Blog

Plotting Music's Emotional Valence, 1950-2013

November 5, 2013

You might remember "valence" from **high school chemistry**. It has to do with how many electrons an atom will lose, gain, or share when it joins with another atom.

Psychologists put a spin on that concept, using the word "valence" to describe whether something is likely to make someone feel happy (positive valence) or sad (negative valence). It's sort of like the electron sense of the word. Is an event, situation, or experience going to add to your mood, or detract from it? That's how you can calculate its emotional valence.

Our reaction to music is also emotional. Some of it makes us happy, and some of it makes us sad, with songs falling all across the spectrum between happy and sad.

At The Echo Nest, we analyze audio in all sorts of ways as part of our deep music intelligence. One of the new, experimental ways we've been doing this is by valence.

It's no easy feat to have a computer listen to a song in three seconds and determine its emotional valence, but we've figured out how to do it. (One key aspect: We have a music expert classify some sample songs by valence, then use machine-learning to extend those rules to all of the rest of the music in the world, fine tuning as we go.)

So, has music been getting happier or sadder over time? We looked into this a bit **in response to a BBC article** a couple of weeks ago, but now, we've given valence the full audio analysis treatment. The Echo Nest data alchemist Glenn McDonald ran the 5,000 **hotttest** songs from each year back to 1950, to see how they stack up in terms of emotional valence.

The results:

The most notable aspect of this chart is how little it varies. Apparently, regardless of decade, prominent musical styles, or any other factor, we pretty much always like our pop music, on average, right in the middle of happy and sad.

Yes, we see a few spikes – the '50s oscillated between happy or sad music being preferred – and we've seen a general trend towards lower emotional valence since right around the emergence of punk rock, which makes a certain kind of sense. However, overall, the emotional effect of our favorite music has tended right towards the "happy medium" between happy and sad.

Here's one of the happiest songs identified by our valence attribute:

News & Insights from The Echo Nest, the leader in Music Intelligence

Subscribe to Feed

Recent Posts

Also From The Nest

- **Evolver.fm**
- **Musical Identity**

And here's one of the saddest (with a very low valence rating):

We have reached the last chapter in our research into audio trends over time, for now anyway. Previous installments:

- **From Elvis to Miley, 'Danceability' Remains Constant**
- **Is Music Getting More Energetic Over Time?**
- **People Liked Their Music Fastest in the '80s**
- **The Loudness War Is Real, and We Can Prove It With Science**
- **Is Music Really Getting Sadder?**
- **Acoustic Instruments: A Tale of Two Millennia**
- **As The Beat Goes On, It Gets More Accurate**
- **How Pop Music's 'Bounciness' Has Shifted Since 1950**
- **Research: Music Has Grown Less 'Organic' Over Time**

Contact Us   Contact us to learn more about how our solutions can help you and your business.

On Facebook   On Twitter