

STANDARD DEVIATIONS: April Fools

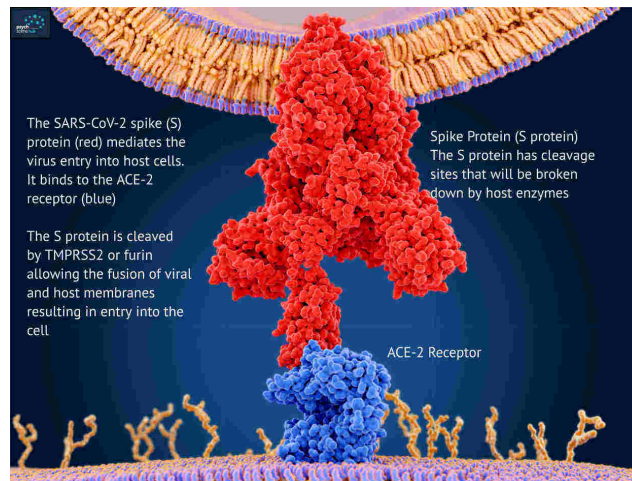
Greetings,

We're all fools at some time.

Nature seems to lead to an unlimited amount of diversity and differentiation but the acts of mimicry and deception are often used to co-opt or corrupt the benefits of a perceived uniqueness.

The world is rife with examples. From the smallest, even molecular, to the most complex, purely conceptual, levels, the power of foolery allows one individual to prosper at the expense of another.

The current coronavirus pandemic shows just how powerful the smallest of deceptions can become. Spike protein binding to ACE-2 molecules at the cell surface are how the SARS-CoV2 virus fools our cells into allowing viral entry.



{ACE-2 is fooled}

Viruses are masterful at this, and not always to our detriment. Bacteriophages are viruses that use the same simple skill to invade and infect bacteria, too. We use bacteriophage therapy to battle pathogenic bacteria in humans, in crops, and in food products (like meats and cheeses).





{Bacteriophage attach to a bacterium. Image by Dr. G. Beards}

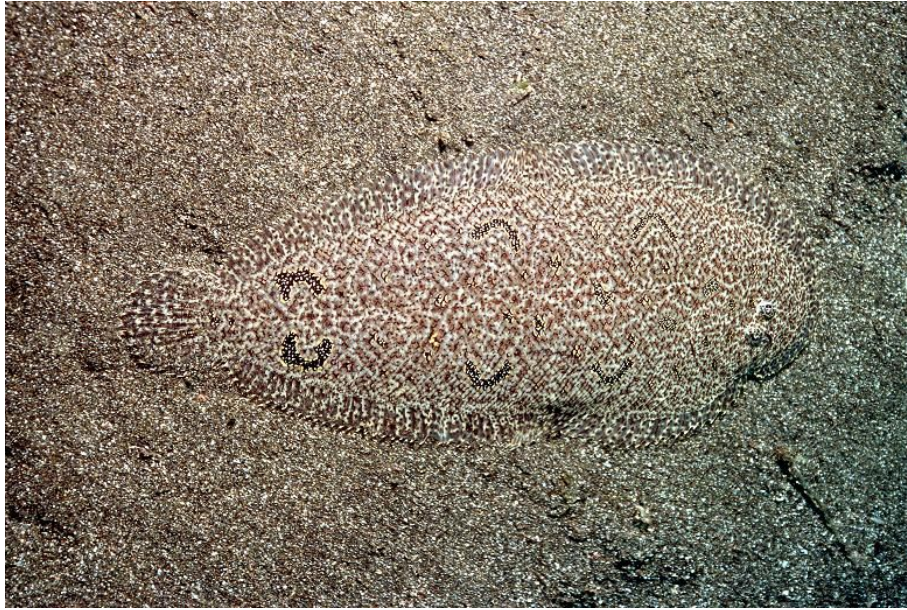
The rest of the animal kingdom has found fooling around can be helpful. Organisms across the spectrum use the acts of mimicry and camouflage for protection. Fooling predators enhances survival.



{Katydid leaf mimic}



But what's good for the goose is also good for the flounder? Another tactic is fooling prey by distraction or disguise. Some, like SARS-CoV2 are Trojan Horses; some, use camouflage.



{Stone flounder}

The scope of foolery is vast. While some use their tricks to hide in plain sight, some wear bold disguises to accomplish the same goals.



{Harmless *Pliocercus elapoides*, left, venomous coral snake, *Micrurus nigrocinctus*, right}

Others turn that foolishness on its head.





{Plants are masters of masquerade}

Birds are another group of tricksters. Some use auditory mimicry, some use visual disguises. Fooling other animals and birds allows for protection, food, mating, and species survival.





{Fork-tailed drongos fake alarms to scare meerkats when they find beetles that the bird then steals}



{Cuckoos lay eggs that mimic the color patterns of the host birds they fool into raising as their own.}

All across the realm of living things, fooling others is an adaptive form of survival. Humans are no exception. We've just taken the notion to the next level.

People use mimicry, deception, and obfuscation in all the ways that the animals and plants have developed, and then some. We tend to steal from our surroundings.

Think about it.

We use chemicals to manufacture aromas of deceit. We camouflage our bodies to deceive the animals we hunt and the mates we woo. We blend in to hide, we stand out to change our true identity.





{> \$1000/mL!}



{Should come with breath mints?}





{Camo ammo?}

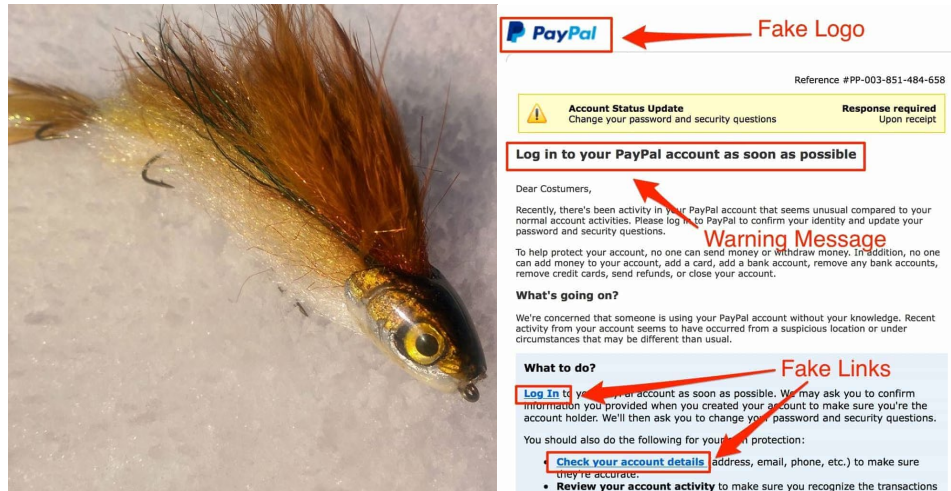
We even use tools of deception to our health advantage.



{Vaccines are an example of how we fool our immune system}

And humans can get pretty creative in their own ways of fooling others for profit. Our need for advantage is remarkable in the lengths we go to in perpetuating decoys.





{From fishing to Phishing, we try to fool someone.}

Perhaps most ingeniously we fool ourselves. We do it with intangibles that only our brains can be fooled by.

One way we do this is through fooling our beliefs. When we believe that we're right, that we're safe from risk, or that risk doesn't exist, we fool ourselves in dangerous ways. The lab bench is place where fools can sometimes be found. Simple errors in hand hygiene, sample handling, spill management, and lapses in technique, understanding, or judgement are common ways that we fool ourselves. When we convince our minds that we're safe and let down our defenses, we open the door for lab acquired infections and accidents. By fooling around, ignoring risk and safety precautions, we get fooled.

Have a great week and be safe,

Bryan

