

**LETTERS FROM GRANDPA**  
**#431**

Dearest grandchild,

Today's letter will be from an article on bats by James Johnson, J.D., Th.D (October 31, 2022) Dr. Johnson works with the Institute for Creation Research in Dallas, Texas. I share Dr. Johnson's thoughts because the remarkable way God guides bats, encourages me to believe he can also guide you and me. Job said: **“Ask the animals, and they will teach you, or the birds of the air, and they will tell you; or speak to the earth, and it will teach you, or let the fish of the sea inform you. Which of all these does not know that the hand of the Lord has done this? In his hand is the life of every creature and the breath of all mankind” (Job 12:7-10).** Surely we can learn something from the way God guides bats.

Dr. Johnson believes that the ability of the bat to hunt in the dark is a beautiful tribute to the genius of Jesus who created all things (Jn. 1:1-3). He observes:

- *Bats hunt at night using a range of specifically designed abilities.*
- *Their hunting success depends on accurately judging distance, proficient sound production and reception, precise physical speed, and on the fly mental processing.*
- *The bat must constantly and rapidly adjust its use of these abilities to hone in on its prey.*
- *Only the ingenious bioengineer Christ Jesus could create flying creatures like these.*

He continues: *Because bats are mostly nocturnal, only beginning their aerial hunting at sunset, their nighttime foraging habits often go unseen by human observers. Scientists can discern certain aspects of bats' gustatory preferences by their digestive byproducts. Let's look at seven critical factors and real-time challenges of a bat employing sound to locate and capture its food.*

*First, the bat must factor distance. A bat's call must be strong enough to make the outward journey to a target and the return journey back to its ears. But sounds quickly lose energy as they travel through air, especially when they're high in frequency, so echolocation only works over short ranges.*

*Second, ultrasound volume counts, too. Big brown bats emit sonar calls at 138 decibels, like ambulance sirens. Other bats shriek at 110 decibels, like chainsaws. Thankfully, these anatomy-enabled noises are pitched beyond human hearing.*

*Third, speed matters. Each sonar call/echo pair is the sound equivalent of a snapshot. These serial snapshots must be updated (and interpreted) quickly enough to resemble watching a movie. Otherwise, evasive prey—like flies, mosquitoes, wasps, caddisflies, moths, crickets, frogs, small birds, or near-surface fish—can flee and escape.*

*Fourth, emitted calls cover a band of sound-wave frequencies at one or two octaves, bouncing sound waves off specific body parts of targeted prey. The bat's sonar data-analysis software/hardware systems interpret this real-time data to produce detailed images of the target's physical shape and changing locations.*

*Fifth, as the bat flies—one active example of complicated motion—the repeated sonar emissions must unerringly track the targeted-yet-dodging prey, which is another active example of complicated motion. As the capture distance shortens, the prey's ever-changing location must be precisely adjusted for, with brief-yet-close-together pulses of sound that are separated enough to avoid garbled “blurring” of overlapping calls and echoes. The bat must compute space from the timing of its echoes, and since echoes returning from the two equidistant [objects] would arrive after the same delay, they might sound like the same object.*

*Sixth, there's a sonar version of camouflage. Tiny prey, like mosquitoes or flies, can get "lost" against a larger background (like radar chaff) such as leaves or tree bark.*

*Seventh, bats live in colonies; they often hunt in packs. Thus, bats must informationally distinguish their own call-echo sound data from that of other bats in order to focus on their own prey pursuits. Yet, sonar data from other bats can't be ignored. Otherwise, bats would collide into each other as they hunt.*

*There's more, of course, but this sufficiently shows how the supposedly "simple" habit of bats going out to eat—while actively acquiring external information (continuous environmental tracking)—demands that bats be bioengineered by someone who is a whole lot smarter than the smartest of humans.*

*That super-ingenious someone is the Lord Jesus Christ (John 1:1-3).*

Just as humans are unaware of the sonar signals guiding bats, the unconverted person is unaware of the spiritual impulses that guide the child of God. **"The man without the Spirit does not accept the things that come from the Spirit of God for they are foolishness to him, and he cannot understand them, because they are spiritually discerned" (1 Cor. 2:14).** One obvious way to illustrate this is by comparing a caterpillar with a butterfly. The caterpillar does not need guidance for in its short life span it only travels a short distance. When the caterpillar is transformed into a Monarch butterfly, however, it can travel thousands of miles and is guided each year to use the same route that it's ancestors have used for centuries. The "transformation" of a caterpillar into a butterfly is precisely the terminology used to describe our conversion to Christ (Rom. 12:1-2). Truly, if anyone is in Christ, he is a new creation (2 Cor. 5:17). Yes! **"Those led by the Spirit of God are sons of God" (Rom. 8:14).**

Your i-phone can guide you to the house of a friend, but it cannot tell you whom you should marry or where to apply for a job. It cannot tell you why you were born, or what is your reason is for living, or how to get to heaven! Jesus, however, can guide you in ways too wonderful for words. Please: **"Trust in the Lord with all your heart and lean not on your own understanding; in all your ways acknowledge him, and he will direct your paths" (Prov. 3:5-6).**

I love you,

Grandpa Boyce