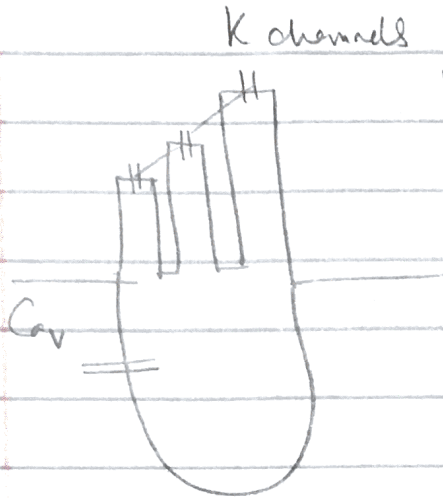
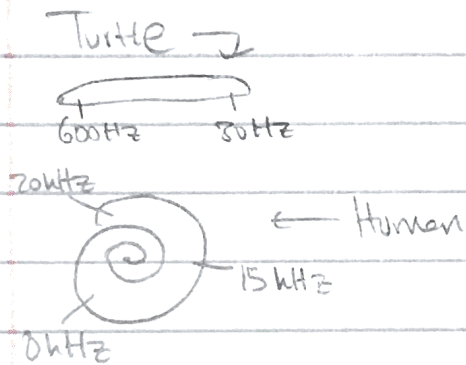


My Script for Biol



1) Hair cells are similar to electro-sensory cells

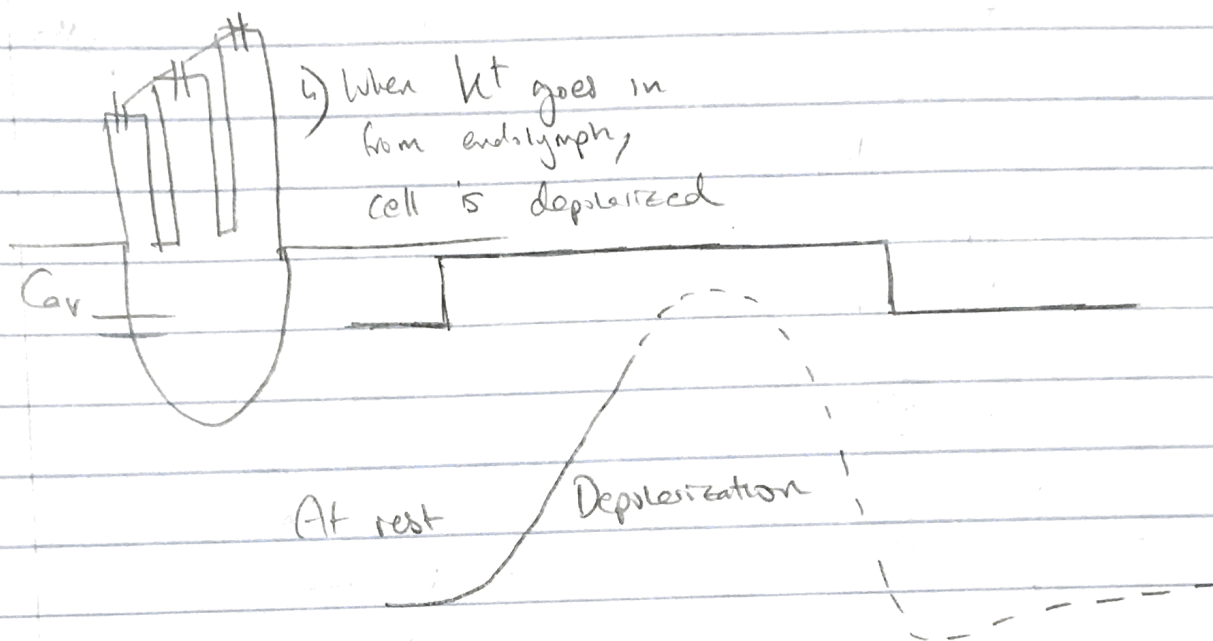
Cochlea Differences



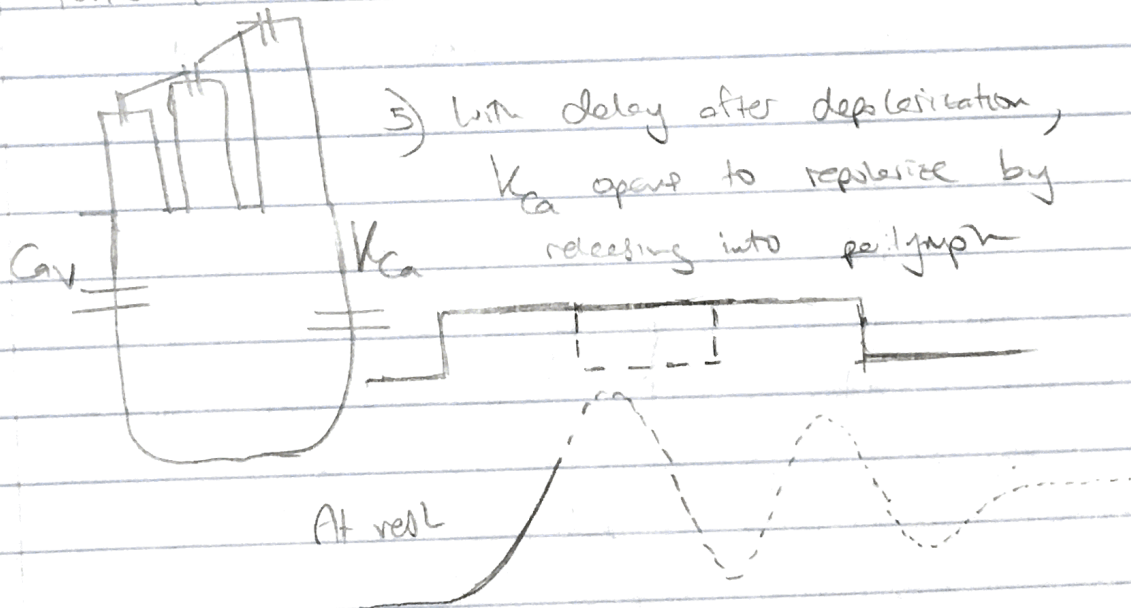
2) Turtles have much less room to allocate hair cells to rely on mechanical tuning like humans

3) Turtles (and other non-mammals w/ small cochleas) have hair cells with electrical tuning configured into them

So let's take a regular hair cell's action potential

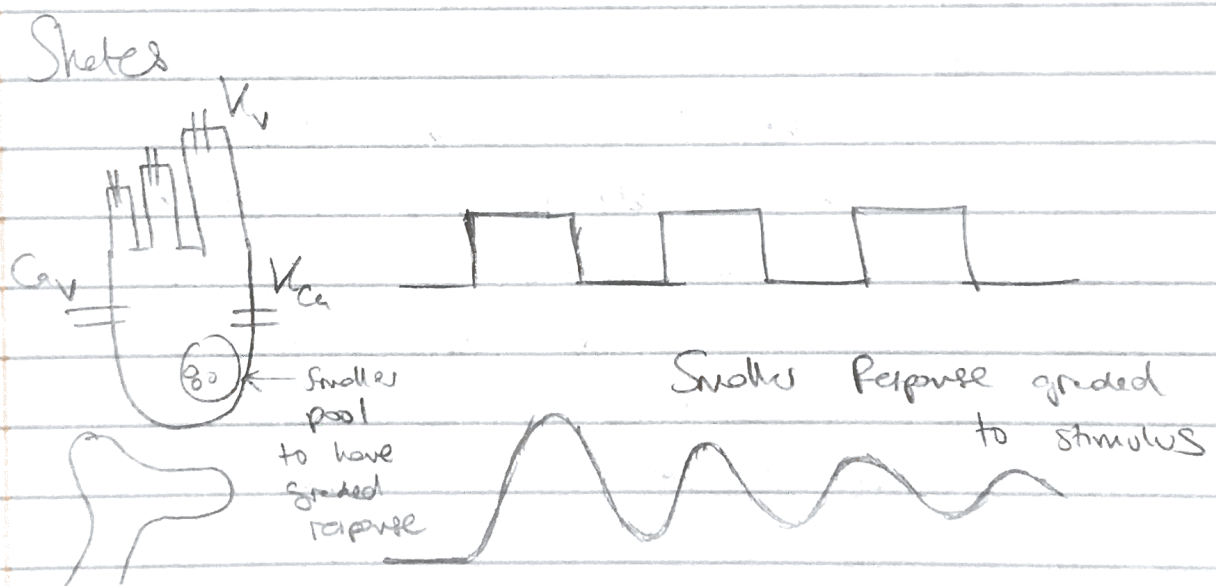
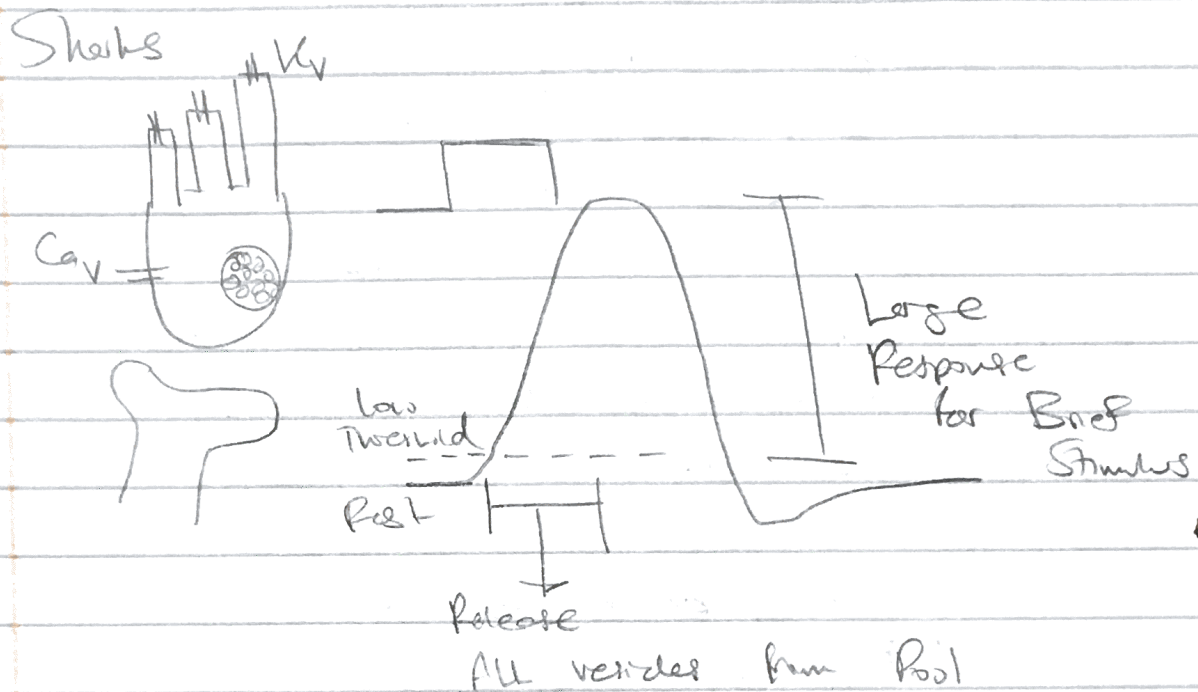


Turtle Hair Cells



iii) By having a different delay for each hair cell, cells can be coded to resonate for specific resonant frequencies by having maximal response to those stimulus.

This is VERY similar
to the differences
of shark and skate electroreceiving cells



Lines up w/ Behavioral Niches

Sharks use

electroreception to
go after prey.

It's a very short-range sense
so they need it when they're
already spotted a prey so they
don't miss the prey in a cloud
of bubbles

Sharks use electroreception similarly
but they do need it for
communication

Like we use mechanical tuning of auditory cells
turtles use electrical tuning of auditory cells,
Sharks use electrical tuning of electroreceptive cells
to be able to weight frequencies
of communication more than
other noisier frequencies.

Authors believe Electroreception can inform about how
humans solve the cocktail party problem about
choosing what to pay attention to