The Bertalanffy Lecture @ COS presents

Evolutionary secrets our molecules have to tell us

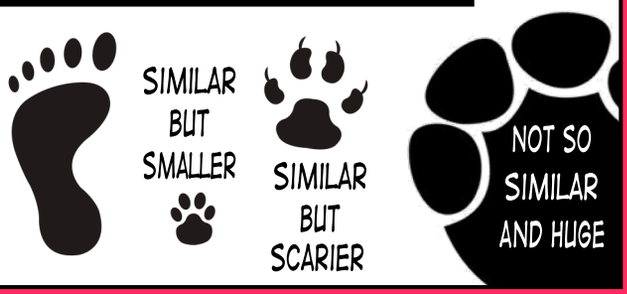
a comic inspired by the talk by Henrik Kaessmann

MAMMALS ARE FOUND IN MANY DIFFERENT SHAPES (& COLORS)

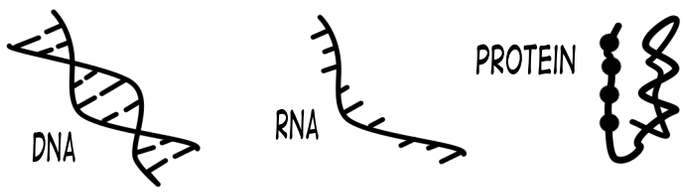
WE HAVE ONE THING IN COMMON:

BUT HOW SIMILAR ARE WE OTHERWISE?

WE CAN COMPARE SOME OF OUR EXTERNAL FEATURES:



OR WE CAN TAKE A LOOK INSIDE AND LISTEN TO THE MOLECULES WE ARE MADE OF:



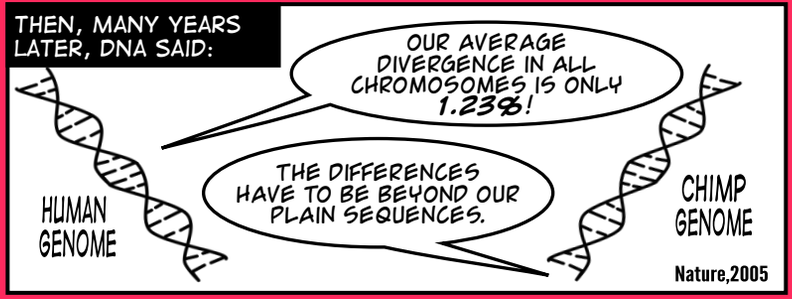
MAKES SENSE, SINCE THEIR EVOLUTION IS WHAT GAVE RISE TO ALL OF US.

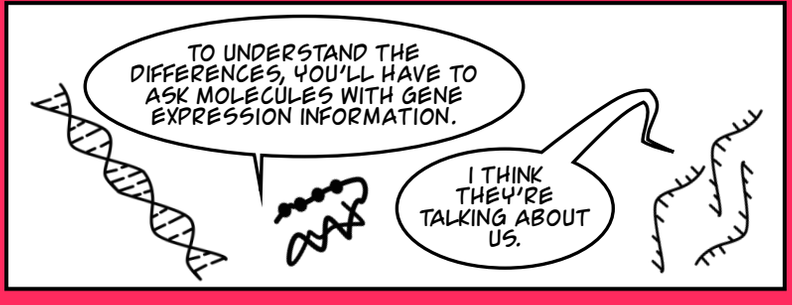
QUESTIONS OF HUMAN ORIGIN HAVE INTRIGUED SCIENCE AND SOCIETY SINCE THE POSTULATION OF THE THEORY OF EVOLUTION.

NOW WE KNOW HUMANS AND CHIMPS SHARE A COMMON ANCESTOR WHICH IS NOT SO FAR AWAY IN EVOLUTIONARY TIME. AND SCIENTISTS HAVE BEEN TRYING HARD TO LISTEN TO WHAT THE MOLECULES HAVE TO SAY TO ANSWER THE QUESTION: HOW SIMILAR ARE WE?

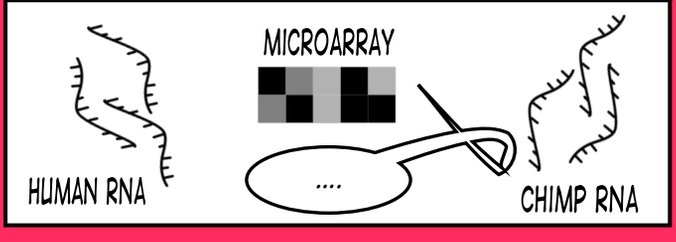
FIRST, PROTEINS – THE MOLECULES TO START THE FIELD OF MOLECULAR EVOLUTION – SAID:

THEN, MANY YEARS LATER, DNA SAID:

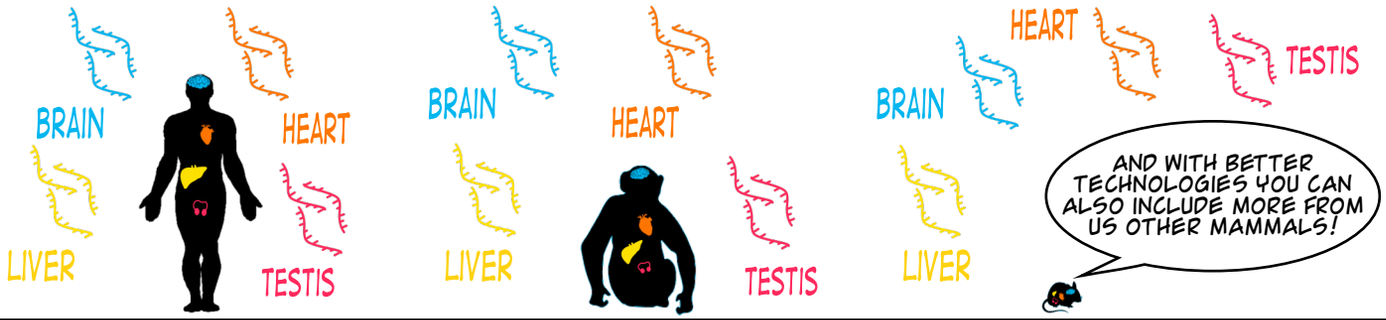




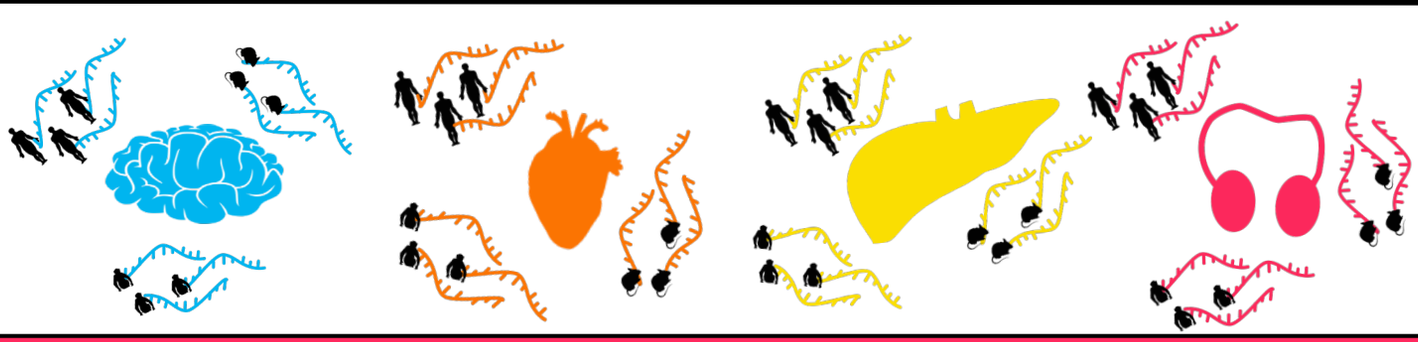
BUT LISTENING TO RNA THROUGH INTERMEDIARIES HAS BEEN DIFFICULT IN THE PAST:



NOW WE'RE BETTER EQUIPPED TO LISTEN TO RNA! AND WE CAN TAKE INTO ACCOUNT THAT REGULATION OF EXPRESSION DEPENDS A LOT ON WHERE GENE EXPRESSION IS TAKING PLACE – IT'S ORGAN SPECIFIC!

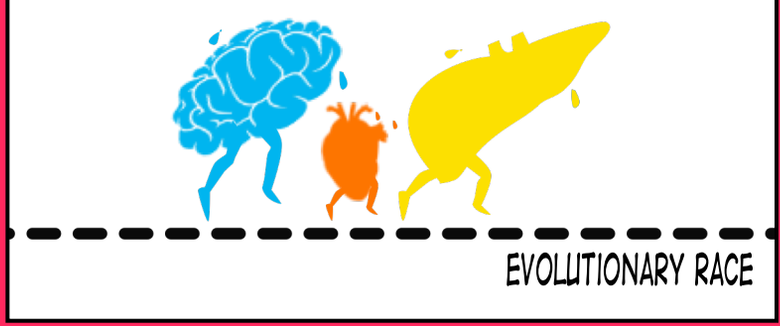


MOLECULES OF THE ***SAME ORGANS*** IN DIFFERENT SPECIES ARE ***MORE SIMILAR*** THAN MOLECULES OF DIFFERENT ORGANS IN THE SAME SPECIES!

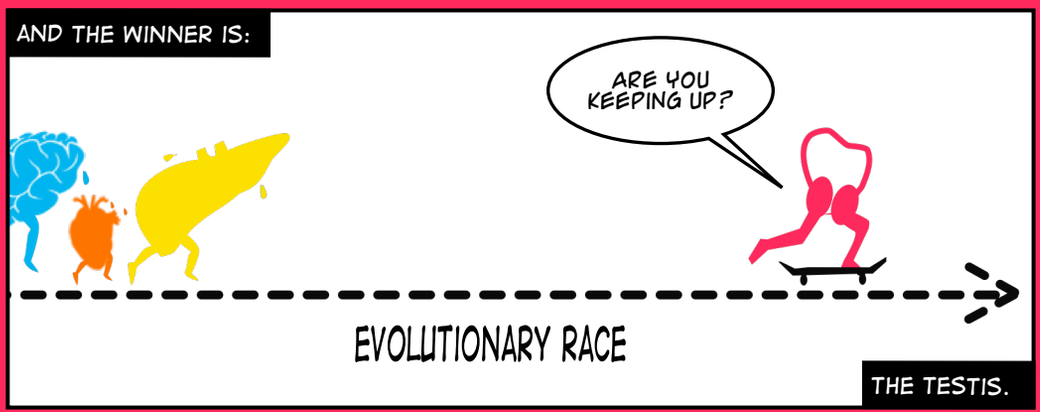


#2: NOT ALL ORGANS HAVE EVOLVED AT THE SAME PACE:

INDEED. THE BRAIN IS THE SLOWEST.



AND THE WINNER IS:



YES, BECAUSE THERE'S ANOTHER THING ALL MAMMALS HAVE IN COMMON:

AND THAT IS THE STRONGEST MOTIVATION FOR EVOLUTION AFTER ALL.

THE END.

This comic strip was created by:
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