

Survival of the Sneakiest

by the [Understanding Evolution team](#)

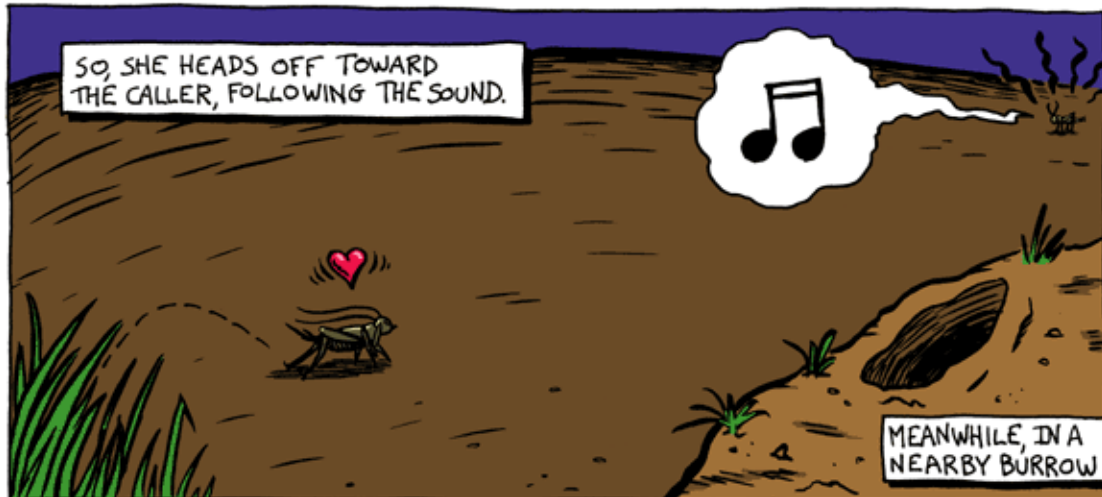
"Survival of the fittest" means that the strong succeed, and the weak fail, right? Well, often that's how it's portrayed, but the real story is a bit trickier. Let's take a closer look at what the crickets do...



NOT FAR AWAY, A FEMALE CRICKET LIKES WHAT SHE HEARS...



SO, SHE HEADS OFF TOWARD
THE CALLER, FOLLOWING THE SOUND.



OH GIRL, YOU MAKE MY
ANTENNAE TREMBLE!
TOGETHER WE CAN
MAKE EXTREMELY
FIT OFFSPRING!

WILL YA LISTEN TO
THIS BLOWHARD?



I MEAN, I WANNA MATE
AS MUCH AS THE NEXT
GUY CRICKET, BUT YOU DON'T
HEAR ME ANNOUNCING IT
TO THE WHOLE MEADOW.





AND OUR ORIGINAL, STRONG, LOUD, CALLING MALE IS OUT OF LUCK.



IN FACT, HIS SONG HAS ATTRACTED SOME UNWANTED ATTENTION.



SEE, "SURVIVAL OF THE FITTEST" ISN'T NECESSARILY ABOUT BEING THE TOUGHEST, FASTEST, OR MOST ATTRACTIVE. IT'S REALLY ABOUT SURVIVING TO PASS THE GENES THAT ENCODE TRAITS AND BEHAVIORS ON TO OFFSPRING



MAYBE OUR SNEAKER MALE'S KIDS WILL INHERIT THE "SNEAKY" GENES, AND IN TURN USE SNEAKY BEHAVIOR LIKE THEIR FATHER.



OF COURSE, TOUGHNESS **CAN** HELP TO INCREASE AN ORGANISM'S CHANCE OF LIVING LONG ENOUGH TO REPRODUCE...



...BUT REPRODUCTION AND THE PASSING ON OF GENES ARE MOST IMPORTANT IN TERMS OF EVOLUTION. AND THERE ARE MANY WAYS THAT AN INDIVIDUAL CAN GET THEIR GENES INTO THE NEXT GENERATION.

CALLING IS STILL A GOOD STRATEGY FOR MALE CRICKETS TO INCREASE THEIR CHANCE OF MATING. FEMALES ARE ATTRACTED TO CALLING MALES, AND THERE WON'T ALWAYS BE SNEAKERS OR PREDATORS AROUND TO DERAIL THE CALLERS.



AND IF THEY ALL USED THE SILENT, SNEAKER STRATEGY, THEN **NO** FEMALES WOULD BE ATTRACTED AT ALL, AND THE MALES WOULD HAVE SOME LONG, LONELY NIGHTS.

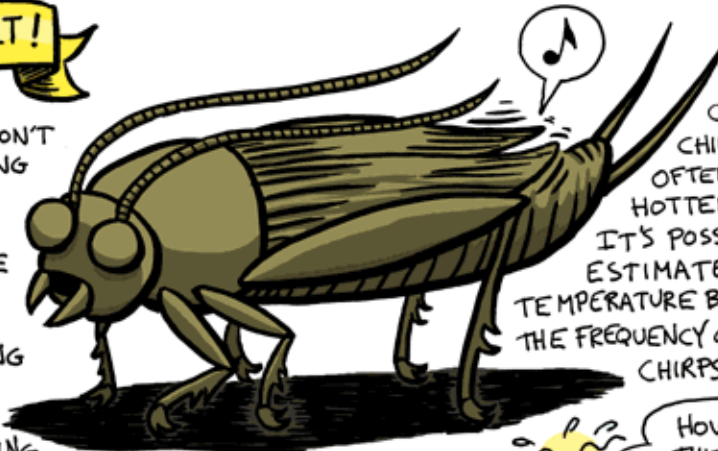


SO, WE END UP WITH A VARIETY OF SUCCESSFUL MATING STRATEGIES. THAT'S HOW NATURAL SELECTION WORKS. THERE IS NO ONE, TRUE, ULTIMATE SURVIVAL STRATEGY. A SUCCESSFUL STRATEGY IS WHATEVER GETS THE JOB DONE.



EXTRA CRICKET!

CRICKETS DON'T ACTUALLY SING WITH VOICES, LIKE BIRDS OR PEOPLE. THE MALE CRICKET'S SONG IS MADE BY SCRAPING ONE WING ACROSS ANOTHER, SORT OF LIKE A VIOLIN BOW SCRAPING ACROSS A STRING.



CRICKETS CHIRP MORE OFTEN IF IT'S HOTTER. IN FACT, IT'S POSSIBLE TO ESTIMATE THE TEMPERATURE BASED ON THE FREQUENCY OF CRICKET CHIRPS.



How 'Bout THIS HEAT?

Questions:

1. When it comes to crickets (or any organism, really), what does fitness mean?
2. Is calling good or bad for a cricket's fitness? Explain.
3. Give some examples of selection at work in this cricket story.
4. How does selection favor calling? How does selection favor not calling?
5. Using your understanding of Evolutionary Game Theory, explain how these two strategies (calling and sneaking) can coexist in this population of crickets?