

**FEATURE: Why Doesn't Your Remote Control Unlock My Car?**

- VOICE: So many things have remote controls. Thousands of signals are in the air all the time.
- PROF.: There are remote locks on cars, garage door openers, TV remote controls, wireless internet connections – plus signals from cell phones and radio and TV broadcasts.
- VOICE: How do they avoid getting mixed up? How can I be sure my neighbor's cell phone won't unlock my car?
- FORMAT: THEME AND ANNOUNCEMENT
- VOICE: My car was in a parking lot with hundreds of others. When I was ready to go home, I pushed a remote-control button. The car doors unlocked and the lights went on.
- PROF.: Millions of drivers around the world do that every day. Does that worry you?
- VOICE: No, but I want to be cautious. Is there a risk that someone else's remote control or smart phone might unlock my car?
- PROF.: If you have a very old system, you may have a problem. But if it's reasonably new, you can sleep peacefully. Engineers have made major improvements in all kinds of wireless technology.
- VOICE: My grandfather remembers his first garage door opener. When he pushed one button, *several* garage doors in the neighborhood opened. And my grandfather's door opened when a neighbor activated an opener.
- PROF.: That was a problem several decades ago. But it would be extremely rare with today's technology.
- VOICE: Why? What refinements do modern openers have?
- PROF.: The website “How Stuff Works” answers that the 1950 models all used one frequency, and they did not include computer codes. So whenever *any* remote control transmitted, *all* garage door openers within range opened or closed.
- By the 1970s, most openers were using computer codes. So multiple remote controls could use the same frequency, and select which devices they were activating.

A device called an “encoder/decoder” enabled them to send information that is encoded for only one receiver.

VOICE: How many codes were there at that time?

PROF.: In the 1970s, they were using what computer programmers call an “8-bit code.” It provided 256 possible combinations. That was a major step forward, but definitely not complete security.

VOICE: How many combinations does *today's* technology provide?

PROF.: Texas Instruments makes an encoder/decoder with a 40-bit code. The manufacturer says it provides *more than a trillion*<sup>1</sup> combinations!

VOICE: More than a trillion combinations? That would enable *every person on Earth* to have *100 unique combinations* without duplicating anyone else's code!

PROF.: Right. That should make you safe from someone else duplicating your code.

VOICE: What about my cell phone? How likely is someone to overhear what I'm saying?

PROF.: Again, that depends on the age of the phone. It also varies from one manufacturer to another, and on which company provides the phone service.

VOICE: Another thing that bothers me is that my cell phone reveals where I am.

PROF.: That's true whenever the phone is turned on. It needs to be ready to receive any incoming call and connect it to you. To do that, your phone informs the nearest relay tower that you are within its range.

VOICE: That could be a radius of several kilometers. It wouldn't give my precise location.

PROF.: If the cell phone is within range of *two or three* towers, the system knows the phone is in a place where the signals of those towers overlap. Each tower knows what fraction of a second your phone takes to reach it. So the system can pinpoint very precisely where you are.

And some phones use GPS<sup>2</sup> to indicate where they are located. If you're injured and need emergency help, that kind of precise location information may save your life.

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1 1,000,000,000,000.

2 Global Positioning Satellite.

FORMAT: MUSIC AND MID-PROGRAM ANNOUNCEMENT

VOICE: Today's discussion reminds me of a conversation a friend and I had in a restaurant yesterday. A man at the next table stopped to thank God for the meal before eating, and my friend thought that was silly and childish. She reasoned that there are probably millions of people praying to God at any one time. So how could God hear all of them and avoid being confused about who was saying what?

PROF.: Let's think about that for a minute. How many cell phone conversations are going on at this very moment?

VOICE: I see what you're implying. But is that really a parallel situation?  
Most phone calls have one person on each end of the conversation. But prayer has *millions of people* around the world talking to *only one God*.

PROF.: If man-made technology can generate signals containing a trillion different codes and keep from confusing them, wouldn't a God with infinite intelligence be able to understand and respond to an infinite number of things at the same time?

VOICE: In other words, if there is a being that the atheist Richard Dawkins mockingly calls a "mega-God," wouldn't he know who was talking to him about what?

PROF.: I would say the answer is yes.

VOICE: Does God use encoders and decoders?

PROF.: He could if he wanted to. But I think it's more likely that his hyper-intelligent mind can keep track of everything without electronic "crutches."

God inspired the Bible to be written before humans invented electronic communication or satellite surveillance. To be understandable to people who lived in a less technological era, the Bible refers to God having his "*ear* attentive to our prayer." And it says the "*eyes* of the Lord" focus on us individually...

VOICE: ...God seeing people and hearing them pray.

PROF.: Exactly!

VOICE: But God doesn't have a body.

PROF.: That's right. I think the reason is that a physical body would confine him to one place. He chooses to have the capability of being everywhere at the same time.

VOICE: So when the Bible mentions God's eyes and ears, it must be speaking figuratively. It seems to mean he has knowledge of what we are doing and saying.

PROF.: God considers that fact so important, that he repeats it from several angles. Both the book of Psalms and the book of I Peter say, "The eyes of the Lord are on the righteous, and his ears are attentive to their prayer."<sup>3</sup>

In fact, the Bible says in another place that God knows "the thoughts and intents of our hearts..."<sup>4</sup>

VOICE: ...Reading our minds.

That would require very sensitive listening. Brain waves are less than a volt. In fact, most synapses fire at approximately 70 millivolts.

PROF.: But the God who made the brain, certainly has the ability to read the signals he equipped it to transmit.

VOICE: So even in situations where we can't pray out loud, God can still hear and answer.

PROF.: Yes. Someone sent me a humorous item that points out the way God *does not* deal with our prayers. It's called, "If God Had Voicemail":  
"The phone rings and a recorded voice answers..."

VOICE #2: "Thank you for calling heaven."

PROF.: The recording continues...

VOICE #2: "I'm sorry, all of our angels and saints are busy helping other sinners right now. However, your prayer is important to us and we will answer it in the order it was received. Please stay on the line."

VOICE: (LAUGHS) Many voicemail systems ask callers to press numbers to select what they're calling about or whom they want to speak with.

PROF.: "If God Had Voicemail" includes these choices...

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3 Psalm 24:15 and I Peter 3:12.

4 Hebrews 4:12.

VOICE #2: “If you would like to speak with God the Father, press 1.  
To speak with Jesus, press 2.  
To speak with the Holy Spirit, press 3.

“If you would like to hear King David sing a Psalm while you are holding, press 4. To find a loved one who has been assigned to Heaven, press 5, then enter his or her social security number followed by the pound sign. For reservations in heaven, please enter J-O-H-N 3:16.

“For answers to nagging questions about dinosaurs, the age of the earth, life on other planets, and where Noah's Ark is, please wait until you arrive here.”

VOICE: I think I get the idea. When we pray, God does not switch us into voicemail. He doesn't need an encoder/decoder to keep track of who is calling him about what subject.

PROF.: God tells us in another part of the Bible that he is so interested in each of us as individuals, that he even counts the hairs of our heads.

VOICE: That means he knows more about me, than I know about myself!

PROF.: Yes. That's the level of love he has for each one of us, the humans he has created.

VOICE: If God loves us that intensely, we can be sure he listens very carefully to every prayer we pray to him.

FORMAT: THEME AND ANNOUNCEMENT

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Links to sources:

How Remote Entry Works

<http://auto.howstuffworks.com/remote-entry.htm>

Details of a 40-bit remote control encoder/decoder

<http://www.ti.com/lit/ds/slws011d/slws011d.pdf>