

Facing the Other through Metaphor: Primo Levi's *The Periodic Table* and other writings

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The necessity of facing the other – whether the other is an adversary or an intimate friend – is a recurrent motif in the writings of Primo Levi. From a philosophical standpoint, this notion has been extensively explored by Emmanuel Lévinas and Gilles Deleuze and, at first glance, the ideas of these two thinkers would seem to be irreconcilable. This article will argue that Primo Levi's *The Periodic Table* incorporates both these philosophers' contrasting concepts of the face, and negotiates a subtle path between their incompatibilities. In Levi's writing we can find a dramatization of Lévinas's insistence on an ethical encounter with the face of the Other. In "Ethics as First Philosophy," for example, Lévinas writes: "the Other becomes my neighbour precisely through the way the face summons me, calls for me, begs for me, and in so doing recalls my responsibility, and calls me into question" (collected in Hand 83). And in *Otherwise than Being*, he claims, "I can enjoy and suffer by the other only because I am-for-the-other, am signification, because the contact with skin is still a proximity of a face, a responsibility, an obsession with the other" (Lévinas 90; see also: Calarco). But we will also witness an enactment of what Deleuze and Guattari call "facialization," or the "horror story" in which an abstract, ideological system reduces individual subjects to "dichotomies, binarities and bipolar values" such as human/not-human, civilized/barbaric, or me/not-me (187, 210). *The Periodic Table* can also take us beyond "facialization" to another kind of "face-off" with the Other, an encounter that is more indirect, wary and occluded than that proposed by Lévinas, but which nevertheless retains the Levinasian idea that an intimate, one-to-one encounter with the human other is an ethical necessity. This article will propose that this ethical encounter happens in *The Periodic Table* at the level of metaphor: it is through and in the slipperiness of the metaphorical exchange that we both face up to, and escape from, the Others that seek to bind us.¹

In general terms, metaphors are figures of speech which bring unlikely subjects face to face, not only in the formal sense that they discover likeness between two unlike terms but also in that they bring the author and reader of the metaphor into a condition of shared intimacy. In some cases, the metaphor can create a sense of sympathy between the two parties. In others, the metaphor may produce a face-off, a spark of confrontation between two hostile subjects who have drifted into a threatening proximity. Pushed in this direction, metaphor becomes a metaphor for the creation of intimacy between strangers, for the discomfiting recognition of one's own face in the face of an Other. In Primo Levi's semi-autobiography, *The Periodic Table*, we find an extraordinarily complex use of metaphor, in which both aspects of this shared intimacy between narrator and addressee are richly in evidence. On one level, metaphor draws an implied reader, and perhaps a real one, into deep conflict with the narrative voice, while on another level, the reader is drawn closely inwards, to see with the eye, and write with the hand, of the stranger who is drafting the text.

To put the present discussion in the context of other discussions of Levi and metaphor: Primo Levi's metaphors of chemistry have been extensively explored in Italian criticism, notably by Cesare Cases, and more recently, by Antonio Di Meo. In the paragraph above, and discussion of Ted Cohen below, the article draws on

Cohen's idea that metaphor creates a condition of shared intimacy. More generally speaking, metaphor has been a central topic in twentieth- and twenty-first-century philosophy and literary theory, cognitive linguistics, and in the history of science. Of seminal importance in philosophy are Paul Ricoeur's *The Rule of Metaphor*, Jacques Derrida's "White Mythology," and Douglas Berggren's "The Use and Abuse of Metaphor." The broader arc of philosophical discussion of metaphors is described by Clive Cazeaux, in his *Metaphor and Continental Philosophy*, and by Raymond W. Gibbs, Jr.'s collection of essays, *The Cambridge Handbook of Metaphor and Thought*. David Punter provides an excellent introduction to the history and development of literary and philosophical concepts of metaphor in his New Critical Idiom volume, *Metaphor*. Metaphor has also come to prominence in cognitive linguistics, of which Eva Feder Kittay's *Metaphor*, Zoltán Kövecses's *Metaphor: A Practical Introduction*, and Andrew Ortony's collection of essays, *Metaphor and Thought*, are excellent examples. The use of metaphor in science writing has also received extensive treatment in numerous contexts, but an accessible and intelligent discussion may be found in Theodore Brown's *Making Truth: Metaphor in Science*. This article, however, focuses on a particularly harrowing face-to-face encounter that Levi first describes in *If This is a Man*, that later, is replayed, fragmented into complex metaphors, and multiplied into a host of new encounters: with other human beings, with inorganic and organic matter, with an elusive and perhaps never to be concretized self-image.

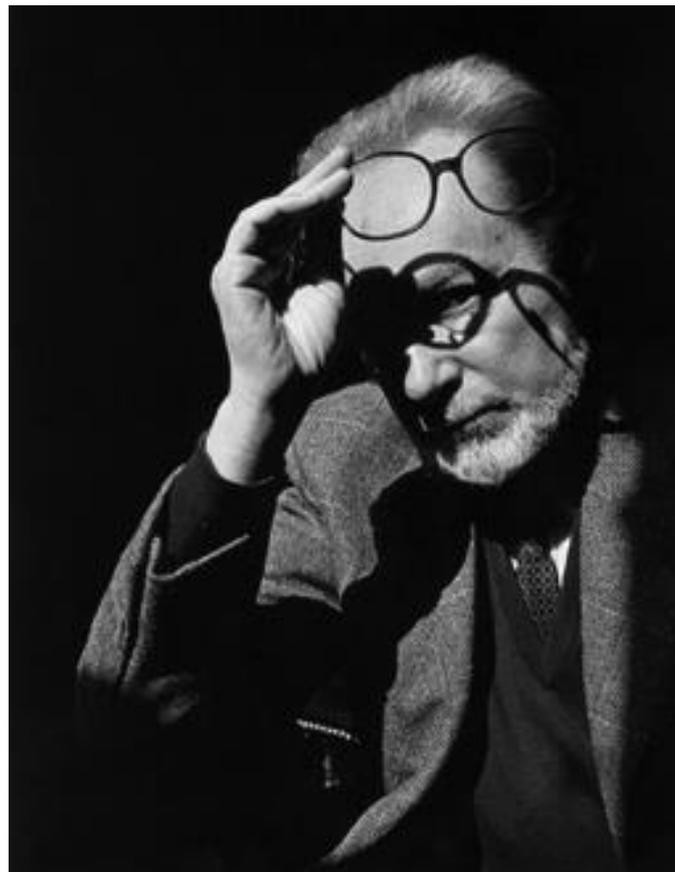


Fig. 1

© Jillian Edelstein. "Primo Levi." 1986.

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Jillian Edelstein's photographic portrait of Primo Levi, reproduced above, can lead us towards an appreciation of the complexity of the face-to-face encounter in Levi's writing. At first glance, the portrait offers us a Levinasian encounter: Levi faces the viewer, and stares directly into our eyes. The set mouth and stern eye, and the darkness surrounding the face, remind the viewer of Levi's history as a Holocaust survivor, well known by the time the photograph was taken in 1986. The illuminated face ringed by darkness suggests that the sitter of the portrait knows how the human subject can disappear, and also knows how to resist dehumanizing forces. The shadow encircling his eye frames and insists on Levi's authority, his right to judge not only his enemies, but humanity in general, including the present viewer. It is a portrait that challenges, and summons us to attention – not only to read the face but also to be read by it. If the face claims the authority of a survivor of Auschwitz, it also claims that of a scientist. The ringed eye reminds us of the chemist's eye peering through his microscope, seeing deeper into the nature of things than is possible with the ordinary, naked eye. Since the ringed eye is staring straight at the viewer, the viewer occupies the position of the bacteria on the slide, under examination. The calmly objective expression of Levi's face promises to judge, but without humiliating the object of his gaze (even, or especially, if we occupy the position of bacteria on a slide). In sum, the chiaroscuro face suggests the tenaciousness of a spirit of rationality in the face of evil or extinction. A face like this suggests a person in whom one can trust, even if paradoxically the face seems to be slightly mistrusting us.

Gaze a little longer at the image, though, and its human, penetrating, sceptical, trustworthy contours begin to blur. There is a multiplication of eyes (two lenses of the glasses, two shadows of the lenses, and the one visible human eye) that recall Deleuze and Guattari's account of facialization. In portraits of demons, they tell us, there is often a proliferation of eyes: "the black holes spread and reproduce, they enter into a redundancy ... this is a face ... who does not so much see as get snapped up by black holes" (202-03). In Deleuze and Guattari's analysis, the many-eyed face is the "despotic face and the multiplication of power proper to it" (203). Here, however, the multiplication of eyes appears to function as a resistance to despotism: the "face" refuses both to assume an authority over us, and to be authorized or summed up by a viewer. If despotic faces assert their power by "binarizing" (two becoming four, becoming eight) in Deleuze and Guattari's theory, Levi's face assumes an odd number: one human eye, a pair of glasses, and the shadow of the glasses, make five visible lenses; the sixth (the second, human eye) remains completely in shadow. Here, the uneven multiplication of lenses asserts resistance and difference rather than sameness. Primo Levi, the scientist and now canonical Holocaust writer, is not coming to face us monstrously, authoritatively, but under our closer scrutiny, appears to back away into darkness and anonymity.

For readers familiar with Levi's other writing, this elusiveness in the presence of a Black Hole will immediately recall the puzzling diagram that precedes the text of another of Levi's quasi-biographical texts, *The Search for Roots* (1981). In this volume, Levi tells his history indirectly, through an arrangement of extracts from his favourite books. The sequence of textual extracts is arranged in roughly the chronological order in which Levi read them, and thus provides the skeleton for a history of psychological development. But the diagram consists of the titles of the extracts, arranged un-chronologically along four parallel, vertical axes. Each axis is marked with a downward arrow, and all four arrows converge on a point at the bottom, marked "Black Holes," which here signifies the extract from an astronomy text of that name by Kip Thorne, but which metaphorically connotes the inescapable presence of

Auschwitz in any narration of Levi's history (*Search for Roots* 9; see: Falconer 64-67). Read in one way, the fact that all four arrows lead to this one common destination reinforces the sense that Auschwitz determines the shape of the entire history. In a contrasting sense, though, the proliferation of arrows, or pathways, shows how consciously and determinedly Levi resists seeing his history in terms of a simple binary: Auschwitz/not-Auschwitz, death/not-death (a trap into which, unfortunately, the mistranslated title of the American edition, *Survival in Auschwitz*, squarely falls). Levi gives the four axes different labels, respectively: Salvation through laughter; Man suffers unjustly; The stature of man; and, Salvation through knowledge. Each of these suggests a different principle to be extracted from reading his "personal anthology," a chronological history of his favourite reading (Levi would see this extraction in terms of a chemical distillation process; see: *The Periodic Table* 62). Thus there is not one story to be extracted or distilled, but at least four, and each of these changes according to how it is read in relation to the other axes. Against the most pessimistic axis of texts illustrating how "man suffers unjustly," for example, we are invited to juxtapose the two axes of personal "salvation" through knowledge and laughter.

In a comparable way, the use of extended metaphor in *The Periodic Table* allows Levi to convey the transient, provisional and relational aspects of individual subjectivity. Here his autobiography emerges intermittently over the course of twenty-one chapters, each of which is ostensibly devoted to an explanation and demonstration of the properties of a single chemical element. Collectively, the twenty-one elements make up the complete set of chemical elements in Mendeleev's Periodic Table, a known visual schema which, though it does not appear in the text itself, virtually performs a similar function to the diagram in *The Search for Roots*. In both cases, the table or diagram encourages us to reflect on, and extract principles and relations between, various parts of the (chronological, autobiographical) sequence of chapters. In each chapter, a chemical element is associated with a particular human protagonist; by this method, Levi explains and dramatizes the different properties of chemical elements, while at the same time providing cameo portraits of the central protagonists in his own life-narrative: his relations, friends and enemies including, for example, Enrico, Sandro, Giulia, Alberto, Lanza, Felice, an unnamed cobbler, Emilio, Bonino, Cerrato, and Dr. Muller. Some of the elements (notably zinc and carbon, but also chromium and nitrogen) are metaphorically associated with Levi himself. And all the human portraits are embedded within the overarching, if obscure, narrative of Levi's own history. The twenty-one elements are arranged in a chronological series, as becomes clear when we trace the events related in each chapter. Chapter one discusses argon, an inert gas, which Levi offers as a metaphor for his ancestors who, he tells us, were inclined to immobility, inbred, inward-looking, culturally assimilated and entrenched in their own habits. The second chapter concerns Levi's boyhood and his enthusiasm for explosive chemical experiments, while chapter three takes us up to Levi's adolescence and the passing of racial laws in Italy in 1938. Chapter four describes his close friendships and events happening to him in 1939, and chapter five relates the approach of war in 1941. The next seven chapters relate histories connected with Levi's experiences as a prisoner during the war, while the final eight chapters describe his life, work and relationships after the war and up to the present tense of narration. Thus, *The Periodic Table* does constitute an autobiography, if of an indirect, playful, metaphorical and secretive kind. If a "straight" autobiography invites a reader to gaze full-face at the "I" who is both producing and product of the narrative, then Levi's quasi-autobiographies describe a subject in shadow, visible in some lights

and times and not others: not fully present, but flicker-lit, like the poet underground at the end of Seamus Heaney's eponymous poem, "District and Circle" (19). It is up to the reader to distill this elusive subject from the matter of *The Periodic Table*.

In Levi's choice of narrative indirection, moreover, we find evidence of an urgency to bear witness to historical events, coupled with a conviction that the whole truth – about an individual, let alone an historical event – can never be known. So the cagey, defensive stance becomes a necessary part of the face-to-face encounter whose aim is to illuminate a difficult, elusive truth. The metaphoric structure of *The Periodic Table* allows Levi to present his subject(s) in forms that are at once luminous and ambiguous. In Levinasian terms, there is a direct facial encounter with each subject (human character, chemical element), and each encounter reveals a significant aspect of our human, material condition. On the other hand, some subjects evade the "capture" of interpretation, and the relation between the tenor and vehicle of the metaphor remains anomalous, obscure. Thus, taking the text's human protagonists as vehicles for understanding the distinctly individual, fascinating properties of each chemical element, we can appreciate the masterful way in which Levi has given the chemist's trade a human face, and rendered an otherwise abstruse discipline interesting and accessible to the general reader. Proof of his success lies in the book's extraordinary popular appeal. In Britain, in 2006, for example, *The Periodic Table* beat Darwin's *Origin of the Species* and *Voyage of the Beagle*, along with Richard Dawkins's *The Selfish Gene*, James Watson's *The Double Helix*, Tom Stoppard's *Arcadia*, Stephen Pinker's *The Blank Slate*, and Oliver Sacks's *A Leg to Stand On*, to win the title of "best science book ever" in a national competition organized by the Royal Institution, London (see: Randerson).

And conversely, taking the chemical elements as vehicles for understanding human nature, the discoveries are no less remarkable, illuminating, and far-reaching in their implications. Human protagonists come to be seen as lucid elements in an intricate, comprehensible material system, or notes linked together in a complex chord (for example, Levi's ancestors, like argon, were sluggish, resistant to change; and just as argon touches on other elements in the table, so these reclusive forebears are implicated in, and bear some responsibility for, subsequent events in Italian history, including the rise of fascism). Alongside these illuminating metaphorical correspondences, however, Levi introduces discordant narrative strategies, and protagonists and chemical elements that do not fit the metaphorical patterns he has set up elsewhere. In a chapter entitled "Arsenic," for example, the main character is an unnamed cobbler who does not exemplify any of the qualities associated with that poisonous element. On the contrary, he proves to be quietly dignified and serene in the face of prolonged aggression from a less skillful competitor. Here, tenor (the cobbler) stands in opposition to the metaphorical vehicle (arsenic); or perhaps arsenic is a metaphor for the cobbler's enemy. In either case, the metaphorical correspondence is at odds with the established pattern, and the principle to be extracted from this tale of the unnamed cobbler and arsenic is rendered unstable and ambiguous. In this sense the "face" of arsenic remains shadowed, as does that of the cobbler who remains unnamed in Levi's narrative.

It is possible, perhaps, to resolve these ambiguities, by arguing that the very resistance of certain characters and chemical elements to be contained within coherent metaphorical schema constitutes a meta-metaphor for the singularity and unpredictability of human nature. And along this line of interpretation, chemistry is the science that by *its* nature protects and preserves this aspect of human nature. So in "Potassium," Levi explains how as a student, he became attracted to chemistry, with

its "mess compounded of stench, explosions, and small futile mysteries" (*The Periodic Table* 65), because it was a means of resisting fascistic thinking: "Matter was our ally precisely because the Spirit, dear to Fascism, was our enemy" (56). Under Mussolini, Italian Jews likewise have an important cultural role, for if they were regarded as an "impure" race, impurity is what human culture needs to thrive. Thus, in chapter three "Zinc," Levi describes how racial laws made him newly conscious of his Jewishness: "I had always considered my origin as an almost negligible but curious fact, a small amusing anomaly" (39). Noting how zinc in a pure state obstinately resists transformation, while zinc containing an impurity reacts spectacularly with other elements, Levi declares of his Jewish identity: "I am the impurity that makes the zinc react" (38-39). Against Fascism's "praise of purity," he celebrates "impurity, which gives rise to changes, in other words, to life ... Dissension, diversity, the grain of salt and mustard are needed: Fascism does not want them, forbids them, and that is why you're not a Fascist" (37). As in *If This is a Man*, the slippage of tenses from past to present tense, and of voice from first- to second-person, complicate the question of where the narrator is standing in relation to the subject, whether his insights derive from the character's direct experience or the narrator's retrospective reflection. This temporal and ontological instability intensifies the potency of the metaphor, because just like impurity in zinc, the narrator's voice may be acting upon us, imperceptibly destabilizing, metamorphosing us, even as we read. For Boldrini, Levi's description of "the behaviour of zinc in different chemical contexts" illustrates "the need for a language of precision and discrimination" (see: "Literature and Science" 62).

But the complexity of Levi's metaphorical schema and the indirection of his autobiographical narration require further explanation, when we consider that both here and elsewhere Levi explicitly champions clear, transparent writing over ambiguity and obscurity. In his essay, "On Obscure Writing," published in *Other People's Trades*, a year after *The Periodic Table*, he declares "a piece of writing has all the more value ... the better it is understood and the less it lends itself to equivocal interpretations" (158; see: Boldrini, "Literature and Science" 59; "Rattling the Cage"). There is, Levi argues, an ethical dimension to clear writing, since the latter demonstrates respect for, and a real desire to communicate with, the reader. In *The Periodic Table*, Levi describes the period in which he began to be able to write about his experiences in Auschwitz. One important stimulus was falling in love; emotionally "reborn and replete with new powers," his "baggage of atrocious memories became a wealth, a seed" ("Chromium," see: *The Periodic Table* 159, 160). But another important factor was getting a job as a chemical technician, since it was practicing chemistry that helped him develop a narrative voice:

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 no 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. (159-60)

Part of this shift in voice involved a new relation with the reader, on the one hand more distant and judicious, and on the other, companionable and no longer anxiously "solitary." The writing to which he refers here is not *The Periodic Table*, which is self-evidently about the work of weighing, dividing, and measuring, but rather his Holocaust narratives, *If This is a Man* (1947) and *The Truce* (1963). In this instance,

chemistry is not a "mess of stench" which metaphorically corresponds to human messiness; rather it is the practice of lucid, precise and rational experimentation which finds its metaphorical analogy in clear writing. Thus, "it was exalting to search and find, or create, the right word, that is, commensurate, concise, and strong" (*The Periodic Table* 160). In "On Obscure Writing," Levi sees the need to write clearly as an ethical imperative for the Holocaust survivor; his duty is first and foremost to communicate the truth about the death camps as accurately as possible. Writing, then, should aim to approximate the face-to-face encounter; not only should the survivor face his memories directly, but he also has the ethical obligation to reach out to his readers in lucid, transparent prose.

On the other hand, it is worth pointing out that even in this example of chemistry's transparent lucidity, Levi is not writing transparently himself. None of his published works are actual, chemical reports. In *Other People's Trades*, Levi rejects C. P. Snow's argument that the humanities and sciences constitute two separate cultures; he sees this schism to be both false and harmful. Subsequent commentators have agreed with him, and there is a wealth of recent criticism arguing for a substantial overlap between scientific and artistic ways of thinking (see: Waugh; Cordle). But this position needs to be nuanced. Levi's own metaphorical practice of writing literature as if it were a branch of chemistry, and of understanding chemistry as a kind of literary narrative, depend upon there being two different worlds to be brought together by his writing.

Moreover, there are specific reasons for the metaphorical density and narrative indirection of *The Periodic Table*, which become clear when considering its close relation to Levi's earlier Holocaust writing. In chapter ten of *If This is a Man*, Levi recounts an experience that helps explain his narrative indirection, when he later comes to writing about chemistry, and about himself as a chemist. It also provides an example of a powerful and complex use of metaphor in the context of a traumatic face-to-face encounter with an enemy who is also (or should be) an intellectual kindred spirit. Before turning to *The Periodic Table*, then, it is important to revisit this pivotal chapter in *If This is a Man*.

The chapter is entitled "Chemistry Examination" and it relates an episode that occurs in the beginning of Levi's second winter as a prisoner in Auschwitz. He is taken to be examined by a German chemist, a Dr. Pannwitz, to ascertain if he is fit to work as a chemist at the nearby Buna laboratory. During the course of the interview, Levi manages to assemble enough of his former knowledge to be given the post; the important consequence is that Levi escapes the worst labour conditions outdoors that winter, and may well have survived the war because of this successful interview. The narrator Levi regards the episode as a trial of his identity, conducted by a demonic judge. Relating the episode in the present tense, he conveys the sense of a traumatic wound or rupture which has not yet healed (on uses of present tense in trauma narratives, see: Whitehead). Entering the interview room, he writes, "I feel like Oedipus in front of the Sphinx" (*If This is a Man* 111). The Sphinx (Pannwitz) is writing notes and does not look up, as Levi looks at him:

Pannwitz is tall, thin, blond; he has eyes, hair, and nose as all Germans ought to have them, and sits formidably behind a complicated writing-table. I, Haftling 174517, stand in his office, which is a real office, shining, clean and ordered, and I feel I would leave a dirty stain whatever I touched. (111)

As Sophocles' Oedipus correctly guesses, the answer to the Sphinx's riddle is "man," whereas Levi, having internalized the image of himself as dirty and sub-human, will have difficulty summoning the remembrance of himself as a man. Oedipus is later banished because his guilt inflicts a stain (*to miaron*) on the city of Thebes; he accepts this verdict and curses himself as a *miastor*, stained with blood and infectious to others (cf. Sophocles, *Oedipus Tyrannus* 353; *Oedipus at Colonus* 1374).² Levi, an innocent man brought to judgment, feels himself similarly stained, condemned by his very appearance.

In Deleuzian terms, Levi is already undergoing "facialization"; Pannwitz appears to him as an abstraction – a stereotypical German fascist, and he is already anticipating what this enemy will see when he looks up at the prisoner. As Deleuze and Guattari write:

the abstract machine of faciality assumes a role of selective response, or choice: given a concrete face, the machine judges whether it passes or not ... At every moment, the machine rejects faces that do not conform, or seem suspicious ... [finally] you've been recognized, the abstract machine has you inscribed in its grid. (*A Thousand Plateaus* 196-97)

At the moment when the doctor does look up, the narrator Levi interrupts his narration to wonder about Dr. Pannwitz as a man, rather than a machine:

he raised his eyes and looked at me.

From that day I have thought about Doktor Pannwitz many times and in many ways. I have asked myself how he really functioned as a man; how he filled his time, outside of the Polymerization and the Indo-Germanic conscience; and above all when I was once more a free man, I wanted to meet him again, not from a spirit of revenge, but merely from a personal curiosity about the human soul. (*If This is a Man* 111)

The moment of reflection distances him briefly, but he continues to what is clearly the scene of a primary trauma:

Because that look was not one between two men; and if I had known how completely to explain the nature of that look, which came as if across the glass window of an aquarium between two beings who live in different worlds, I would also have explained the essence of the great insanity of the third Germany. (111-12)

With Deleuze, we could observe that the machine that is Dr. Pannwitz is processing its judgment that Levi's face is suspicious, does not conform to the human, and indeed belongs in some aquatic, reptilian world. Levi (the protagonist) goes on to interpret what the look "says," even if he feels he cannot explain why or how it could be saying it:

One felt in that moment, in an immediate manner, what we all thought and said of the Germans. The brain which governed those blue eyes and those manicured hands said: "This something in front of me belongs to a species which it is obviously opportune to suppress. In this particular case, one has to first make sure that it does not contain some utilizable element." And in my head, like seeds in an empty pumpkin: "Blue eyes and fair hair are

essentially wicked. No communication possible. I am a specialist in mine chemistry. I am a specialist in organic syntheses. I am a specialist...." (112)

Once again, we have an illustration of the dynamics of Deleuzian "facialization," the abstract machine ("brain" and "eyes") reducing the alien other to a mechanized, "utilizable element." The phrase "I am a specialist in mine chemistry" may be intended to suggest to English readers that the prisoner Levi is clumsily attempting to recall a German syntax; but in fact, the German-sounding "mine chemistry" is a mistranslation (possibly intended?) of the Italian "*chimica mineraria*."³ What Levi repeats to himself is the grammatically correct phrase: "I am a specialist in mineral chemistry." All the same, his attempts to define his area of expertise are clumsy and robotically repetitive and, under the hostile gaze of his examiner, his thinking narrows to crude binary oppositions ("Blue eyes and fair hair are essentially wicked") in a manner that abjectly mirrors the binary thinking he senses in his adversary.

But then the cross-examination begins, and Levi manages to call up his former identity: "At first I have the definite sensation of not being believed, of not even believing it myself" yet "I am he, the B. Sc. of Turin," "it is impossible to doubt my identity with him" (112). Dr. Pannwitz seems to be impressed and begins to address the prisoner as a fellow chemist, asking Levi's opinion about a book they have both studied, Gattermann's organic chemistry manual, *Die Praxis des Organischen Chemikers*. Against all probability, the examination of the "utilizable element" becomes a face-to-face encounter between two human beings, indeed two colleagues connected by a shared body of knowledge and discipline: "this sense of lucid elation, this excitement which I feel warm in my veins, I recognize it" (*If This is a Man* 112); "My poor old 'Measurements of dialectical constants' are of particular interest to this Aryan who lives so safely" (113).

This transitory moment of recognition makes it all the more horrifying that the encounter should collapse back into brutalizing opposition. The interview concluded, "the Aryan" resumes his notes, and Levi is once again the creature behind glass, Haftling 174517: "dull and flat, I stare at the fair skin of his hand writing down my fate on the white page in incomprehensible symbols" (113). On a practical level, the examination has been a success; Levi will be given the job in the Buna lab. On the level of ethics, though, the interview is an incomprehensible failure. The Levinasian face-to-face encounter *ought* to have humanized the enemy, elicited sympathy for the Other's suffering. Instead, the despotic process of "facialization" seems consummated in the scrawling of symbols (demonic eyes?) on a white page (abstract face). The ethical failure of this encounter leaves permanently ruptured and unfathomable the question of what it means to be human.

On one level, *The Periodic Table* may be read as an internal polemic aimed at answering back to this humiliation by a fellow chemist, after an interval of more than twenty years. By metaphoring chemical elements into human portraits which collectively spell out a personal history, Levi imposes his humanity on an implied hostile reader: "this time, you *will* recognize me." Of course, no such message is explicitly spelled out in *The Periodic Table*. On the contrary, in the final chapter, Levi addresses his work to fellow chemists with whom he *does* feel a strong, sympathetic connection. He describes the present text as neither straightforward "autobiography" nor "chemical treatise" but as "the history of a trade and its defeats, victories and miseries, such as everyone wants to tell when he feels close to concluding the arc of his career" (*The Periodic Table* 232). The "everyone" he wants to reach is more specifically a chemist, who would recognize the potency of the metaphor, by which a

table of elements – a white page of incomprehensible symbols to the uninitiated – would deliver the story of a human history: “Having reached this point in life, what chemist, facing the Periodic Table ... does not perceive ... the sad tatters, or trophies, of his own professional past?” (232) At first glance this image of the implied reader as a fellow chemist, faced with the same Table as Levi, seems a straightforwardly genial one. As Neil Ascherson comments in his introduction to *The Periodic Table*, as readers we “feel trusted and even loved by this unseen intimate” (viii). A companionable intimacy is created between author and reader, as they also face each other across a printed page. In context, however, the assertion also contains more than a grain of aggression, along with the intimacy, since it directly follows the chapter in which Levi narrates his failure to connect with another German chemist. The episode occurs years after the encounter with Dr. Pannwitz, yet Levi experiences and narrates it as an infernal repetition of the past.

In “Vanadium,” the chapter immediately preceding the above quotation, Levi recounts an incident in his later career, which brought him into contact with a chemist from that same Buna laboratory. Levi recognizes this Dr. Muller because of a consistent misspelling of a chemical element; then and now, Dr. Muller writes “napterate” for “naphthenate” (*The Periodic Table* 220). The misspelling is highly symbolic, because Dr. Muller is suggesting the addition of this chemical compound, “Vanadium naphthenate,” to “cure” a shipment of faulty resin. He is attempting to varnish over a fundamental fault in the original substance just as, when challenged by Levi about the past, he will offer a carefully doctored version of events. The discovery of Muller’s identity clearly triggers in Levi the reopening of a traumatic wound. To meet this chemist face to face would be to relive the encounter with Dr. Pannwitz:

The return of that “pt” had thrown me into a state of violent agitation. To find myself, man to man, having a reckoning with one of the “others” had been my keenest and most constant desire since I had left the concentration camp.... The encounter I looked forward to with so much intensity as to dream of it (in German) at night, was an encounter with one of them down there, who had disposed of us, who had not looked into our eyes, as though we didn’t have eyes. (221-22)

At first, Levi obsessively pursues the idea of meeting this Dr. Muller, so as to be able to ask him, “Why Auschwitz? Why Pannwitz?” (225). But he is taken aback to learn that Dr. Muller, too, needs something from the meeting: “he wanted from me something like an absolution” (224). Dr. Muller writes him an eight-page letter, detailing a distorted account of the role of the Buna factory, and the nature of their exchange. He claims to have saved Levi’s life, and reminds him that he had procured Levi a pair of leather boots. His letter includes a photograph which shakes Levi even more profoundly: “The face was *that* face ... I could hear him again high above me pronounce those words of distracted and momentary compassion: ‘Why do you look so perturbed?’” (226). As in the interview with Dr. Pannwitz, there is in this remembered look and sentence, the ghost of the possibility of a Levinasian encounter, which makes its failure more absolute. That the face could be compassionate, and yet turn away – this is what human beings do.

The letter, while varnishing over unbearable truths, convinces Levi that meeting Dr. Muller could not satisfy his urgent desire to meet his ancient “adversary” face to face: “after filtering off the rhetoric and the lies in good or bad faith there remained a typically gray human specimen, one of the not so few one-eyed men in the

kingdom of the blind" (229). Levi drafts a reply which pointedly omits mention of an interview but before he can send it, Dr. Muller phones him to ask him directly; and Levi says yes. Days later, however, he hears from Mrs. Muller that Dr. Muller has died, probably by his own hand. The possibility for an encounter with at least one version of the past being now definitively over, we are left wondering: was this Levi's failure? Or Dr. Muller's? Or alternatively, does the chapter demonstrate a victory of compassion over vengeance? This time, at least, Levi has seen beyond the abstract face to a particular individual: "my opponent distracts me, he interests me more as a man than an opponent, I take pains to listen and run the risk of believing him" (225). On the other hand, it is the thought that he might believe the other man's story that stops him from wanting to see Dr. Muller in the flesh. The direct encounter is no guarantee of authenticity; it does not necessarily bring self or other closer to the truth. What *The Periodic Table* does preserve is the possibility of approaching the many-sidedness of truth through indirect ways of knowing and telling.

One reason for Levi's turn to complex metaphor in *The Periodic Table* may be that he, or his quasi-autobiographical narrator, has come to distrust the straightforward, face-to-face address. In its genial warmth and generosity, the narrator of *The Periodic Table* invites readers to experience imaginatively the tangible, human, particular reality of practising chemistry. At the same time, the narrator covertly summons an enemy chemist to judgment, seeking reparation for past trauma. A surface healing takes place, which both alleviates the pain of a deeper wound, and ensures that thus deeply embedded, the wound will never heal. As a narrator, Levi has a responsibility to maintain all these different stances toward the reader, because each form of address implies a different and incompatible truth regarding human nature.

In chapter ten of *If This is a Man*, that metaphor is already at work, establishing different levels of intimacy and hostility in the encounter between a self and an Other. Of Dr. Pannwitz's glance at the prisoner, Levi writes: "if I had known how completely to explain the nature of that look, which came as if across the glass window of an aquarium between two beings who live in different worlds ..." (*If This is a Man* 111). The metaphor – or more correctly, simile – conveys the idea of a total lack of connection between two men, as they regard each other face to face. At the same time, however, it is precisely this striking metaphor that so powerfully conveys to the reader what Levi felt at the time, and what he feels as a narrator reflecting on the episode. While the content conveys hostility towards the subject, Dr. Pannwitz, the structure of the metaphor depends on a shared understanding between the narrator and narratee, or reader.

Ted Cohen's study of metaphor as a form of cultivating intimacy may help to clarify our point here. Cohen argues that metaphors are distinctive in the way they require a speaker and a listener share, and acknowledge that they share, a common body of knowledge; these figures of speech highlight "the cooperative act of comprehension" by cultivating a uniquely intimate relation between speaker and listener or reader (19). In using metaphor, Cohen writes, "1) the speaker issues a kind of concealed invitation; 2) the hearer expends a special effort to accept the invitation; and 3) this transaction constitutes the acknowledgment of a community" (8). In the metaphor of the aquarium, Levi invites his readers to share in his bewilderment and sense of shame even as he records the total failure of empathetic connection with the subject of the metaphor, Dr. Pannwitz.

If one of the implied readers of *The Periodic Table* is Dr. Pannwitz, or an equivalent colleague/adversary, then metaphor creates an intimacy that is not entirely benevolent or sympathetic. Ted Cohen's analysis once again underlines the possibility

of metaphor functioning this way. Intimacy, he argues, is not "an invariably friendly thing, nor is it intended to be. Sometimes one draws near another in order to deal a penetrating thrust" (11). The more complex and abstruse the metaphor, the more the enemy may be surprised into intimacy: "When the device is a hostile metaphor ... requiring much background and effort to understand, it is all the more painful because the victim has been made a complicitor in his own demise" (Cohen 11-12). At the level of diegesis, Dr. Muller is author of his own demise, but in the narration of his story, Levi turns Dr. Muller's field of specialization, resin or varnish, into a metaphor for shallow moral stature. While the reader understands immediately the connection between tenor and vehicle, Dr. Muller remains blind to it, in all his correspondence with the protagonist Levi. In this sense, we may say that "Vanadium naptenate" is a hostile metaphor, aimed to deal a penetrating thrust at an unsuspecting antagonist. The way that metaphor can create a complex array of different kinds of intimacy might be compared to Marianne Hirsch's discussion of different types of readerly identification with fictional characters and narrators; "heteropathic identification" refers to when a reader recognizes the other's alterity, while "idiopathic identification" refers to what happens when a reader's sense of "displacement gives way to interiorization and appropriation" (9, 16).

Beyond hostility or complicity, we might see metaphor as a way of encountering the other in a dream structure, where conflicting truths do not necessarily cancel each other out. Donald Davidson's approach to metaphor is pertinent here. He argues that:

Metaphor is the dreamwork of language and, like all dreamwork, its interpretation reflects as much on the interpreter as on the originator. The interpretation of dreams requires collaboration between a dreamer and a waker, even if they be the same person; and the act of interpretation is itself a work of the imagination. So too understanding a metaphor is as much a creative endeavor as making a metaphor, and as little guided by rules. (31)

In the penultimate chapter of *The Periodic Table*, Levi recounts his failure to confront an adversary from his past. One factor contributing to the impasse has been Levi's fear that the adversary would refuse to collaborate in a quest for the truth, and might insist on some distorted version which Levi would allow, out of sympathy rather than judgment. In any case, the chapter ends with an absolute rupture of communication (the other chemist's death). As happens in *If This is a Man*, this aporia is circumvented by a shift from realist to fantasy mode, and a shift in referential field from science to literature. In the earlier work, Gattermann's manual is succeeded by Dante's *Inferno* (Chapter 11, "The Canto of Ulysses"), while in *The Periodic Table*, the biographical account of two chemists is followed by a fictional, picaresque tale about a carbon atom.

An important consequence of the shift from explicit biographical to fictional narration in both works is that it allows Levi to construct a more open and imaginative relation between narrator and addressee. In "The Canto of Ulysses," Levi discovers his ideal listener in the French prisoner Jean, or "Pikolo." Levi narrates to him the story of Ulysses, from Dante's *Inferno* 26, and the other prisoner listens avidly and actively: "How good Pikolo is, he is aware that it is doing me good. Or perhaps ... he has received the message, he has felt that it has to do with him, that it has to do with all men who toil, and with us in particular" (*If This is a Man* 119-20). But Levi is also the addressee of Dante's Ulysses, as he recalls the latter's exhortation to his

shipmates: "you were made men, / To follow after knowledge and excellence." If "The Canto of Ulysses" becomes a metaphor for "the stature of man" (to borrow Levi's caption title in *The Search for Roots*), it succeeds where Gattermann's manual failed, in part because of the extraordinary receptivity of the two addressees, Pikolo and Levi himself. Ulysses's words, familiar to every Italian school child, here strike Levi "like the blast of a trumpet, like the voice of God" (119). Nevertheless, the chapter ends chillingly, with the drowning of Ulysses ("as pleased Another" (121)) and the silencing of Levi's narration. Levi's Ulysses is not only a metaphor for idealistic humanism ("The stature of man"); his fate in *The Inferno* also stands metaphorically for another principle, the nightmarish one that "Man suffers unjustly."

In the concluding chapter of *The Periodic Table*, Levi turns from the non-encounter with an "enemy" to addressing his reader directly. This reader bears the face of a fellow chemist, one who would readily find in the Periodic Table a story of his own particular history. But, he continues in the next paragraph, "one must perhaps make an exception for carbon," since unlike the other elements which "say something different to each," carbon "says everything to everyone" (*The Periodic Table* 232-33). It is therefore also to "everyone" (the general reader) that Levi addresses his concluding, picaresque tale. In so doing, he is in one sense backing away from the face-off with Dr. Pannwitz/Dr. Muller, before whom he would need to be capable of "representing the dead of Auschwitz" or so he narrates at the time (225). In another sense, though, he is taking an enormous risk, for the story of carbon will have to encompass everything and everyone, including his personal adversaries, and including the history of the death-camps. And if the story is a general one, for Levi it has its origins specifically in Auschwitz: "To carbon, the element of life, my first literary dream was turned, insistently dreamed in an hour and a place when my life was not worth much" (233).

Levi sets forth in these final pages with Ulysses's last voyage very much in mind. He deliberately lays aside his role as scientist to don that of the literary adventurer, explaining that no scientist could yet (before 1970) isolate a single atom (see: Boldrini, "Literature and Science" 63). He therefore proposes to carry out the experiment in literature, by narrating the fate of a particular atom. In this matter, he asserts, literature can speculate much further than science: "for the chemist there exist some doubts ... no doubts exist for the narrator, who therefore sets out to narrate" (*The Periodic Table* 233). This is precisely the bold and risky Ulysean gesture of venturing forth (Dante's "*ma misi me*," *Inferno* 26: 110) that Levi had so admired in *If This is a Man* (119). But there is more than an edge to the comparison between this narrator and Ulysses encouraging his shipmates to set sail for unknown territory. In *Inferno*, Ulysses is damned for eternity in the circle for false counsellors. The speech he repeats is (for the poet Dante) an example of false counsel, and the fact that it moves and inspires the listening pilgrim (and Levi, and modern readers) goes to show how intact his demonic powers of speech remain. Levi's story of the carbon atom is dizzying in its temporal and geographical reach: we begin hundreds of millions of years ago, in some unspecified underground location. Not only does Levi invite the general reader's attention; by consistently employing the first person plural ("Our character lies...", "our atom is inserted" [*The Periodic Table* 233, 236, passim]), he makes sure that we are sailing these open seas with him. Having secured our presence, the narrator goes on to steer his little ship in arbitrary directions, flagrantly playing fast and loose with time and space: thus, "at any moment – which I, the narrator, decide out of pure caprice to be the year 1840 –" (234); or, "It is our whim to abandon it for a year or five hundred years" (238). These are the established rules of picaresque

narrative: that things happen by chance, not teleological causation. Levi is clearly playing the role of picaresque narrator here, referring frequently to that role in the third person. For a chemist reader, 1840 is not capricious at all, being the date that William Thomson is held to have established the field of thermodynamics. But even accepting the narrator's playful and ironic gesture towards caprice, this gesture also contains a hidden polemic against the biographical adversary of the preceding chapter: *he* the narrator is now solely in charge of what happens when (for "hidden polemic" see: Bakhtin 195). Since this is "our" story, readers have no choice but to accept the narrator's acrobatics and read on (unless of course they choose to close the book).

One way of interpreting the picaresque narrative that follows would be to suggest that, having re-experienced the traumatic encounter with a chemist-adversary (a failure to recognize the face of the Other, in Levinasian terms), Levi escapes demonic repetition of the trauma by deterritorializing, moving towards a position of Deleuzian post-anthropocentrism. Thus, the narrator of "Carbon" adopts a geological perspective so vast and remote that all human suffering, including his own, could not but be dwarfed into comedic insignificance. Such a reading, though, might miss the metaphorical force of the final chapter, which in some respects gathers up all the metaphorical correspondences encountered previously. This being the only chapter that makes the element the story's principle protagonist, the metaphorical parallels with human subjects are certainly harder to detect. Nevertheless, there are unmistakable resonances of Levi's own history. In Italian, the term "*carbonio*" (carbon) is etymologically close to "*carbone*" (coal) and "*carbonizare*" (to burn to ashes). In Holocaust memoirs, a person taken away to the gas chambers was sometimes referred to as having "escaped by the chimney" (cf. Liana Millu's testimony *Smoke over Birkenau*, and Derrida, *Cinders*). The first section of Levi's story imagines the atom of carbon being released from an "eternal present" which metaphorically encompasses Auschwitz, and Levi's identification with Dante's Ulysses there: "Its existence, whose monotony cannot be thought of without horror, is a pitiless alternation of hots and colds ... an imprisonment, for this potentially living personage, worthy of the Catholic Hell" (*The Periodic Table* 233). Levi then traces the path of his chosen atom of carbon through a long series of captures and escapes: from a block of limestone, through roasting in a lime kiln, to release into the air, where it is swallowed by a falcon, excreted again into the elements, absorbed into a leaf, separated from oxygen, then bound as carbon dioxide to the chain of organic life. In a passage that resonates with the chapter on "Zinc" and "the impurity" of Levi's Jewish ancestry, the narrator pauses to celebrate the "ever renewed impurity" of carbon dioxide; this "shamefully" impure gas "constitutes the raw material of life," unlike the purer elements which are in themselves entirely uncreative (236).

The image of carbon as a constantly metamorphosing escape-artist, furthermore, anticipates the figure of the "*passa-muri*" (the man who goes through walls), who is the protagonist of one of Levi's last stories, written in 1986 (see: Angier 696). That story concerns a seventeenth-century alchemist who was thrown into prison for believing that matter was made up of atoms, instead of being continuous like water, as the scientists of his day affirmed. The alchemist in Levi's story escapes from prison by inserting his starved and waif-like body through the gaps between atoms in the prison wall, thus proving his theory scientifically true, while at the same time saving his own life. In anticipation of that later story, the "Carbon" chapter posits that the human subject has become more elusive, harder to face directly, but that there is still a constant narratorial pressure for a Levinasian ethical

encounter with this subject to take place. On the other hand, though, all these protagonists escape imprisonment by undergoing bodily metamorphosis into non-human life forms. In this respect, the ethical subject survives, but with its human contours dissolved and dispersed. The constant flow between tenor and vehicle, between human and chemical matter, throughout the book has been in preparation for the final metamorphosis: where matter becomes touchingly sentient, present, and fully accountable to the other and to the reader.

Despite the autobiographical resonances in the "Carbon" chapter, Levi's presence in the tale has never been more than ghostly. In the last paragraph, though, the narrator steers the atom of carbon's intricate dance through millions of life into the writing hand of Primo Levi himself. The carbon enters a nerve cell, and "this cell belongs to a brain, and it is my brain, the brain of the *me* who is writing" (241). This strangely distanced vantage point on "the *me* who is writing" owes something to the memory of a fair-skinned chemist writing incomprehensible symbols on a white page which would determine the fate of that same *me*. But in a reversal of that earlier scene, the carbon atom:

makes my hand run along a certain path on the paper, mark it with these volutes that are signs: a double snap, up and down, between two levels of energy, guides this hand of mine to impress on the paper this dot, here, this one. (241)

Though mechanically described, the action of this hand produces signs that are legible and meaningful to the reader. When the reader stares at the dot which that hand has impressed, it is as if in the presence of the writer himself: as if an *i/eye* itself, the dot stares directly at the reader's eye: a fully material, concrete face-to-face encounter. But is it a human encounter? The writing trace recalls Levi's absence, no less than his presence, here at the time of reading. Can this dot of ink, swimming on the white page, really conjure the face of a knowable Other, or is it another barrier against knowledge? To take Levi's far-fetched tale seriously, then, whether looking at Levi's face or merely a splash of ink on paper, is to be connected – because all organic matter is bound into this same story of the metamorphosis of carbon.

Carbon, as the atom necessary to life, becomes the metaphor for the persistence and connectedness of all living beings; and Levi sets it directly after his chapter on "Vanadium," the metaphor for shallow self-regard, and irredeemable solitariness. The face of the other touches the reader, or it remains an alien being behind glass. In the dreamwork of metaphor, both these ideas can be distilled from *The Periodic Table*.

Notes

1. The image of the face in Levi's writings may be compared to that of the face in Paul Celan's poem, "Einkanter: Rembrandt" which is an ekphrastic memorial to the Cologne Rembrandt self-portrait. I am grateful to Simon Swift for this reference, who in turn points to a forthcoming article about the Celan poem, by Ian Fairley.

2. Liddell and Scott translate *miastor* as a "crime-stained wretch who pollutes others," and cite this reference to *Oedipus Tyrannus* (353) as an example. For other instances in Greek tragedy, see: Sophocles, *Antigone* (172); Euripides, *Iphigenia in Tauris* (1229); *Hippolytus* (316-18). Arguing that some subjects are unfitting for tragedy as they do not produce *katharsis* in the audience, Aristotle writes the "repugnant (*to miaron*) arouses neither fellow-feeling nor pity nor fear" (My trans. of Aristotle. *Poetics* 13.36: 1453a).

3. The passage in the Italian original reads: "Quello che tutti noi dei tedeschi pensavam e dicevamo si percepí in quel momento in modo immediato. Il cervello che sovrintendeva a quegli occhi azzurri e a quelle mani coltivate diceva: 'Questo qualcosa davanti a me appartiene a un genere che è ovviamente opportuno sopprimere. Nel caso particolare, occorre prima accertarsi che non contenga qualche element utilizzabile'. E nel moi capo, come semi in una zucca vuota: 'Gli occhi azzurri e i capelli biondi sono essenzialmente malvagi. Nessuna comunicazione possibile. Sono specializzato in chimica mineraria. Sono specializzato in sintesi organiche. Sono specializzato...'" (*Se Questo e un Uomo, Opere Vol I*: 109. My italics).

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