



## Anticipation: Story At Eleven

News Outlets have become giddy with the use of anticipation lately. Such as:

*This is Earth News on QCT and I'm Dorothy Deas. In the next hour, we'll talk about a new event on Mars, then interview a Utah barber whose story will be revealed on Live at Nine, right after coverage of the breaking news from France. But first, here's Joggy Shmox with an odd story from Toledo, Ohio. Joggy, strange things happen every day somewhere in the world. But today in Toledo, something particularly unsettling is transpiring, usually only seen in cartoons.*

*Joggy Shmox: Hello Dorothy. Yes, we are seeing something here that you don't expect to find anywhere in the USA outside of Cozad, Nebraska. Here's WFUD's Don Marble with Bump University's Dr. Fean Fones to shed some light on the situation.*

*Don Marble: Thank you Joe. This is Don Marble, of WFUD's mobile unit, here with Dr. Fones who has an eye on what is unfolding along the Maumee River. Dr. Fones, related events have happened in the area before, but nothing of this magnitude. Can you elaborate on what CNN is calling a major incident for the Great Lakes Region?*

*Dr. Fean Fones: Hello Don and thank you and WFUD for the rare chance to give Bump University this time to shed light on what is too often ignored by the press. As you can well imagine, the current manifestations are far too fresh to absorb and have not shown signs of abating. We will continue to monitor the situation and can assure the public that every step is being taken to keep a close tab on things here in the Toledo area.*

*Don Marble: Thank you Dr. Fones; Toledo is lucky to have you in their service. That was Dr. Fean Fones from Toledo's Bump University. Back to you Joggy.*

*Joggy Shmox: Thank you Don Marble. Back to Dorothy Deas in our studio. Dorothy?*

*Dorothy Deas: Thank you Joggy. Stay tuned for a recap of Joggy's report, which we will run right after these announcements.*

Phew. Okay, me again. Now, back to Whither Zither. Really now. Very soon. Right after this sentence...

In the **New York Times** of Sunday, June 9, 2013, in the Sunday Review section, at the bottom of page 12, there's an article titled **Why Music Makes Our Brain Sing**, by Robert J. Zatorre and Valorie N. Salimpoor. The authors of this article explain and consider the implications of a study they performed recently. Mr. Zatorre is a professor of neuroscience at McGill University in Montreal, and Ms. Salimpoor is a postdoctoral neuroscientist at the Rotman Research Institute in Toronto. Their findings, oversimplified by me:

When **peak emotional moments** are reached in music, the feel-good neurotransmitter **dopamine** is released. This dopamine is released in the **striatum**. The striatum, in humans and other animals, responds to rewarding stimuli like food and sex, and is targeted by drugs like cocaine. Importantly, they found that this dopamine release happens a few seconds **BEFORE** as well as **DURING** the peak emotional moments in music, indicating that what the authors call the **anticipation phase** of a peak experience is as exciting as the peak itself, like a tailgate party before the game.

They also detected a "cross-talk" between the striatum and the **auditory cortex** during these times. The auditory cortex is involved in storing musical information and is also involved in imagining music, as when you think about a song and "hear" it in your head. It's also involved in coding this information — figuring out its structure, its pattern — so that, for example, a melody can be mentally transposed into a different pitch. Or, in an actual listening situation, a minor chord can be differentiated from a major chord no matter what the key or what instrument is playing it.

Over a lifetime, a library of patterns is established, gleaned from the music we listen to. These patterns allow us to appreciate new music and to predict what will happen next in a given passage, based on what has happened before in similar passages. ("So each act of listening to music may be thought of as both recapitulating the past and predict-

ing the future.") This ability, therefore, causes dopamine to be released when anticipating a peak emotional moment in music we've never heard before, because its pattern is recognized.

So, anticipation in itself is a big part of the biochemistry of enjoying music. Also, I assume it's why you are bound to like more of the same kind of music, because the patterns are familiar, so anticipation phases are more frequent. It's why when you've never listened to opera, "all opera sounds the same," because it doesn't fit any patterns in your library yet. Why "that's not music, that's noise" is a true reflection of what your parents (or children) are hearing. They have a different library. Anticipation helps in the enjoyment of lyrics, too, as in the anticipation of the next rhyme, but that's another Whither Zither.

By the way, this reminds me of two earlier Whither Zithers: One, (**Imaginary Diet**, January 2011), was about a study showing that people who **IMAGINED** eating 30 M&M's, when then given a bowl of **REAL** ones afterward, ate half as many as folks who had not done the imaginary eating. Now I wonder if this imaginary eating was an example of the anticipation phase, and if, in music, the peak experience dopamine effect is diminished by the dopamine effect during the anticipation phase. In other words, the more familiar you become with a song, the peak experiences diminish inversely to the growth of the anticipations, as with M&M's. Just a hunch.

The other Whither Zither was about **WAITING** (**Full Time Waiters**, April 2007). But waiting and anticipating are two different things. Anticipation involves the fun of picturing what is coming; waiting implies a mindlessness. Thematically, **When Johnny Comes Marching Home Again** is an anticipation song: "*The men will cheer and the boys will shout / The ladies they will all turn out...*" The song imagines the coming scene. **Old Dan Tucker** has more of a waiting theme: "*Supper's over, dinner's cookin' / Old Dan Tucker just stands there lookin'.*" Anticipating is a creative process; waiting is a waste of time. But anticipation can be exhausting, at which point it turns into waiting. Just tune in to the news tonight for proof.

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