

So, let's begin with a very easy concept (sarcasm)

1 | What is life?

When is someone dead?

This is hard, so let's instead think about what a child?

Biological Female + Sperm + relative safety + Lot's of Peanut Butter => Child.

But! We know that:

- The person does not consciously go "let's create a liver", for instance
- Instead... She is following **self organization rules**
 - Pieces self organize
 - Put some chemistry into some matter, and it will organize to create a human being
- These **self organization rules** does not...
 - Need to be taught
 - Is innate to system
 - Is on both the micro and macro level
 - Micro => Cells functioning
 - Macro => Flock of birds

Self Organization Rules

Simple structures causes intricate, complicated behavior.

For instance, here's a...

Flying Vee

1. Bird, if you see another bird < 6ft, follow it
2. Bird, if who you follow veers > 30°, stop following it
3. Bird, if you follow a bird, follow on the side
4. Bird, make sure you are > 10ft from any other bird you are following

And, you get a flying Vee shape (if you click that option)!

**The information to construct a flying Vee exists bottom-up, in EVERY UNIT of the Vee*

Units that comprise life

- Proteans
- Carbohydrates
- Nucleic Acids
- Lipids

Each piece of the life units could, self-assembling, create larger units that self-organize.

The Core Rule of Biology

Things that are attracted, come together

Think!

- DNAs! (A-G/T-C)
- Cell receptors!
- Drugs!
- Reproduction!

Very often, these are resulted from chemical charges. **Simple charge differences may result massive effects** — a charge difference in one molecule could start an opioid crisis.

Types of Biology

- Translational
- Academic
- Textbook
- Education

Textbook Biology

- Journalized and formalized
- “Sum total of bio knowledge”

Academic Biology

- Scientific pursue of information
- Synthesis and discovery of information

Translational Biology

- Research with outcome in mine
- Trying to solve “a problem”

Educational Biology

- Sharing and communicating biology
- Luke De :heart: Edu Biology
- Like...
 - Convincing people to have vaccines
 - Convincing mask wearing

Think: **how would I share this information**