Review of Literature

This science project is about “the mosquito ringtone which is a high frequency sound and it is usually only heard by young people under twenty-five. The ringtone is very annoying and it is often used to ward off younger people while it is undetectable by older people. Higher-pitched sounds, like whistles, have a higher frequency and vibrate faster and Lower-pitched sounds, like the rumbling of an engine, have a lower frequency and vibrates slower. The reason that older people can’t hear it, is because the older we are, the less high-pitched frequencies we can hear. It is hard for old people to hear the mosquito ringtone because “the ringtone has a frequency about 17.4 kilohertz while the average adult can only hear about .02 to 16 kilohertz sounds” (High Frequency Hearing Test).

The mosquito ringtone was created in “2005 by Howard Stapleton His first experiment of the sound started in Barry, South Wales in which it repelled teens from a grocery store. Stapleton got the idea after he was irritated by a factory noise. After that he created a company called Compound Security Solutions which sold two versions of speakers, one which only younger people can hear and one everyone could hear. The speakers had a range of two hundred feet. In 2006 the sound won the Ig noble prize. The Ig Nobel Prize is awarded to ten unique achievements every year.” (https://en.m.wikipedia.org/).

“In 1968 the Acton Institute experimented with the possibility of hearing with ultrasonic machinery. The Acton Institute experimented by using young, normal-hearing people and exposing them to different types of frequencies and different types of decibels. Decibels is how loud a sound is while frequency is the pitch of a sound. The institute made the sound by tunable

whistle. The institute wanted to avoid sounds that cause any nausea, fullness to the ear, and persistent headaches. Kilohertz is a measure of pitch of a sound. The institute concluded that 75 decibels was safe in 8-16 kilohertz sounds and for 110 decibels was safe for 20-31.5 kilohertz
for up to eight hours. Since most adults can’t hear up to 20 kilohertz, the sound can be louder without being
dangerous”(http://www.hse.gov.uk/research/crr_pdf/2001/crr01343.pdf).

“In the Uk the Department of Psychology and Human Development and the Institute of Education tested thirty-nine children with autism and thirty-three children with autistic spectrum disorder or ASD if they can hear sounds that normal humans can’t hear. The department experimented by using different frequencies and intensities. The department concluded that all thirty-nine children with autism did not have abnormal hearing while only twenty percent of the thirty-three children who have ASD have abnormal hearing. The children who have the abnormal hearing can irritated by some

sounds including the mosquito

sound.”(https://www.ncbi.nlm.nih.gov/pubmed/?term=19545576).

The department of neuroscience wanted to know if Presbycusis happened to Barn Owls. “Presbycusis can happen some humans and some animals and it affects the ability to hear higher pitched sounds in older people”(https://hearnet.org.au/hearing-problems/presbycusis). “The department tested on two age groups, one younger than two years and another with older than

years. The department tested the owls between .5 and 12 kilohertz sounds. The results were only a subtle hearing difference between the younger than two years and the older than thirteen years owls. In conclusion the barn owls have ageless

hears”(https://royalsocietypublishing.org/doi/pdf/10.1098/rspb.2017.1584).

The science project is going is testing if people can hear the mosquito sound. The project will be testing five people under thirty years and another five people over thirty years. This project is important because aging people are loosing their hearing and the Mosquito ringtone can help people to determine if they have bad hearing or good hearing. They can also test if they need hearing aids or not. “Honor your father and your mother, so that you may live long in the land the Lord your God is giving you.”(Exodus 20:12).