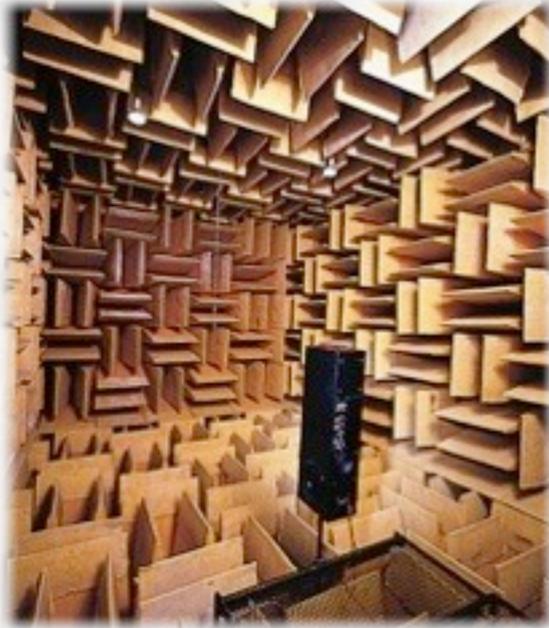


HARMAN



High School Students Prefer The Sound Quality of Accurate Loudspeakers and CD Over MP3

by
Dr. Sean E. Olive
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AKG
by HARMAN

harman/kardon
by HARMAN

Infinity
by HARMAN

JBL
by HARMAN

lexicon
by HARMAN

mark Levinson
by HARMAN

The New York Times

“..In mobile age sound quality steps backwards..”

WIRED

..the good enough revolution:When Cheap and Simple Is Just Fine



Lily Allen

The Music Industry Loudness Wars

- ✗ Bad for music
- ✗ Bad for the audio industry and sound quality
- ✓ Good for Pain Relief Sales



A central piece of “evidence” used to support the acceptance and decline of sound quality is the “MP3 effect” observed in an informal study conducted by Jonathan Berger at Stanford University on music students

This informal study has never been published so details about its methodology and results are not well known

The New York Times

..In fact, among younger listeners, the lower-quality sound might actually be preferred. Jonathan Berger, a professor of music at Stanford, said he had conducted an informal study among his students and found that, over the roughly seven years of the study, an increasing number of them preferred the sound of files with less data over the high-fidelity recordings

“I think our human ears are fickle. What’s considered good or bad sound changes over time,” Mr. Berger said. “Abnormality can become a feature”

.. is this really true?..

or

has the death of
sound quality been greatly
exaggerated ?

Has the Media Created A Self-Fulfilling Prophecy?

- ▶ Much of the audio industry seems to accept that Generation Y is apathetic towards sound quality - despite the weak scientific evidence
- ▶ Automotive companies are now arguing for less audio content, cheaper and lower sound quality on the basis that a) it's unnecessary for reproduction of MP3, and b) Generation Y doesn't appreciate or care about sound quality
- ▶ Audio marketing point to the "MP3 Effect" as justification to make audio products cheaper and lower sound quality that is "good enough"

Now versus Then

The quality of MP3 encoders has vastly improved since Berger began his Stanford MP3 studies 7-9 years ago; his findings may no longer be relevant

More consumers are using better quality lossy encoders (e.g. iTunes which accounts for 70% of all digital downloads purchased uses 256 kbps AAC, which is transparent for most people; same encoder is default option in iTunes)

Lossless formats (e.g. Flac/AAC, wav/aiff) are becoming more popular as the cost of bandwidth and storage drops

Is the MP3 Effect Real?

Does Generation Y prefer lossy MP3 over the higher quality CD music format?

Does this also apply to their sound quality tastes in loudspeakers?



Listeners

- ▶ 18 Los Angeles high school students
- ▶ Ages 15 to 18
- ▶ Females (5) Males (13)
- ▶ All completed a pre-survey to assess their listening habits, playback system, knowledge of music encoding formats, future audio purchases



Preference Choice for
Lossy MP3
Versus
Lossless CD format