

Re: podcasts?

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  - *Date:* Tue, 12 Jul 2005 21:43:53 +0200
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Sean wrote:

On 7/12/05 4:15 AM, "Curt Fischer" typed:

someone wrote:

That is correct too, but can you show me the difference between a 196 kbps MP3 and the original ? Because frankly I don't hear it, so I don't care at all.

I'm not sure what sampling rate the usual mp3 is at, but in a side-by-side comparison IME it is easy to tell the mp3 from the uncompressed source by listening to high end sounds like e.g. the cymbals or snare. I can't say that I get hung up on this issue or even notice it outside the context of a side-by-side comparison though.

For language learning its probably not that important, at least for Japanese.

The usual MP3 has a sample rate of 44.1 khz. This is exactly the same as red book standard CD audio. Audio sampled at 44.1 khz reproduces frequencies up to 22.05 khz (that's half of the sample rate, in case you didn't notice). Human beings generally can't hear frequencies above that, although some folks say even the unheard higher frequencies have some effect on the quality (tone, colour) of the sound. MP3 compression involves a much more complicated process than simple hacking away at the waveform. When you say you can perceive the difference between CD audio and MP3 by some difference in the high-end, I'd say you might be misinterpreting the difference you hear.

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It's not always easy to tell the "sampling rate" and the "bitrate" apart. I'm rather sure Curt was referring to the later, not the former.

Yes, MP3 encoding is a complex process, but its first stage invariably includes the low-pass filtering of the music piece. Depending on the bitrate this filtering can be rather drastic. For example, here are the default values of the LAME encoder:

```
bitrate: 64kbps -> cutoff freq.: 10,1kHz
bitrate: 112kbps -> cutoff freq.: 15,8kHz
bitrate: 128kbps -> cutoff freq.: 17,2kHz
bitrate: 160kbps -> cutoff freq.: 17,9kHz
bitrate: 192kbps -> cutoff freq.: 19,3kHz
bitrate: 320kbps -> cutoff freq.: 20,1kHz
```

There are also other nasties (such as aliasing), which could also distort an mp3-encoded piece, but all in all, I'd say Curt is right -- the high-end content is usually the telltale.

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