he joined a Resistance fighting brigade against the Nazi-fascists in Valle D’Aosta, but in December 1943 the fascist militia arrested him and he was imprisoned in a transit concentra-

tion camp at Fossoli close to Modena. On February 22nd, 1944 Levi, together with other 650 Jewish prisoners, was crowded in a supply train and taken to Auschwitz lager (Buna-Monowitz) where he remained until January 27th, 1945 when he was liberated by the Russian Army together with only 20 of the 650 calamity companions. At Auschwitz he was registered with the number 174517 which is now carved on the gravestone that remembers him at the Jewish camp of the Monumental Cemetery in Turin. Since he was a chemist and knew reasonably well German, due to his chemical studies at the University, towards the end of 1944 he was recruited to work as a chemist in a factory close to the camp, called Buna, which produced synthetic rubber. During this last period, together with a friend working with him, Alberto Dalla Volta, succeeded in earning a living selling flints for cigarette-lighters, that they succeeded in preparing in the chemical laboratory from some cerium-iron little rods used to ignite the flame of the oxyacetylene torches. This real story originated the chapter *Cerium* of the same book *The Periodic Table*. Some days before the liberation of the camp by the Russians he fell ill by scarlet fever and therefore he was abandoned in the sickroom called Ka-be (from the German *Krankenbau*, camp sickroom) by the Germans in fight. His friend Alberto had already contracted this disease and due to the immunity memory didn't fall ill and was compelled to follow the Germans in fight: "Alberto didn't return and no trace remains of him." The homeward journey was long and turbulent and ended after nine months in October 1945: it will be narrated in the book *The Truce* published in Italian in 1963.^{4,5} The experience of the concentration camp profoundly shocked him physically and psychologically. After recovering the health he started to work in a paint company – and this paint company named Duco will be at the centre of this contribution since it had been in the past a Nobel dynamite factory–



Figure 1. Primo Levi writing an article. By courtesy of Lisa and Renzo Levi.

and during this period he met Lucia Morpurgo who then became his wife. During this period he devoted feverishly himself to the writing of a book that was witnessing of his experience at Auschwitz and that will be entitled *If this is a man*.⁶ An important role in reinforcing the idea to write his memories of the terrible experience in the lager is attributable to the date with his future wife as he declared some years later stating that she succeeded in allowing him to pass from the painful perspective of a convalescent to that described by himself in *The Periodic Table*: "a work by a chemist who weighs and divides, measures and judges on the basis of firm evidences, and strives to answer the whys and wherefores".

In 1947 he published this book with the little publisher De Silva – the great publishing house Einaudi refused the book – without any success: of the 2,500 copies only 1,500 were sold and mostly in Turin. At the beginning of 1950s he was engaged by the Siva company which produced paints: after some years he became Director and remained there until retirement in 1975. For more than ten years Levi did not write any book and dedicated himself completely to chemistry.

In 1956 Levi participated in Turin to an important exhibition on the lager deportation where he had great success as witness and he started to attend many meetings in the schools where he received sincere sympathy from the audience. Einaudi decided to print *If this is a man* and this time the success was amazing: immediately the book was translated in English and German under the supervision of the author. Encouraged by the success of *If this is a man*, in 1962 Levi started to write *The Truce*, where he narrated his turbulent return to Turin after the liberation of the camp. The book was published in 1963 and soon gained an important prize, the *Premio Campiello*. In the following literary production he was inspired by his experiences as a chemist, by the observation of nature, and by the impact of science and technology on the daily life. The most representative book of this inspiration was *The Periodic Table*, translated in many languages and defined by the Royal Institution of Great Britain the greatest book for the popularisation of science in the world. On April 11th, 1987 he died falling down from his home stairwell. This episode gave rise to the suspect he took his own life.

Apart from the very famous books above mentioned, *If this is a man* and *The Truce*, two of the most impressive witnesses of the Shoah, the rest of the literary work by Primo Levi is strictly linked to his way of reading the reality as a chemist. In *The Periodic Table*, as stated at the beginning, autobiographic episodes and fiction tales are associated to single chemical elements, each constituting a chapter of this book. Saul Bellow declared: "the book it

is necessary to read next. After a few pages I immersed myself gladly and gratefully. There is nothing superfluous here, everything this book contains is essential. It is wonderfully pure, and beautifully translated ... I was deeply impressed". Maybe the story of the paint factory called Duco where Primo Levi had the first employ after the Second World War and his terrible experience in the lager is not well known to many people and this is the reason why I decided to write this contribution remembering Alfred Nobel work and life. Using an expression coined by Levi – “stealing others’ trade” – I, chemist as Levi, would like to narrate the story of the Nobel dynamite factory in Avigliana close to Turin that became a remembrance place, retracing a chapter of *The Periodic Table, Chromium*, seemingly so distant from Nobel and really strictly connected and married into.

In 1872, when the law on the abolition of the government monopoly on the explosives fabrication was promulgated, the *Nobel Dinamite Anonymous Society* in Hamburg decided to found close to Avigliana near Turin a dynamite factory that was called in Italian the *Dinamitificio Nobel* and therefore the dynamite industry was

born in that place in that time. The site was selected for security and safety reasons that were necessary for the type of manufacture. Now in the Avigliana territory, in the lower part of the Susa Valley, we can find the monumental remains of the most important explosives factory ever created in the 20th century.⁷

The complex, that represents one of the most significant and interesting examples of architectural industry at the beginning of the 20th century, hosted for more than ninety years (from 1872 until 1965) the most important explosives factory in Europe. It was built by the initiative of a group of five bankers from Paris and of the Alfred Nobel Society in Hamburg. This Society chose this site probably due to two reasons: the important location on the communication axis with northern Europe and the proximity to the railway lines and, maybe mainly, because of the alternation in the territory of flat regions and hill zones that allowed protection of the built-up area from the deflagrations that could be caused by the activity of such industry. In 1908 the Nobel Society purchased other grounds in the surroundings from the Carvotto family to produce new types of explosive powders. In 1925

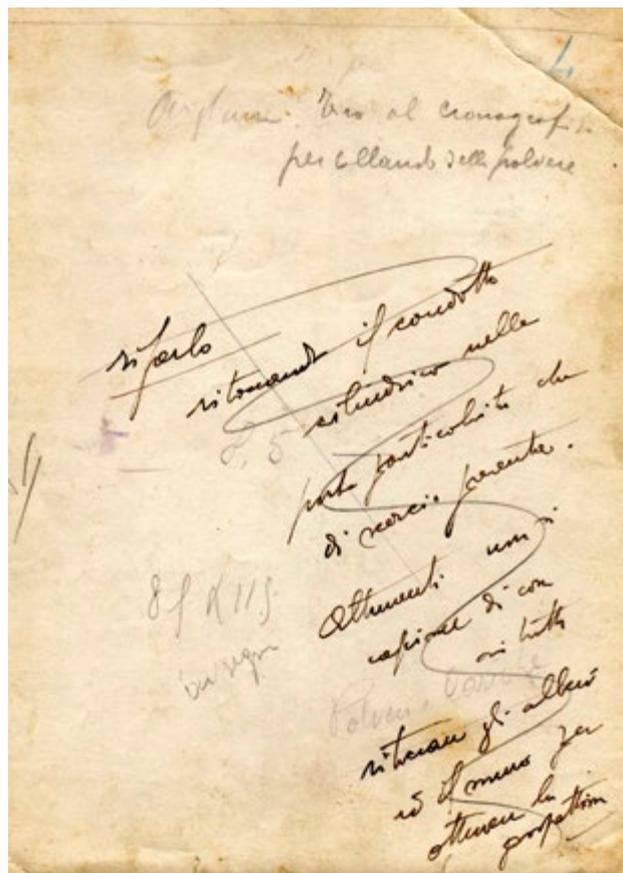


Figure 2. Verso and recto of a photo portrait of a worker engaged in the test of the gunpowder. By courtesy of Ermis Gamba.⁸

from the small department of the first-born plant called Valloia, thanks to a patent of the American Dupont, the little factory of paints Duco got underway; this complex then merged into the big national Group Montecatini constituted in the frame of the great Italian chemical research lead by the future 1963 Nobel Prize winner, Giulio Natta. During the World War II the area was subjected to bombing and war actions by the Resistance fighters. The successive crisis of the military orders and the changing of the urban planning requirements caused the progressive decay of the industrial complex until the stoppage in 1965: now the remains host a Museum.

A part of the Nobel dynamite factory was destined to host, since 1925, a factory of paint,

« ... a large factory on the shores of a lake, the same on which I had learned the rudiments of the varnish-making trade during the years 1946-1947. »

In this factory Primo Levi had his first employ as chemist after the end of the darkness of our continent. In January 1946 all Europe was trying to rebuild new life in peace with strong difficulty: meat and coal rationed, no cars in the streets, but hope and freedom warmed up the people. The period was very difficult even for the chemist Primo Levi: indeed, he felt something different from the others when he started to work close the factory that had produced so many weapons, the Nobel dynamite factory in Avigliana. These were his feelings:

« The things I had seen and suffered were burning inside me; I felt closer to the dead than the living, and felt guilty at a being a man, because men had built Auschwitz and Auschwitz had gulped down millions of human beings, and many of my friends, and a woman who was dear to my heart. It seemed to me that I would be purified if I told its story, and I felt like Coleridge's Ancient Mariner, who waylays on the street the wedding guests going to the feast, inflicting on them the story of his misfortune . »

The Nobel factory was the place where the survival Primo tried to build his new life: indeed he would never succeed in building a new life. His life ever remained sharply splitted in two: before Auschwitz and after Auschwitz. Nevertheless, in that paints factory day by day he started to live again, to reborn. But at the same time this rebirth was accompanied by the reconstruction of the memory, the remembrance of what he had seen and for which he started to build his role of witness. This rebirth is extraordinarily expressed and condensed in his literary art in the tale *Chromium*:

« I, unoccupied as a chemist and in a state of utter alienation (but then it wasn't called that), was writing in a haphazard

fashion page after page of the memories which were poisoning me, and my colleagues watched me stealthily as a harmless nut. The book grew under my hands, almost spontaneously, without plan or system, as intricate and crowded as an anthill. »

The book that Levi was talking about is the very famous *If this is a man*. Therefore, the Duco paints factory just in the same environment of the Nobel dynamite factory is the place where Primo Levi wrote, in a wonderful manner as described above, one of the most marvelous book of the world literature. Primo Levi started to work as a chemist and in the meantime to become one of the most famous writer in the world. The Nobel factory witnessed the metamorphosis of a man who had become not-a-man, and that gradually was becoming again a man. Now we know that this second man was no longer like the first one and maybe after many years matured in his mind the thought to draw a close to his days as man / not-a-man / man / no-longer-a-man by returning to nothingness. However, the destiny had decided that this reconstruction of a man from a prisoner had to occur there and that love had to have a beautiful role ...

« Now it happened that the next day the destiny reserved for me a different and unique gift: the encounter with a woman, young and made of flesh and blood, warm against my side through our overcoats, gay in the humid mist of the avenues, patient, wise, and sure as we were walking down streets still bordered with ruins. In a few hours we knew that we belonged to each other, not for one meeting but for life, as in fact has been the case. In a few hours **I felt reborn** and replete with new powers, washed clean and cured of a long sickness, finally ready to enter life with joy and vigour; equally cured was suddenly the world around me, and exorcized the name and the face of the woman who had gone down into the lower depths with me and had not returned. My very writing became a different adventure, no longer the dolorous itinerary of a convalescent, no longer a begging for compassion and friendly faces, but a lucid building, which now was not longer solitary; the work of a chemist who weighs and divides, measures and judges on the basis of assured proofs, and strives to answer questions . »

The absolute original style of writing was germinating in that place: literature that draws ideas, reasoning, and narrating "contraptions" from chemistry and that has made this character of the world literature a kind of *unicum*. The way of remembering the dreadful experience of the Holocaust with an aseptic method that vivisects the events like the scientist analyses the matter and its transformation. This metamorphosis is perfectly explained by the very author in the same tale:

« Alongside the liberating relief of the veteran who tells his story, I now felt in the writing a complex, intense, and new

pleasure, similar to that I felt as a student when penetrating the solemn order of differential calculus. It was exalting to search and find, or create, the right word, that is, commensurate, concise, and strong; to dredge up events from my memory and describe them with the greatest rigor and the least clutter. Paradoxically, my baggage of atrocious memories became a wealth, a seed; it seemed to me that, by writing, I was growing like a plant. »

I believe that now is clear why I decided to entitle this contribution “*I felt reborn* (Primo Levi): from the Nobel dynamite factory to a remembrance place”. In a certain sense dynamite, chromium, chemistry, the job of the chemist are all strictly connected with matter, but the way to treat chemistry treats matter can be exactly the same people deal with human events: this is the strong Primo Levi’s lesson. The quintessence of this concept is well articulated in the last quotation I would like to add from the tale *Chromium* by *The Periodic Table*:

« It is the spirit that dominates matter, is that no so? Was it not this that they hammered into my head in the Fascist and Gentile Liceo? I threw myself into the work with the same intensity that, at not so distant a period, we had attacked a rock wall; and the adversary was still the same, the not-I, the Button Molder – a character in Ibsen’s Peer Gynt – the Hyle: stupid matter, slothfully hostile as human stupidity is hostile, and like it strong because of its obtuse passivity. Our trade is to conduct and win this interminable battle; a livered paint is much more rebellious, more refractory to your will than a lion in its mad pounce; but let’s admit it, it’s also less dangerous. »

We can say that the properties of the elements often reflect the properties of life itself: volatile, inert, lustrous, precious, poisonous, brittle, explosive ... I believe Alfred Nobel would have appreciated so much the work by Primo Levi.

In conclusion, the story I tried to narrate thanks to the beautiful help of Levi’s writing can be considered the third and last paradox of Primo Levi’s life: the Nobel

dynamite factory, emblem and symbol in some way of the atrocity of the war due to the product of its activity (the explosives) hosted the “saved” – opposed to the “drowned” – Primo Levi and made him to feel the sensation he condensed in the sentence “I felt reborn”.

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