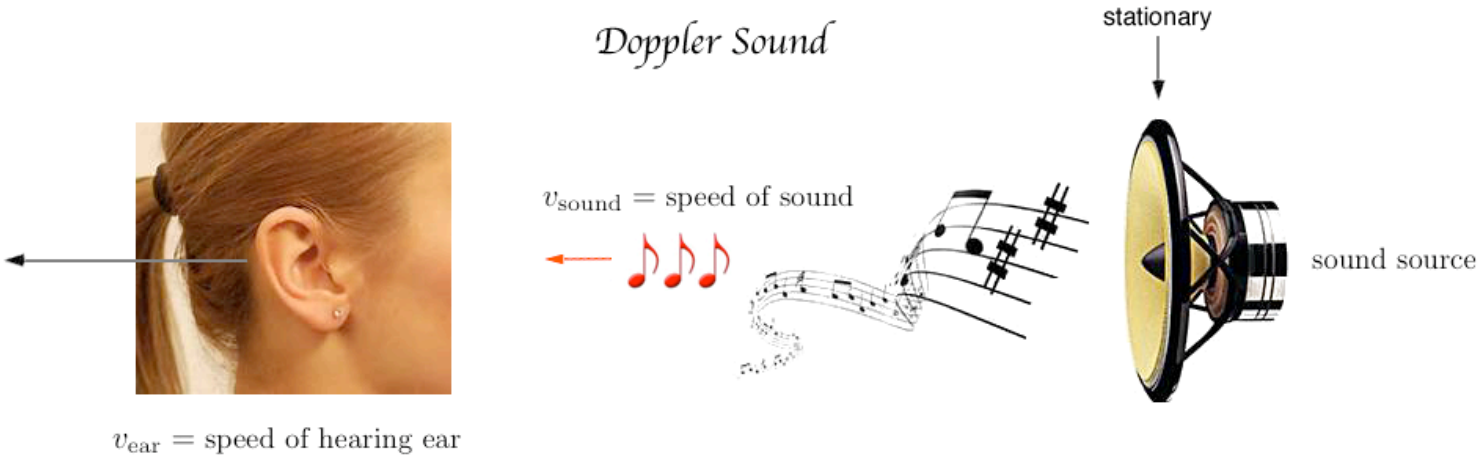
Doppler: Sound and Time Dilation

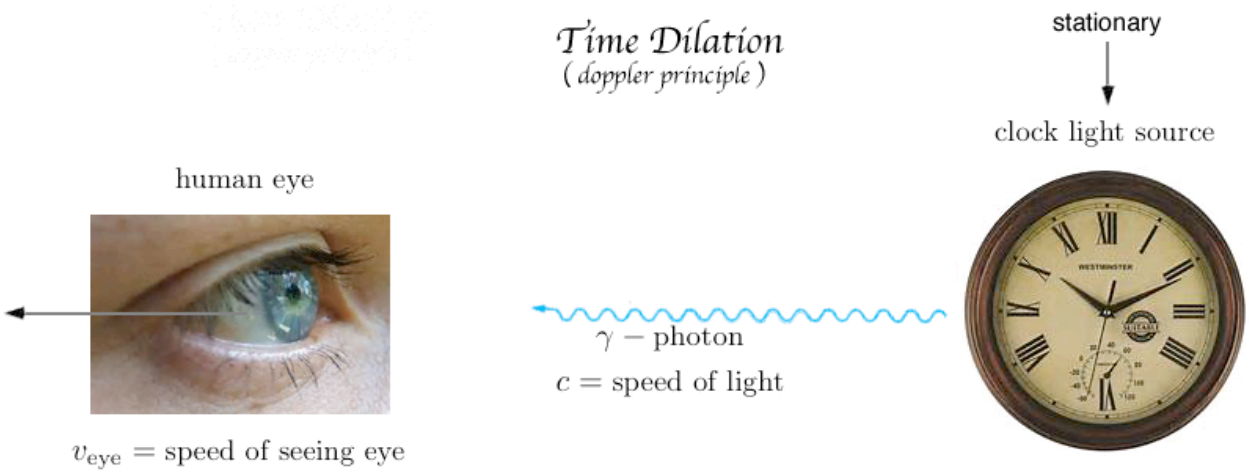
"The real question of government versus private enterprise is argued on too philosophical and abstract a basis. Theoretically, planning may be good. But nobody has ever figured out the cause of government stupidity and until they do (and find the cure) all ideal plans will fall into quicksand." - Richard Feynman (1918 - 1988)

Doppler Sound



- Case 1: The ear is speeding away from the sound source *faster* than the speed of sound.
  Result: the ear will never hear any sound since no vibration of sound will reach into the ear.
- Case 2: The ear is speeding away from the sound source *exactly at* the speed of sound.
  Result: the ear will hear the last note of the last tone emanating from the sound source, but nothing more.
- Case 3: The ear is speeding away from the sound source *at slightly less* than the speed of sound.
  Result: the ear will hear a series of notes but these will be entering into the ear at a *slow rate*.
- Case 4: The ear is not speeding away from the sound source.
  Result: the ear will hear *all sound* notes emanating from the sound source depending also upon any sound energy dissipation owing to distance separation.

Time Dilation
(doppler principle)



- Case 1: The human eye is speeding away from the face of the clock *faster* than the speed of light coming off the clock.
  Result: the human eye will never see the face of the clock or its hand movements.
- Case 2: The human eye is speeding away from the face of the clock *exactly at* the speed of light.
  Result: the human eye will see the last photon of light coming off the face of the clock, but nothing more with the result that *clock - time stops*!!
- Case 3: The human eye is speeding away from the face of the clock *at slightly less* than the speed of light.
  Result: the human eye will see a series of light photons coming off the face of the clock but these

will be entering into the human eye at a *slow rate*. Hence, clock - time (and its hand movements!) move *relatively* slowly. Furthermore, with different observers of photon light flying off from the face of the clock, each of these will observe different clock - times!

- Case 4: The human eye is stationary relative to the face of the clock and the movements of its hands.
  Result: the human eye will see *all photons of light* coming off the face of the clock depending, of course, upon any entropic light - energy dissipation owing to great distance separation. Clock - time and its hand movements are now proceeding at the *maximum possible rate*!!

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