# The Ethnic Theory Of Plane Crashes

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I've heard, that most airplane accidents take place during takeoff and landing. I've also heard that accidents occur more often because of pilot errors and less so because of mechanical problems.

But why? Why do pilots make errors?

What kind of errors do they make?

According to Malcolm Gladwell's book, The Outliers, a large number of plane crashes happen because of miscommunication and language issues.

There are two <u>places</u> where miscommunication occurs

1. Among pilots in the cockpit
2. Between air traffic controllers and pilots

There are two major <u>reasons</u> for miscommunication:

1. The first one is cultural and is measured by a power distance index, driven by
   a. respect to authority and
   b. attitude toward hierarchy
2. The second one is driven by ranking and subordination on the job. It causes co-pilots to use highly mitigated speech and to avoid confronting the main pilot when necessary.

Here are 3 examples:

⇨ Example #1 during landing:

A Korean Air plane flying from Korea to Guam was going through bad weather and stormy clouds. The captain had committed the plane to visual landing, which meant that he had to be able to see the airport runway. Here is some of the conversation among the pilots. Pay close attention to a couple of comments from the supporting crew to the captain and to how the captain responds to them, or doesn't:

- <u>First officer: Do you think it rains more in this area?</u>

- Captain: (silence)

- <u>Flight engineer: Captain, the weather radar has helped us a lot.</u>

- Captain: Yes. They are very useful.

What the first officer is trying to do is <u>warn</u> the pilot that it may not be safe to do a visual approach without a backup plan for landing, in case the runway is not visible. Such communication of <u>hinting</u> from first officer to pilot is not uncommon in Korean culture.

However, driven by respect to authority and fear of upsetting their superior, the co-pilots ultimately contributed to the plane crash as they allowed the pilot to start a visual landing without an alternative.

⇨ The 2nd example of inadequate communication between the first officer and the pilot is illustrated by the two pilots of an Air Florida plane in 1982. Here is some of the chat in the cockpit prior to takeoff:

- First officer: See all those icicles on the back there and everything?

- First officer: Boy, this is a losing battle here on trying to de-ice those things, it gives you a false feeling of security, that's all it does

- First officer: Let's check those wing tops again, since we've been sitting here a while?

- Captain: I think we get to go here in a minute.

Later that plane crashed because of problems caused by ice on the wings. If the co-pilot had more strongly advocated his opinion and forced the pilot to de-ice the wings before takeoff, that incident would have been avoided. Although the co-pilot had hinted 3 times at the possible dangers of not de-icing the wings, the pilot ignored his comments as trivial and unimportant.

⇨ The 3rd story is from a crash of an Avianca flight coming from Columbia to JFK. A backed up airport and miscommunication between the co-pilot and Air Traffic controllers caused the plane to run out of fuel while circling over New York waiting for landing clearance.

Here is some of the exchange that took place between the pilots and the ATC:

- Captain: Advise ATC we don't have fuel.

- First officer: Climb and maintain 3 thousand and, ah, we're running out of fuel sir.

- Air Traffic Control: I'm gonna bring you about fifteen miles northeast and then turn you back onto the approach. Is that OK with you and your fuel?

- First officer: I guess so. Thank you very much.

Five minutes later the plane crashed because of fuel exhaustion. Later, the JFK air traffic controller testified that he took the co-pilot's words about "running out of fuel" as a passing comment, instead of emergency signal. Controllers hear such "running out of fuel" remarks all the time. In fact, it is absolutely normal for planes to be running low on fuel prior to landing. They are supposed to be lighter and not carry much fuel when they land.

The co-pilot had mentioned they were running out of fuel towards the end of the sentence, without saying the magic word "emergency". The investigation concluded that the co-pilot's cultural heritage of Columbia, which is a high power distance culture, was the main reason to feel intimidated by the dominant and snappy attitude of the JFK controller, and not communicate clearly the urgency of that alarming situation.

So what can they do? How can pilots improve communication and eliminate language problems causing fatal plane crashes? Airlines have started to combat mitigated speech. They make co-pilots address superiors by <u>first</u> name, teach them to be more assertive and get more comfortable with pushing back. In turn, main pilots try to be less dominant and operate as organizers, negotiators and facilitators, rather than as commanders, thus making it easier for first officers to speak up in order to correct any mistakes caused by the main pilot.