

More than a Molecule

You may not have ever heard the term poly-aromatic hydrocarbon before, but you almost certainly know what they are. Made up of two or more rings of carbon and hydrogen molecules, different configurations of these tiny structures are found in a variety of oils. When poly-aromatic hydrocarbons are released into the environment, as in marine oil spills, numbers matter. The quantity of molecules determines how they will interact with the ecosystem and how difficult it will be to clean up. The number of gallons spilled impacts the legal implications for the responsible parties. The distance they spread is a deciding factor behind which avenue responders will choose.

When it comes to poly-aromatic hydrocarbons, counting is important. But the ramifications of these tiny structures are also, at times, utterly unquantifiable. When barrels of oil are released into the environment, the species and ecosystems at risk may spark debates over human and animal rights. If both otters and sea urchins are at risk, which should responders save first? If one response method is better for human economic resources and the other for the environment, which should we follow? These issues are more complex than bare numbers. Not everything that counts can be counted, and in this same vein, not everything that can be counted counts. Human economic interest may total billions of dollars, but that sum may be insignificant in the shadow of overall situational considerations.

In this way, poly-aromatic hydrocarbons are much more than a term in organic chemistry. In their profound significance, they exemplify the interconnectedness of science and the liberal arts. While chemists may help us understand how the number of molecules will affect their persistence in the environment, writers in the humanities allow us to theorize why the environment is important to us and what it means to keep it “pristine.” While biologists may tell

us how oil coating an animal's fur will impact it, philosophy allows us to decide whether or not we have a moral obligation to save that animal. While mathematic calculations may predict how the oil will spread, legal frameworks allow us to decide how that translates to adjudicative action. While science may tell us what will happen after a spill, the liberal arts allow us to paint, in our literature and poetry, a rich picture of the type of world that may emerge as a result of our actions. Science and the liberal arts are not mutually exclusive, and numbers are inseparable from the larger humanistic contexts that they occupy.

The multifaceted importance of poly-aromatic hydrocarbons sparks debates so deep and entangled that it would take a village to begin to sort them out. Perhaps, then, this is what we need: an educational village devoted to the larger problems that are currently overshadowed by the controversy between STEM disciplines and the liberal arts. Poly-aromatic hydrocarbons are just one example of how different realms of knowledge can be synthesized to create a rich picture of contemporary issues.