

Inquiry into Expertise

From among your classmates, who can:

- help you with your science homework?
- find a good party this weekend?
- help you negotiate the latest new app on your phone?
- help in an emotional crisis?

Beyond your friends, who might:

- reliably repair your cell phone?
- help diagnose a possible pregnancy or sexually-transmitted disease?
- help someone with suicidal thoughts or anxieties about gun violence?
- fix your wifi network or internet connection?

List some other experts in our culture?

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List some other experts in our culture?

- doctors, dentist
- lawyers
- accountants
- airplane pilots
- military intel
- car/truck mechanics
- plumbers, electricians, carpenters
- appliance repairers
- farmers
- bridge welders

...and scientists as experts?

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- meteorologists
- immunologists
- chemists
- astronomers
- oceanographers
- virologists
- paleoclimatologists
- biotech engineers
- nuclear physicists
- epidemiologists

When do these experts provide us with knowledge that is better and more reliable than everyday assumptions or other forms of expertise?

What makes an expert, an expert?



(What differentiates someone with true expert knowledge from some self-professed, would-be know-it-all on YouTube?)

What makes an expert, an expert?

- specialized knowledge or skills
- professional training
- extensive relevant experience
- good memory (for their topic)
- able to detect possible errors
- keen perception (able to discern fine differences)
- recognizes patterns in apparent chaos
- efficient reasoning & judgment
- avoids big mistakes

***What makes a scientific expert,
a scientific expert?***

What makes a scientific expert, a scientific expert?

- research experience
- knowledge of investigative methods & statistics
- knowledge of possible sources of investigative error
- creative experimental design
- extensive knowledge of previous research in their field
- familiarity with current ideas and alternative theories

Well...

If we know what constitutes expertise, can't we all be experts? Can't we all become airplane pilots, chess masters, doctors, lawyers and pandemic experts, all at once?

Why or why not?



These smug pilots have lost touch with regular passengers like us. Who thinks I should fly the plane?

What types of expertise do you offer to others?

second or third language? some sport, musical instrument, or art? some school subject? human relations? what instruments or tools you have mastered?

What expertise do you hope to develop in the future?

... Where does science fit?

When do others know more than you do?

When is it appropriate to make decisions based on your own knowledge and intuitions? When might it be more reasonable to trust someone else's judgment instead of (or even against) your own "instincts"?



epistemic trust
in a social network



How do you know who is an expert?

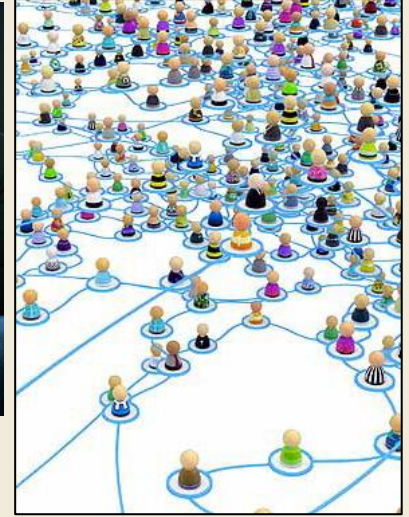


How do you know who is an expert?

- a documented track record, or portfolio
- advanced degree/training
- certification (testing)
- licensing (accountability)
- peer recommendations
- professional awards or prizes
- positions of leadership
- (valid) user reviews

Which criteria are most important?

Which can be “gamed” or easily faked?



Summarize what you have learned about expertise, scientific expertise, epistemic trust and credentials.