**Part 4 of one student's tale (the coffee shop discussion).**

The four electrons finally met again at the local coffee shop and began to compare their own bonding experiences.

"You're absolutely wrong, Frost!" Crystal exclaimed. "Covalent bonds don't experience more interactions than ionic bonds. It's just that my sodium was attracted to chlorine, and the chlorine was attracted back. Ionic bonding isn't a one-sided affair!"

"I suppose," Frost replied. "But if you think about it, our bonds are similar. Sure, your bond didn't have any molecules or polarity, but in the end it's all about filling up that outer shell with the octet rule."

"Absolutely," Roger said. "You know, our bonding is basically the same. Our atoms both attracted other atoms. When we bonded, we share[d] electrons."

"We were sort of similar too, Roger," Crystal added. "After all, it's all about filling that outer shell any way you can."

"I feel so out of the loop here!" Nemo whined. "My bonding was so much different that all of yours! Was anything the same?"

They all thought for a moment. "Well, sure!" Crystal said. "Both of our bonded structures were in some type of network—everyone relied on everyone else. Ionic work in big lattices, and metallic bonds work in big structures too."

"You're right!" said Frost. "Of course, metallic bonding is unique. In it, electrons are delocalized and can leave the constraints of their nucleus. But in Crystal's bond it was a rigid lattice made up of strong ionic bonds. But as Crystal said, all types of bonding have the common goal of gaining some type of stability, no matter which way you bond."

"But when they do," Nemo replied, "Sometimes the bonds or electrons can shift. For instance, your bond, Frost, had its bond angles all askew because that was the optimal position for the two hydrogens attached to your atom. And in my bond, the electrons have the ability to shift, allowing my element of gold to be ductile and malleable."

"So then," Frost began, "I suppose you can just say that all bonding is some form of a covalent bond."

Sitting around the table, the electrons suddenly froze, thinking hard. "I sort of agree with you, Frost." Roger began. "I mean, our bonds were sort of different in that no pulling or pushing of electrons took place, and there were no weird bond angles. But in the end, it's all getting along and sharing electrons, right?"

"False!" Crystal exclaimed. "You're forgetting: Covalent bonds can only happen with certain nonmetal elements. Ionic bonding accounts for metals and nonmetals and the bonding of polyatomic ions with metals or other polyatomic ions. Without ionic bonds, this Earth wouldn't exist!"

"Exactly!" Nemo exclaimed. "Can't you see, Frost, that covalent and ionic bonds are quite different than metallic? Only in metallic bonds do electrons become delocalized and close in the band gap!"

"Oh," Frost sighed. "I suppose you're all right. All bonds have the same goal, then. But the ways in which they achieve that goal seem to be wonderfully different!"