

ASSIGNMENT

Size: 8-10 pages (2000-2500 words):

Subject: either *Cosmicomics* or *The Periodic Table*

Task: Focusing especially on one chapter in the book you choose and proceeding by way of close textual analysis, articulate what seems to you to be a primary thematic concern of the book, and show how the "science" deployed either deepens or obscures that theme.

Zinc and the Relationships It Forms

Primo Levi's Periodic Table uniquely separates the narrator's short stories into separate chapters titled with relevant elements of the periodic table. It can be difficult to see how these seemingly very different elements, with vastly different properties such as freezing points, melting points, molecular masses, and atomic radius, can somehow join together to create new compounds that ignite years of research and thereby become the core of many's life. It is even more puzzling how these elements can also figuratively relate to each other to capture coherently aspects of the narrator's life. Just like how the elements can react together to form new compounds that are totally as expected or completely unpredictable, so too can humans interact with each other with profoundly different results. Every single chapter of Levi's book shows this theme clearly, from the way we can degrade each other to the manner in which we can inspire each other. The chapter, "Zinc," however, is especially remarkable. Zinc, a metal used in making many different alloys, which by definition are compounds made of several metals whose properties can be significantly different from the metals from which they originated, is used as a main theme in describing the people that surrounds the author in his laboratory

class. In this chapter, zinc, as well as science in general, plays an apt role in establishing several relationships, however different they may be.

Science inspires the feverish dedication Caselli shows for his superior, Professor P, despite his stingy ways and disagreeable character. After having a fair amount of experience running a Chemical Institute for many years, Professor P. still stuck to his old habits in conserving and recycling everything in his lab. His students used such words as “ferocious coldness”, “ostentatious prejudice,” “the enemy of all forms of rhetoric” (p.29) in describing him and the way in which he conducted his laboratory experiments. The narrator himself, before stepping foot in his lab, had heard a handful of stories describing Professor P.’s fearsome and strange ways. Yet despite all this, Professor P. has one extremely devoted admirer, his lab manager and the narrator’s supervisor in the lab, Caselli. Although very different, no two people seem more fit for each other, and no other relationship seem to make more sense. Professor P. is demanding in theory but lax in applying his own principles, while Caselli is obliging but meticulous when it comes to carrying out all elements of running a fine-tuned Chemical Institute. Caselli is quiet and modest, and Professor P. has no qualms about letting it be known what he requires of his students. Yet, despite the personality differences, Caselli “loved P. with a bitter, polemical love,” and was “his shadow, his earthbound incarnation” (p.32). Caselli could have withered under working under his difficult boss, but instead he flourishes in his role as someone who serves Professor P. and is able to practice a power of his own in running a lab that is up to P’s standards. At the core of this relationship is fundamentally their love of science, and their goal of furthering it, whether through their own research or

through imparting knowledge to their students. This love of science, which binds them together, has led to a deep and faithful relationship that has lasted over 40 years. Despite their own personal flaws, whether it is that one is too strict and the other too timid, when put together, they just seem to work, “in the exercise of their function” (p.32).

Another way in which elements and the world of science connect people is shown by the dynamics of the laboratory. It is fascinating the idea of closed spaces and the interactions that they force, whether on a scientific or everyday level. The standard requirement for elements to mix and react is that they are in close proximity to each other, whether forcibly so or not. Far apart, two elements are able to retain their unique qualities. However, the fascinating part of science is what happens when things are combined through various ways. Two separate identities with their own functions and properties, when put together in a contained space, can somehow create something so completely different that it often takes the human mind countless years to decipher and completely understand. Scientists are constantly working with various contained spaces, from jars to Petri dishes to beakers, all to keep unwanted elements out. What’s fascinating is that they themselves are mixing in a contained space of their own. The contained space of a laboratory is like its very own experiment. As each student is handed their own distinctive element to explore, different techniques and approaches are used, depending on the properties and appropriate uses of each element. And although each student has a specific and unique goal, the lab seems to be a uniting space where all these different ideas are allowed to mingle and to find some commonality. If ever one needed a break from work, one could “take a stroll around the lab and see what’s new and

what the others are doing” (p.34). There are some in the corner intently focused on executing their experiments, while others take their time to relax and daydream while their work is going on. It is notable the individualism of each scientist in the laboratory as he is assigned a particular element and expected to work independently contrasts with the spirit of collaboration that is inherent in working in such close quarters with other minds. It is not unlikely that, alone, the scientist can execute his experiment a certain way, but when encouraged to mix and interact with others, two or more great minds can think up incredible things. The laboratory and science, through the ideas that they inspire, bring the different elements of the laboratory together.

From these interactions within the laboratory that sometimes ends in amazing results, it is not surprising that there arises a certain dependency among elements in that space. Although this chapter is distinctively named “zinc,” it is not the only chemical compound mentioned and certainly not the only one in the laboratory. While the narrator is working on zinc, others are handed marble, or bromine, or boric acid. Zinc, on its own, is a boring metal, and definitely “not an element that says much to the imagination” (p.33). It is commonly used in soap for laundry, and it neither known for its toxic quality nor the amazing reactions it is capable of on its own. What’s fascinating about zinc, however, is the reaction it’s capable of when allowed to contact with certain acids – particularly sulfuric acid. Pouring the acid over an impure piece of zinc completely gulps it up and transforms the element into something different. Zinc, in its pure form, is able to resist this attack. Impure zinc, therefore, is dependent on the other miniscule elements that play a role, however tiny, in its compositions to cause a strong and powerful reaction.

Without the 0.02% of Element X or the 0.01% of Element Y to help it out, zinc is just another boring metal. Therefore, it is not surprising that Levi “praises impurity, which gives rise to changes, in other words, to life” (p. 34). Similarly, in the world of science today, scientists depend on each other for great discoveries much as the elements depend on one another for their changes and findings. The world of science and research is so immense that there is no reasonable nor imaginable way for one scientist to tackle the many questions that arise on their own. It is only with collaboration and working together, even if it is just to share the answer to one seemingly insignificant question, that new discoveries are made every day, and change is enabled. Researchers are always building on past research and the work of others. One element in a new study sparks the interest of another scientist, and from then, the trend of progress on one topic, or even many related topics, continues.

Science also has the ability to present new opportunities and forge relationships that one thought were impossible. The narrator was surprised with a certain amount of pleasure to discover that Rita, a timid and mousy fellow student, is assigned the very exact element he is – zinc. There was something about Rita, perhaps it is her isolating manner and lack of friendliness, that formerly prevented the narrator from interacting with her. Through the laboratory work and the common element they were each working on that connect them, there suddenly existed “between Rita and [the narrator] a bridge, a small zinc bridge, fragile but negotiable” (p.35). Only through the foundation of a common laboratory experiment was the narrator able to muster up the courage to approach her. Although the conversation wasn’t exactly as thrilling as planned, the

narrator was satisfied with the interaction, which included a contrasting view of a novel both had read. He discovered a girl that was entirely different from him, not only in terms of analyzing a text, but in the way she saw the world and lived her life. Only through their assignment in working with zinc was the narrator able to find this out about Rita. As the narrator walked Rita home, he “felt exhilarated and victorious,” at having built a small zinc bridge, no matter how fragile and unstable.

Levi uses the different elements, the titles for the chapters in his novel, to describe the relationships that his narrator encounters. “Zinc” was notable, despite its being only a few short pages, because it illustrated clearly one of the other’s main themes in the novel: science and the relationships that it is able to create. That a field that is built around hard facts such as rules, formulas, and equations can create relationships of feelings and related abstractions is something that is truly fascinating. Science has the uncanny ability to connect us to one another, in a way that neither the theories of physics, chemistry, or biology nor any equations could ever explain. We can see this through Caselli and Professor P.’s work relationship, the unity around the students the lab, and Rita and the narrator’s new friendship. Science, like life and the relationships that we form, are unpredictable and random, but quite fascinating.