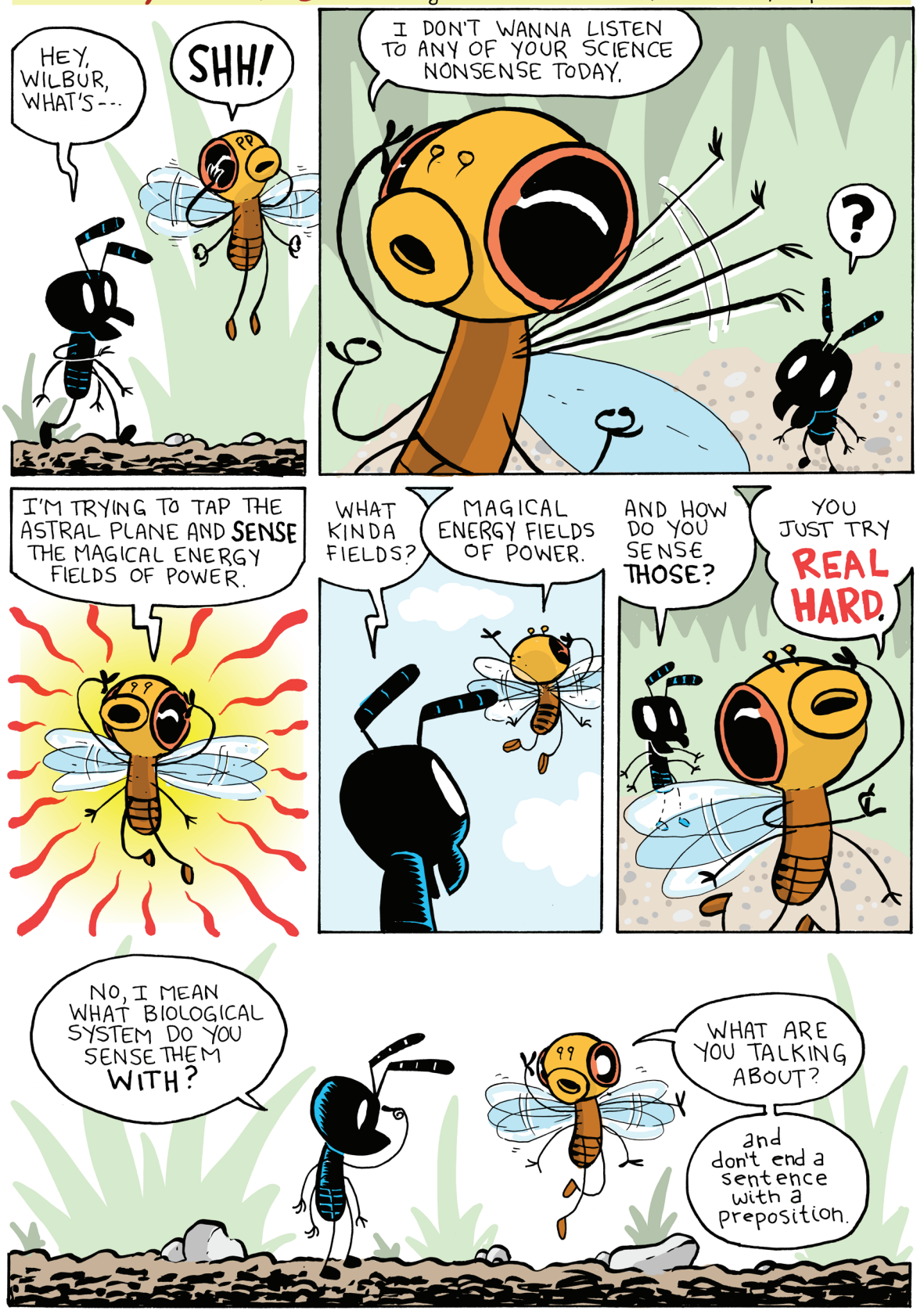
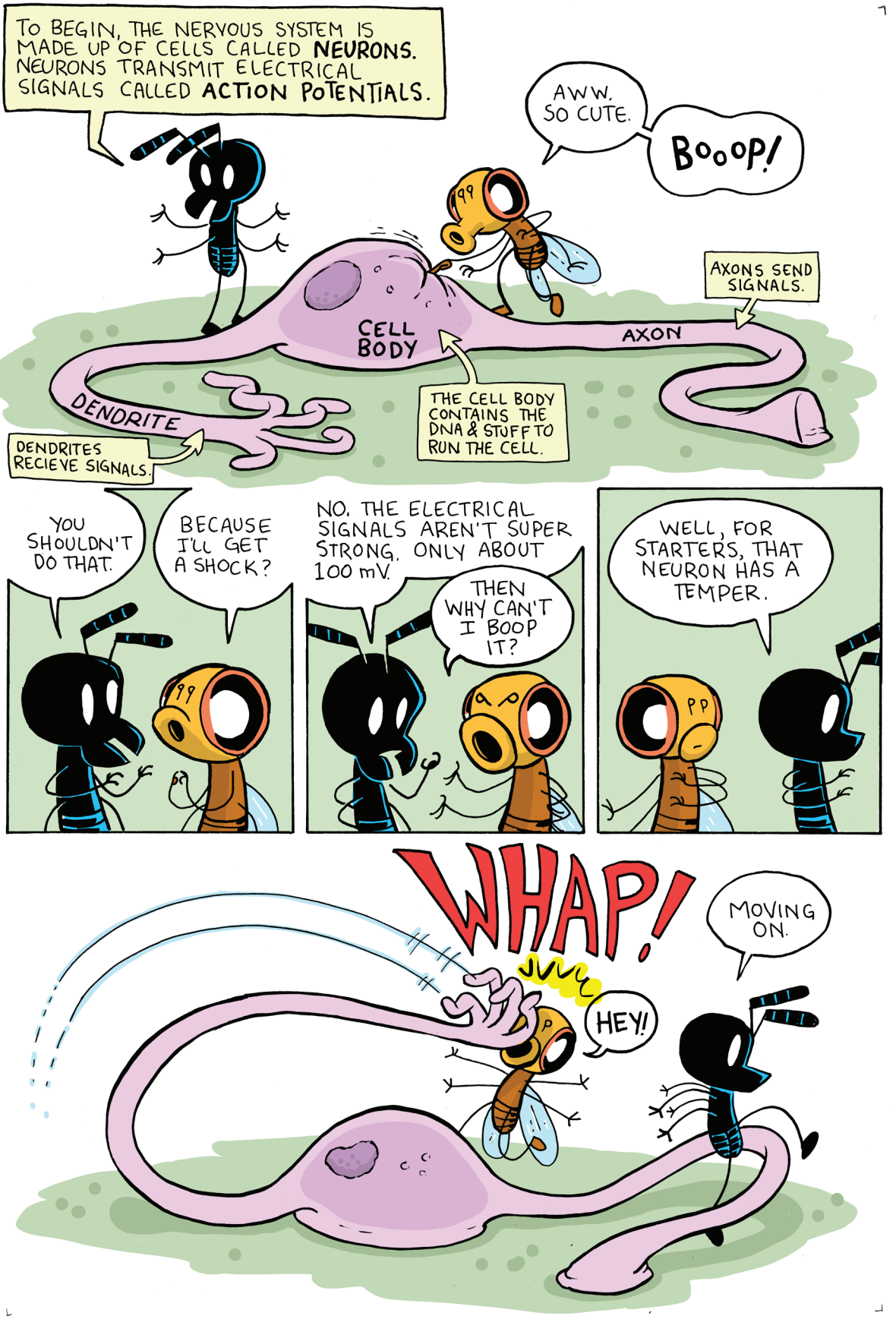
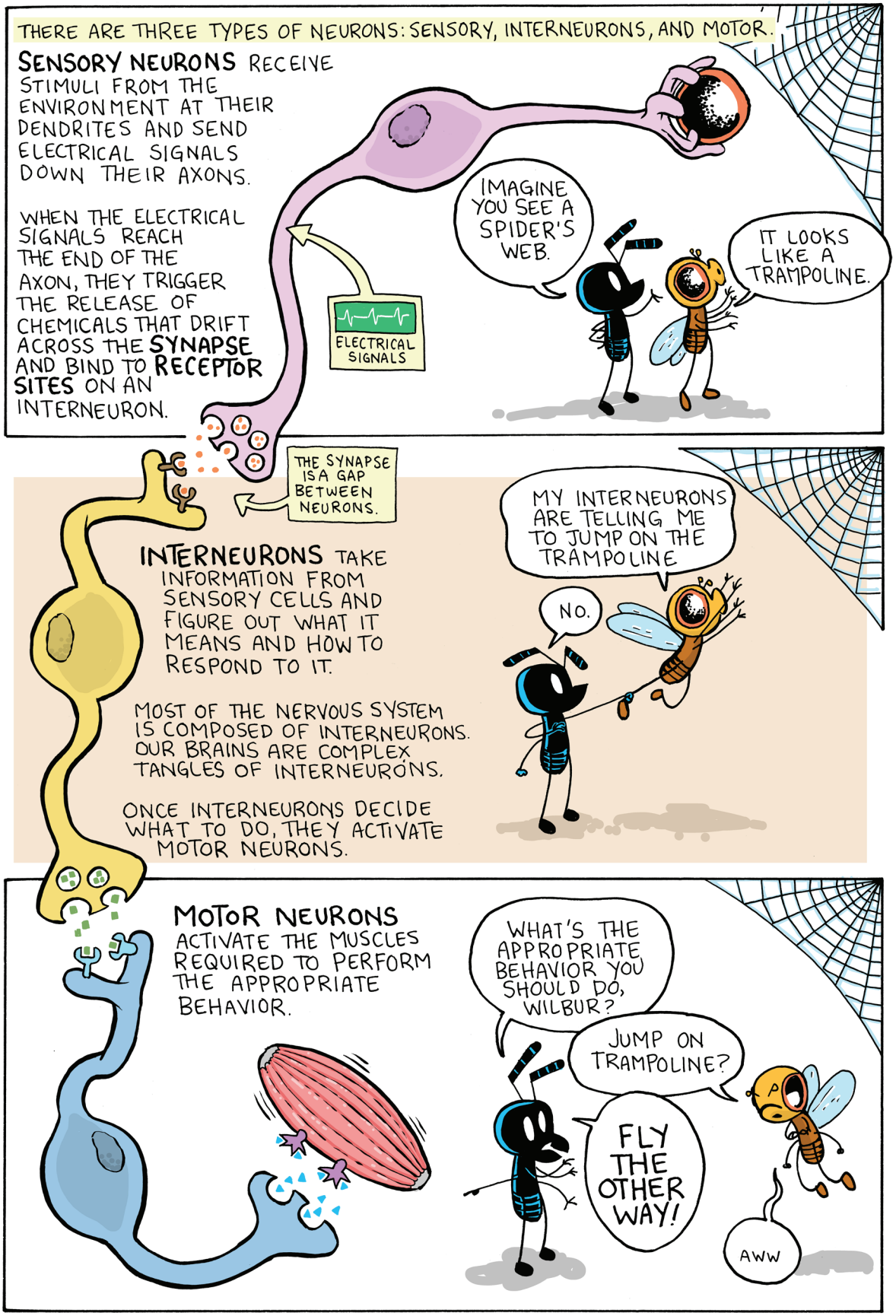
"On My Nerves" starring WILBUR & ANT EDNA by Jay Hosler

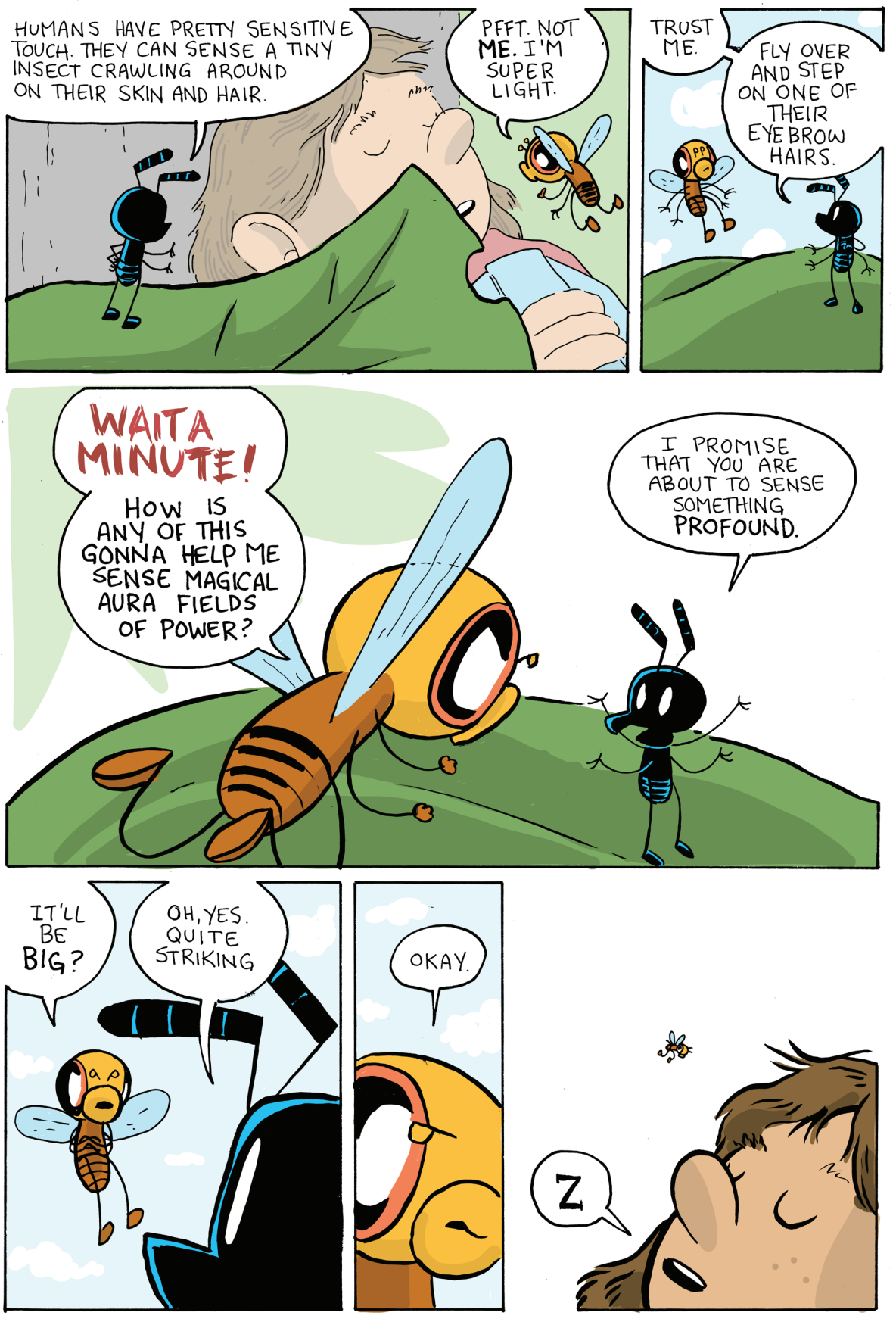



WELL, EYES SENSE ELECTROMAGNETIC RADIATION LIKE LIGHT.
EARS AND FINGERS SENSE MECHANICAL STIMULI LIKE VIBRATIONS AND PRESSURE.
NOSES AND TONGUES SENSE CHEMICALS.
SO, WHAT SENSORY SYSTEM IS USED TO DETECT "MAGICAL AURA FIELDS OF POWER?"
I DON'T KNOW.
IT'S A MYSTERY
OOO. I LOVE A GOOD MYSTERY.
CAN I HELP YOU FIGURE IT OUT?
SURE!
YES!
OK, SO WE NEED TO START BY EXPLAINING SOME OF THE BASICS OF HOW SENSORY SYSTEMS DETECT ENVIRONMENTAL STIMULI AND SEND THAT INFORMATION TO THE BRAIN. OH! WE ALSO SHOULD CONSIDER HOW THE BRAIN PROCESSES THAT INFORMATION AND EITHER STORES IT AS MEMORY OR TRIGGERS SOME KIND OF BEHAVIORAL RESPONSE.
uh...
LET'S GO!
this is starting to sound a lot less magical.

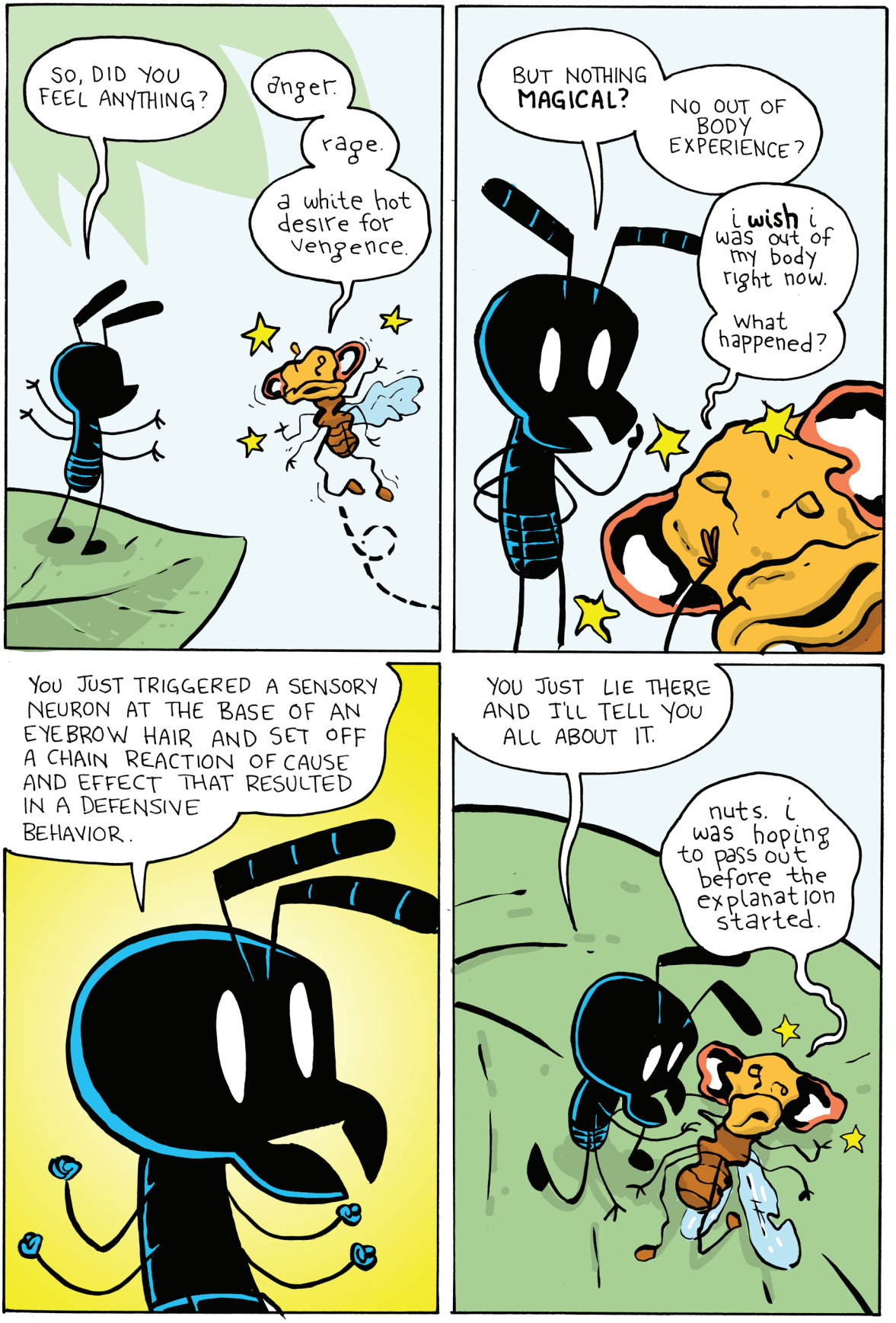

TO BEGIN, THE NERVOUS SYSTEM IS MADE UP OF CELLS CALLED NEURONS. NEURONS TRANSMIT ELECTRICAL SIGNALS CALLED ACTION POTENTIALS.
AWW, SO CUTE.
BOOOP!
AXONS SEND SIGNALS.
CELL BODY
AXON
DENDRITE
THE CELL BODY CONTAINS THE DNA & STUFF TO RUN THE CELL.
DENDRITES RECIEVE SIGNALS.
YOU SHOULDN'T DO THAT.
BECAUSE I'LL GET A SHOCK?
NO. THE ELECTRICAL SIGNALS AREN'T SUPER STRONG. ONLY ABOUT 100 mV.
THEN WHY CAN'T I BOOP IT?
WELL, FOR STARTERS, THAT NEURON HAS A TEMPER.
WHAP!
HEY!
MOVING ON.

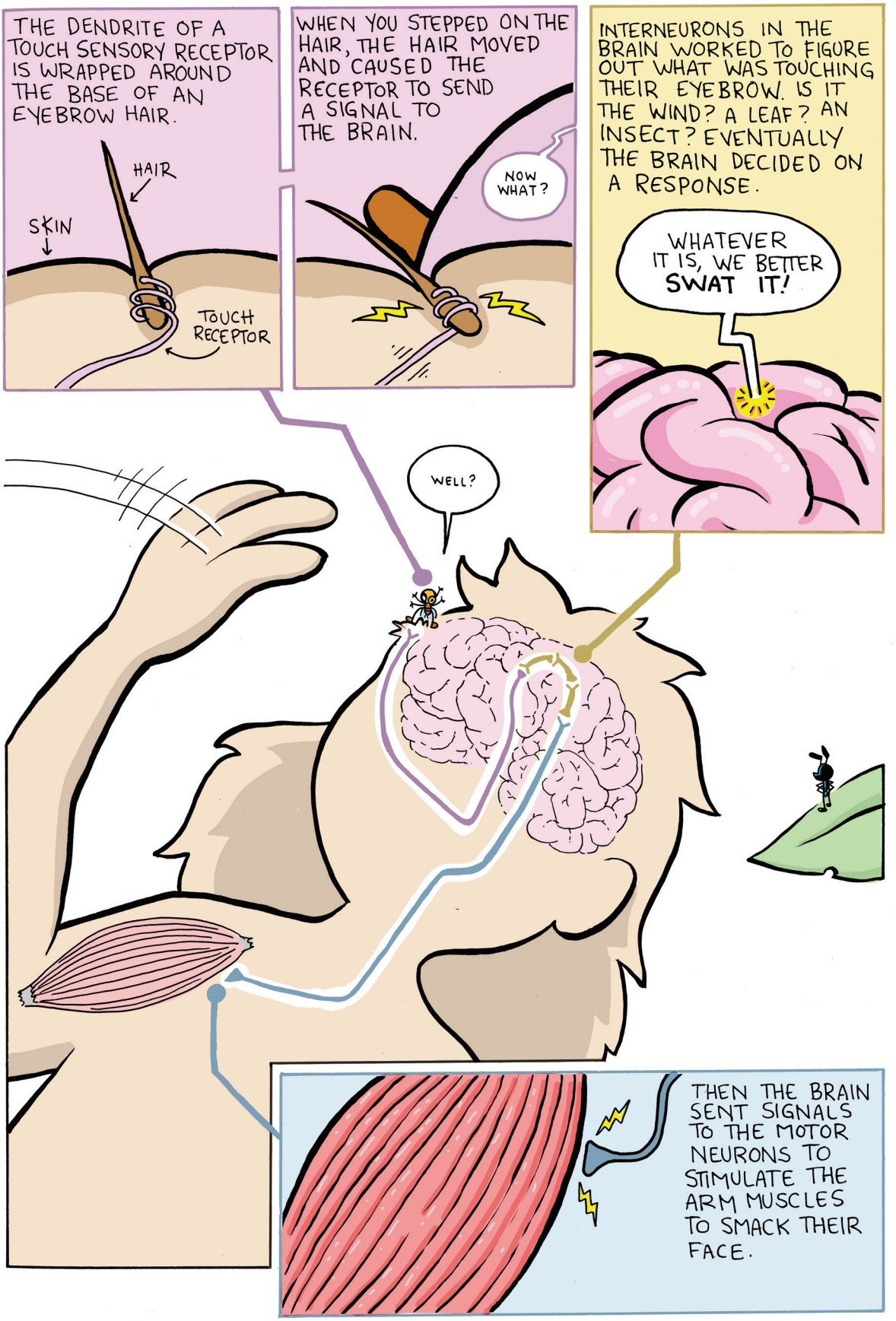

THERE ARE THREE TYPES OF NEURONS: SENSORY, INTERNEURONS, AND MOTOR.
SENSORY NEURONS RECEIVE STIMULI FROM THE ENVIRONMENT AT THEIR DENDRITES AND SEND ELECTRICAL SIGNALS DOWN THEIR AXONS.
WHEN THE ELECTRICAL SIGNALS REACH THE END OF THE AXON, THEY TRIGGER THE RELEASE OF CHEMICALS THAT DRIFT ACROSS THE SYNAPSE AND BIND TO RECEPTOR SITES ON AN INTERNEURON.
ELECTRICAL SIGNALS
IMAGINE YOU SEE A SPIDER'S WEB.
IT LOOKS LIKE A TRAMPOLINE.
THE SYNAPSE IS A GAP BETWEEN NEURONS.
INTERNEURONS TAKE INFORMATION FROM SENSORY CELLS AND FIGURE OUT WHAT IT MEANS AND HOW TO RESPOND TO IT.
MOST OF THE NERVOUS SYSTEM IS COMPOSED OF INTERNEURONS. OUR BRAINS ARE COMPLEX TANGLES OF INTERNEURONS.
ONCE INTERNEURONS DECIDE WHAT TO DO, THEY ACTIVATE MOTOR NEURONS.
MY INTERNEURONS ARE TELLING ME TO JUMP ON THE TRAMPOLINE
NO.
MOTOR NEURONS ACTIVATE THE MUSCLES REQUIRED TO PERFORM THE APPROPRIATE BEHAVIOR.
WHAT'S THE APPROPRIATE BEHAVIOR YOU SHOULD DO, WILBUR?
JUMP ON TRAMPOLINE?
FLY THE OTHER WAY!
AWW

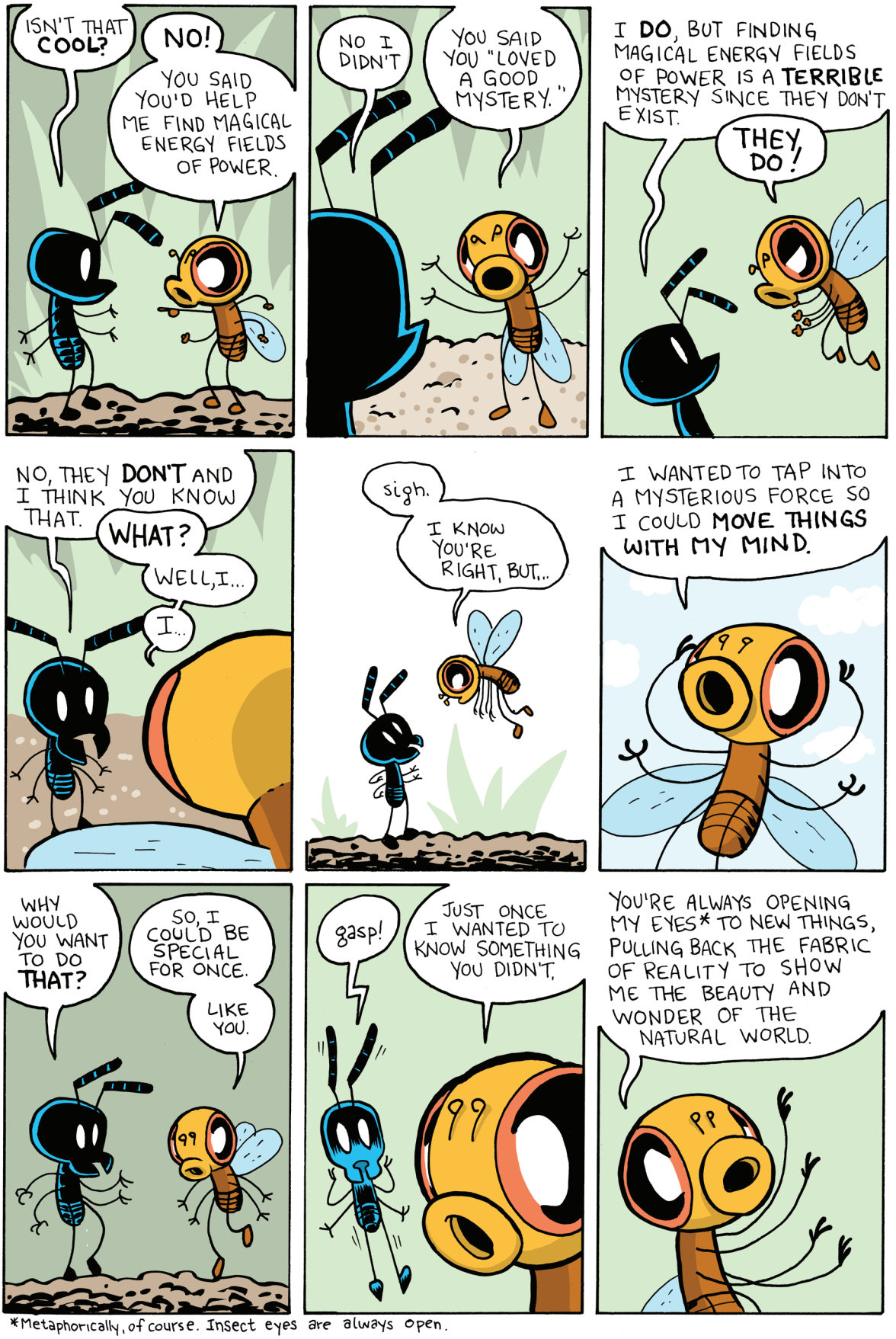

HMM. I'M NOT DOING A VERY GOOD JOB. YOU STILL DON'T SEEM TO UNDERSTAND HOW THIS WORKS.
WELL, TO BE FAIR, I'M NOT REALLY TRYING.
WE NEED AN EXAMPLE THAT WILL MAKE AN IMPACT.
LET'S GO FIND A HUMAN!
LATER
THERE'S ONE
Z
NOW LET'S CONSIDER HOW CAUSE & EFFECT WORK IN THE NERVOUS SYSTEM.


HUMANS HAVE PRETTY SENSITIVE TOUCH. THEY CAN SENSE A TINY INSECT CRAWLING AROUND ON THEIR SKIN AND HAIR.
PFFT. NOT ME. I'M SUPER LIGHT.
TRUST ME.
FLY OVER AND STEP ON ONE OF THEIR EYEBROW HAIRS.
WAITA MINUTE!
HOW IS ANY OF THIS GONNA HELP ME SENSE MAGICAL AURA FIELDS OF POWER?
I PROMISE THAT YOU ARE ABOUT TO SENSE SOMETHING PROFOUND.
IT'LL BE BIG?
OH, YES. QUITE STRIKING
OKAY.
Z

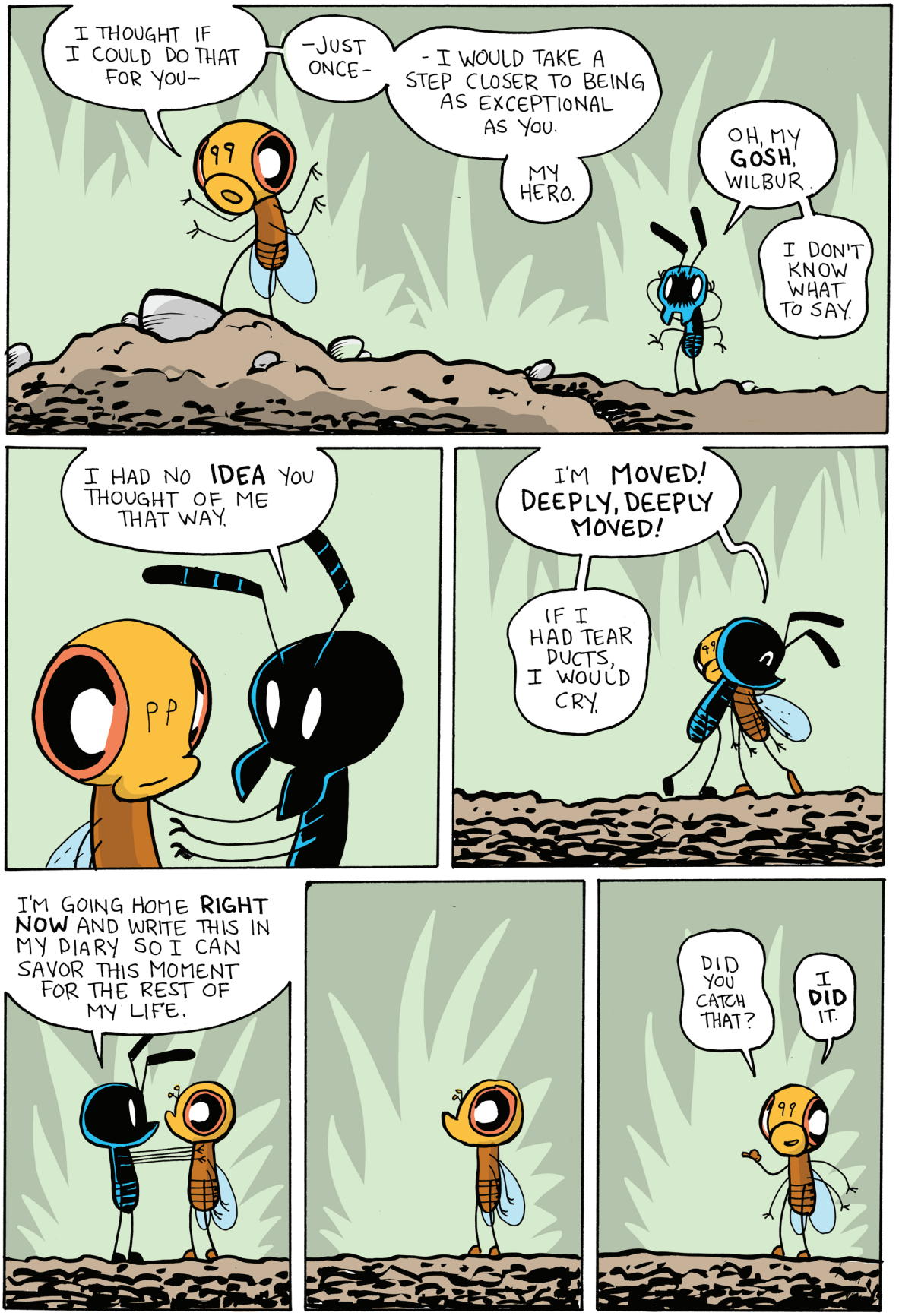

DINK
WELL?
NOW WHAT?
SMACK!

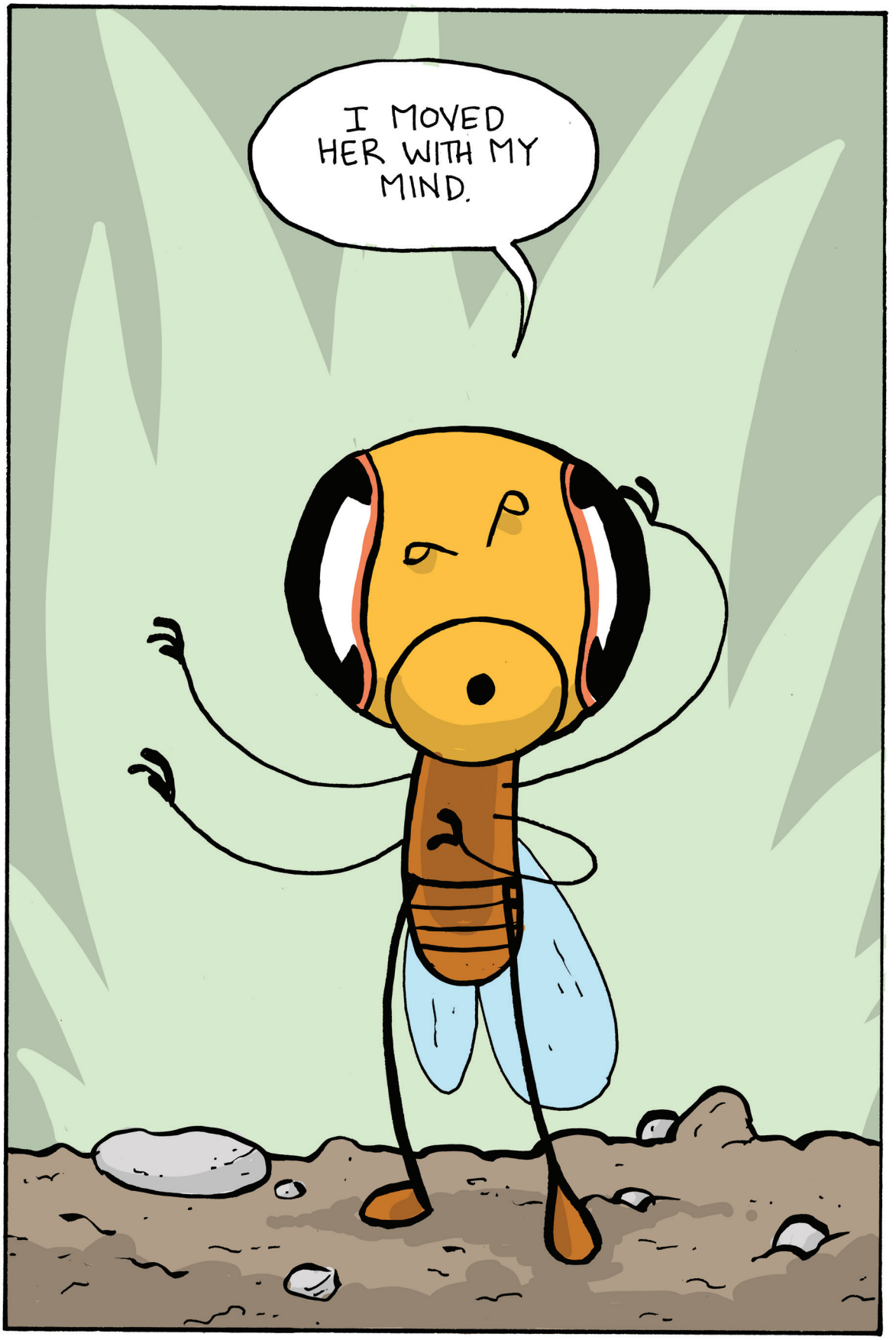

SO, DID YOU FEEL ANYTHING?
anger.
rage.
a white hot desire for vengence.
BUT NOTHING MAGICAL?
NO OUT OF BODY EXPERIENCE?
i wish i was out of my body right now.
what happened?
YOU JUST TRIGGERED A SENSORY NEURON AT THE BASE OF AN EYEBROW HAIR AND SET OFF A CHAIN REACTION OF CAUSE AND EFFECT THAT RESULTED IN A DEFENSIVE BEHAVIOR.
YOU JUST LIE THERE AND I'LL TELL YOU ALL ABOUT IT.
nuts. i was hoping to pass out before the explanation started.


THE DENDRITE OF A TOUCH SENSORY RECEPTOR IS WRAPPED AROUND THE BASE OF AN EYEBROW HAIR.
HAIR
SKIN
TOUCH RECEPTOR
WHEN YOU STEPPED ON THE HAIR, THE HAIR MOVED AND CAUSED THE RECEPTOR TO SEND A SIGNAL TO THE BRAIN.
NOW WHAT?
INTERNEURONS IN THE BRAIN WORKED TO FIGURE OUT WHAT WAS TOUCHING THEIR EYEBROW. IS IT THE WIND? A LEAF? AN INSECT? EVENTUALLY THE BRAIN DECIDED ON A RESPONSE.
WHATEVER IT IS, WE BETTER SWAT IT!
WELL?
THEN THE BRAIN SENT SIGNALS TO THE MOTOR NEURONS TO STIMULATE THE ARM MUSCLES TO SMACK THEIR FACE.



*Metaphorically, of course. Insect eyes are always open.


I THOUGHT IF I COULD DO THAT FOR YOU-
-JUST ONCE-
- I WOULD TAKE A STEP CLOSER TO BEING AS EXCEPTIONAL AS YOU.
MY HERO.
OH, MY GOSH, WILBUR.
I DON'T KNOW WHAT TO SAY.
I HAD NO IDEA YOU THOUGHT OF ME THAT WAY.
PP
I'M MOVED! DEEPLY, DEEPLY MOVED!
IF I HAD TEAR DUCTS, I WOULD CRY.
I'M GOING HOME RIGHT NOW AND WRITE THIS IN MY DIARY SO I CAN SAVOR THIS MOMENT FOR THE REST OF MY LIFE.
DID YOU CATCH THAT?
I DID IT.


I MOVED HER WITH MY MIND.