

Re: Let's build a speakwrite!

Source: <http://sci.tech-archive.net/Archive/sci.electronics.design/2005-02/5873.html>

From: John Woodgate (jmw_at_jmwa.demon.contrasпам.yuk)

Date: 02/26/05

Date: Sat, 26 Feb 2005 08:49:26 +0000

I read in sci.electronics.design that Rich Grise <richgrise@example.net> wrote (in <pan.2005.02.26.04.59.18.45961@example.net>) about 'Let's build a speakwrite!', on Sat, 26 Feb 2005:

>*The attention-getter for me was that for a particular phoneme, it made
>absolutely no difference which volunteer spoke the phoneme, the baby was
>responding to the phoneme. The pitch and timbre of the voice didn't make
>any difference – it was the relationship between the formant
>frequencies. Maybe "formant frequencies" is a misnomer*

I don't think it is. Look at spectrograms of different vowel sounds.

>*– it's more like
>which harmonics are there –*

They give timbre.

>*but the point is, the spectrum should have
>the same _shape_ for a given phoneme, when you bandpass filter it to,
>say, 300 Hz – 3 KHz, which, according to the 1963 Radio Amateur's
>Handbook, is where all of the information in voice is anyway.*

It isn't. 300Hz is perhaps OK, although some male formats go down much lower; the ear/brain regenerates the fundamental pitch from the harmonics. But 3 kHz is only OK for vowels. You can't distinguish 'f' from 'th' with only 3 kHz upper band limit. Consonants are most important for intelligibility, and their spectra go up to 8 kHz at least, although you can usually get by with a 6.3 kHz upper band limit.

--

Regards, John Woodgate, OOO – Own Opinions Only.

The good news is that nothing is compulsory.

The bad news is that everything is prohibited.

<http://www.jmwa.demon.co.uk> Also see <http://www.isce.org.uk>