Maimonidean Perspective on Preserving Water Quality

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Water has always played an essential role within Jewish life. Water is compared to be as vital as Torah, in the sense that they are both indispensable life sources[1]. There are many health benefits that are associated with drinking water. Water can turn an arid wasteland into a lush field. Before the Israelites entered Israel, they faced issues regarding their sources of water. During their 40 years of wandering through the desert, water was central to the collective experience of the Israelites, and elicited numerous complaints and lessons. In Masechet Taanit, three people are given credit for sustaining the Israelites while they were in the desert. Miriam is listed as one of the three and her crucial contribution to the Israelites was water. When she died, there was a major concern that the Israelites would die in the desert because with Miriam's death came the loss of the water she merited [2].

Water was used in the holiest Jewish ceremonies—it played an essential role in the *Beit Hamikdash* through purifying and cleansing both objects, animals and the priests. A priest must wash both his hands and feet before entering the *Beit Hamikdash* and before reading certain books as well [3]. Jeremiah called God, the "Source of Living Waters" because he too recognized that water was one of the most important ways God granted people life [4].

Until modern times and the inventions of drip irrigation and other water related innovations, Israel faced water insecurity and a farmer's produce depended on the rain or lack thereof. Rabbis argue that this is by design as it allows the Jewish people to realize that God is the provider for all their needs, not just water [5]. Countless Jewish texts reinforce this thought as they are replete with appreciation for and recognition of the importance of water. Dr. Jeremy Benstein discerned that Biblical Hebrew contains at least six different words to describe liquid precipitation (*geshem, matar, yoreh, malkosh, revivim, se'irim*) [6]. This illustrates that water was at the forefront of peoples' mind and a constant concern for them.

Human beings must have a sufficient supply of high-quality fresh water in order to survive. Today, humanity is faced with a threat to their water quality, which is becoming a major environmental issue. Relentless plastic use is severely harming the water quality because plastic is entering water sources and takes ages to degrade. In 2017, researchers estimated that since the invention of plastic, humanity has produced 8.3 billion tons of it. Unfortunately, the amount of plastic produced is increasing every year. A 2018 study predicted, using data from aircraft and multi-vessel surveys, that the "Great Pacific Garbage Patch" contains around 79 thousand metric tons of ocean plastic. This number is 4 to 16 times higher than the ones previously suggested [7]. A beached whale was found in the Philippines last year with 88 pounds of plastic in its stomach; however, this whale is not the only animal suffering. More and more dead marine animals are being found with plastic in their stomachs [8]. UNESCO estimates that 100,000 marine mammals die each year because of plastic pollution, either because the plastic blocks the entrance to their stomach, thereby causing death by starvation, or by poking holes in their internal organs [9].

Moreover, it is not just large marine animals being affected. Through a combination of physical and chemical processes, most notably hydrolytic degradation, oxidation, photodegradation and mechanical disintegration, plastics fragment into micro- and nanoplastics. These nanoparticles could then be unknowingly ingested, inhaled or absorbed by fish, birds and humans. Ingestion is the main pathway that brings microplastics into the body; for example, microplastics can enter one's body simply through drinking contaminated water or eating seafood. Traces of microplastics have already been found in certain seafood species, like fish, shrimps, and bivalves. Microplastic particles have even been discovered in food not from water sources, such as honey, beer, salt, and sugar [10]. Through the use of FTIR spectroscopy, microplastics have been detected in tap, ground and bottled water. From 159 samples of tap water, 81% contained microplastic particles and out of 11 different bottled water brands, 93% contained microplastics [11],[12]. These shocking, new discoveries demonstrate the wide-spread reach of nanoplastics along with the food they are polluting.

Nanoparticles are toxic to humans, and are likely carcinogenic as well. Many chemical additives are applied to plastic to improve the final product, however, these chemicals can and have leaked. When organisms are exposed to it, it can cause endocrine disruption or acute toxicity. Scientists have discovered that airborne nanoparticles caused dyspnea due to airway and interstitial inflammatory responses [13].

In Deuteronomy 4:9, the verse states, רַק הִשָּׁמֶר לְךָ וּשְׁמֹר נַפְשְׁךָ (But take utmost care and watch yourselves scrupulously [14]). Maimonides, medieval rabbi, physician and philosopher, wrote, "the sages have prohibited many things because they are dangerous to life. If anyone disregards them and says: "What claim do others have on me if I risk my own life?" or: "I do not mind this," he should be lashed for disobedience." Maimonides takes a firm approach on caring for one's soul and believes one should do everything they can to avoid danger befalling themselves. One is even supposed to ensure their actions, or lack thereof, do not cause harm to anyone else. In an earlier section in the chapter, Maimonides wrote one must build a fence to prevent someone from accidentally falling into a well or pit on his own property, even if the person was not supposed to be there in the first place. It is considered to be a positive *mitzvah* to remove any threats of life. This includes not drinking from a river at night because one could swallow a leech by accident, going over a shaking bridge for fear of collapse or not putting coins in one's mouth because a sick person might have spit on them [15]. The traditional Jewish belief is that one's body is a loan from God, therefore, one must do everything in his power to take good care of his or her body.

In regards to nanoplastics in the water and air, Maimonides would argue that one should do everything they can to avoid drinking from the contaminated water. However, because it is so prevalent and unavoidable at this point, people should actively use less plastic on a daily and yearly basis in order to slow the amount of plastic entering our waters and by extent, our bodies. While one cannot avoid nanoplastics entirely, they should put boundaries on the amount they consume by reducing the amount of plastic they use. Plastic fragmentation has become a monumental environmental problem and without widespread efforts to curtail the world's plastic use, it is only going to become worse. The Jewish world, along with the world at large, should aim to use less plastic and find feasible alternatives. A large transformation could occur if every person made a few changes within their daily lifestyle. By saying no to single-use plastics, by using reusable containers and silverware and by avoiding products containing microbeads, the world can become a safer, healthier place for everyone to live in [16].

Acknowledgements

I'd like to thank my parents for always encouraging me to explore and delve into topics that interest me. I would also like to express my gratitude to Dr. Alyssa Schuck and Ms. Claudette Mikhli for showing me how great and vast the world of science is.

References

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