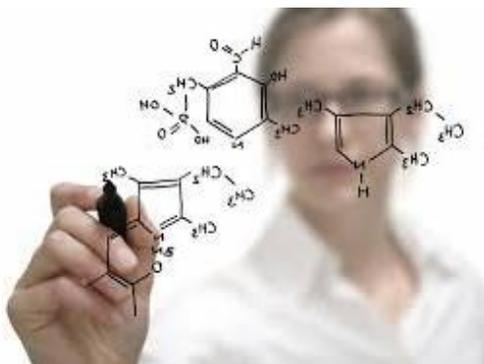


The Braindoc's Blog

REFLECTIONS: MIND, BRAIN, SPIRIT

Bonds of Friendship: Life Lessons from Chemistry



Bonds of Friendship: Life Lessons from Chemistry

I have always enjoyed the sciences, especially the study of chemistry. Chemistry helps one to understand the interactions of matter down to the smallest particle. When I enrolled in my first chemistry class, I had much trouble grasping some of the basic concepts as a visual minded individual. This was especially true when we covered the whole discussion of the “mole” of a substance.. For all of you who do not know this term, it deals with the mass of an element given 1×10^{23} units. If you wish to compare apples and oranges for example, you would put the same weight of apples and oranges in boxes side by side and count the number of items that make up the pound of apples or oranges. So, given a standard weight of reference, one is looking for how many apples weigh as much as ten oranges. It is an over implication but it helps us to standardize small particles.

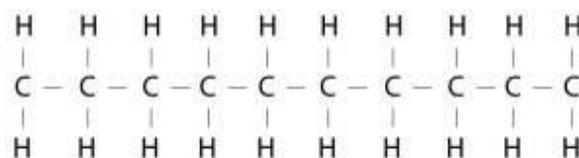
My way of grasping information, like visualizing chemistry problems has helped me to learn sciences more effectively, but it especially helped when applying metaphors to other disciplines. I have also become aware that the “truth in a discipline”, seems congruent to the “truth held” in other disciplines. Visual models help me to grasp truths more effectively, especially in social sciences. Now, I will introduce a very interesting chemistry concept that can be very useful to us now.

On the stage, the curtain is pulled back. Let us give a warm welcome to a “lipid molecule (people often just call him ‘fat’).”



Fat Molecule

We do not need to know much about chemistry by just seeing this lipid molecule model. You will notice many repeating patterns in this organization. It has what is called a “carbon backbone” (the black part) like many organic molecules in our world. Notice also, that there is many Hydrogen molecules (white parts) hugging the carbons (black) in the chain.

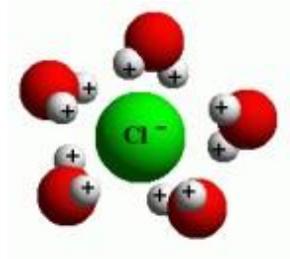
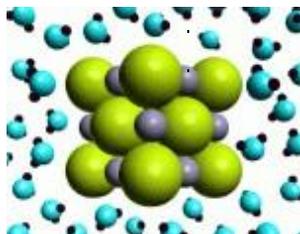


These chains stay together by charges, known as bonds. The positive charges of hydrogen share a close space with available negatively charged carbons. When two or more different chains sit too close together, side by side, they will repel each other. It would be like holding two magnets close together that are the same pole. They push each other away. The positive bonded charges of the hydrogen atom of one lipid molecule tries to move away from the hydrogen atom of another lipid molecule close to it. You probably heard somewhere that “opposites attract and same repel”. This is very true in chemistry.

When lipids (or fats) are crowded in compact spaces they tend to push each other away, which means they avoid rubbing against each other. That is a quality about lipids. They minimize friction, meaning it can be quite slippery. Knowing this, you can probably think of other substances that you found slippery. So do you think slippery substances have similar properties? Yes, in fact they do; whether it is a drop of oil for a hinge or a banana peel that makes an actor slip and fall for a good laugh.

There is great lesson we can grasp through their “structural behavior” when a small piece is removed (e.g. a hydrogen atom is removed). The loss of hydrogen from paired carbon makes that empty carbon more negatively charged. When this happens the carbons will share a neighboring hydrogen, like two boys dating the same girl. If you compare Saturated and unsaturated lipids (like when you are buying butter or oil from the grocery store), this is where these terms apply. Saturated means all the carbons have their paired hydrogen in space. Unsaturated means at least one carbon is sharing hydrogen with another carbon. Unsaturated lipids are a little less stable than saturated lipids.

Notice, there are just two parts, a sodium atom and a chloride atom. What is very different here is there are not any other competitions for the bond they uniquely have. Usually a medium has to be available for them to let go of each other. This is what happens as it dissolves in water. The water (H_2O), as a medium becomes aligned in ways that react with chloride and sodium, coming between them to disassociate.



Now outside of a medium change, it would be very difficult to break the bond in salt. However, if sodium and chloride get separated without a stable medium, something very significant takes place. Both sodium and chloride become very unstable and search desperately to unite with anything, if not each other. The highly charged parts, sodium and chloride become radicals.

Now an unpaired Chloride would seek other Chloride atoms for stability. This ultimately results in Chloride gas; a poisonous and toxic gas.



The Sodium on the other hand becomes flammable and has the capacity to burn a hole through carpet!



Ok, what profound truth can we extract from this? We are all just like molecules, with social bonds through our relationships. Some people have only a few relationships like salt; those with whom they share memories, experiences and events. Living life without significant companions to reciprocate may leave 'radical' perspective and us more vulnerable to stress after loss. When we do not cultivate meaningful relationships, we are much more likely to become reactive and the lack of support may contribute to an emotional imbalance when a loss or trauma is experienced.



A unique reality that only two isolated partners share exclusively can be dramatically altered after a loss of the other partner and in such circumstances. A survived partner may be severely impaired to function in their daily activities.



In fact, the survived partner may even lose their limited self-identity and may be essentially lost in their routines and connections with others apart from their partner. They will need time to redefine themselves through other people with some common interests until a limited redefinition can help them to go on.



Some people have a large number of people with whom they share many experiences. Such people tend to always have bonds with others and share on deeper levels, and on many different levels with others. They are often a part of either a large family, a club, a church or community, or may have been raised with a community mindset. Such people are better equipped to share after they experience a significant loss. Just as a lipid molecule can twist and rotate when hydrogen is removed, so it is with those that belong to a larger stable community. They can access the sympathy from others, and later when a close friend experiences a similar loss, the bond can be further reinforced by empathy instead of sympathy.



When someone builds long and lasting relationships with a community, when both joys and sorrows come their way, it helps to balance the variations of experiences across the group. It is through the company of established, mutually regarded companions that permit us the strength to face life's unexpected challenges optimally.

How one deals with a lost family member or partner in life have much to do with how well that loss can be shared with others with whom we are intimately connected . Culturing quality relationship and sharing favorable experiences with others, while making good memories with others of similar core values, all serve to strengthen bonds of your relationships. When anyone shares a bond with another person then life's challenges will take a wider impact the loss, which is shared.



One writer once put it , "friendship halves our sorrow and doubles our joy". It equips us with more meaningfulness and stability to endure the unexpected events in our lives. Take the time to invest in your friendships. It is an investment you cannot effectively live without.

Greg

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[Posted by braindoc on February 18, 2015 in Behavior under the Lens, Insights and Therapies, Life's Backpack, Mind & Brain, What keeps me Steady](#)

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