



# Speaking becomes Singing

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### Author

### Message

**Big Bad Bill**

Member



Joined: 15 Apr 2003  
Posts: 4925  
Location: Sheffield UK

Posted: Sat Nov 08, 2008 2:21 am Post subject: Speaking becomes Singing



Neuroscientists interested in music, have always puzzled as to why human speech doesn't sound like singing. It has all the characteristics one might associate with singing, pitch (prosody), rhythm, tempos etc and yet it doesn't sound like singing when it actually should. Diana Deutsch (University of California, San Diego) may be able to explain it from an auditory illusion she noticed when editing a recording of her own speech: a phrase, "...sometimes behaves so strangely" began to sound like song when it was replayed, without variation, several times.

Here, Deutsch says the sentence, and it sounds like normal speech until she repeats the segment, "...sometimes behaves so strangely," over and over until it sounds like singing.

[http://philomel.com/mp3/phantom\\_words/Track\\_22.mp3](http://philomel.com/mp3/phantom_words/Track_22.mp3)

She confirmed the illusion by testing it on proficient singers. Those who were played the phrase once spoke it back, whereas those who heard it repeated, sang it back!

Her hypothesis is that our brains normally suppress musical cues when we hear speech so that we can focus on interpretation of the words. But Deutsch thinks that repetition of words that we have already processed, can override this inhibition. "It stops the inhibition of the pitch recognition area of the brain so we hear song." She suggested in New Scientist, 8/11/08. Her team are now using functional magnetic brain imaging to see which areas of the brain are active ('light up') when people perceive the shift from speech to song and to provided evidence for her hypothesis.

Amazing stuff, eh?



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**Breeder**

Member



Joined: 25 Jul 2007  
Posts: 410  
Location: Zagreb, Croatia

Posted: Sat Nov 08, 2008 7:47 am Post subject:



I remember when my grandmother had a stroke, she couldn't talk normally, it was all gibberish coming out of her mouth, but she could sing and then it was understandable 😊



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**guitarmanK1982**  
Member



Joined: 02 Jan 2008  
Posts: 197  
Location: La Condamine,  
Monaco

Posted: Sat Nov 08, 2008 7:52 am Post subject:



Surely it's to do with the uniformity/repetition of the rhythm? A repeated section will have a uniform rhythmical structure that is easier to spot than natural speech, where tempo changes all the time.

The key has to be the rhythm - once the ear identifies a beat, then the rest becomes 'music' in the mind.

Correct me if i'm wrong here, Bill, but it seems obviously to be the repetition of the rhythm. Historically, what has acted as the key identifier of a piece of music is the rhythmical structure. All other things lacking, if there is a clear rhythmical pattern, then the ear will perceive it as music. Even Rameau talks about this in his 'Treatise on Harmony'.

Modern composers occasionally abandon the use of rhythm as structurally defining (Feldman, for example) - hence their music, still, to this day, can be 'difficult' - the natural identifier of what we know as the basis of musical structure is gone.

PS the rhythm of the example you posted ('sometimes behaves so strangely') is a 4/4 rhythm; beat 1 is triplets (some-times be) beat 2 is straight quavers (haves so), beat 3 is straight quavers (stran-gely), and beat 4 is a one beat rest.

This can be done with any segment of speech. A larger section of speech equates to a longer rhythmical phrase, therefore it is more difficult to identify it as having a musical structure.

Pitch usually only comes after the rhythm is known in the mind e.g. it can be very difficult for the non-musician to whistle/hum the introductory phrase in stravinsky's Le Sacre Du Printemps due to the lack of an identifiable rhythmical structure that the melody resides within.

Whereas a melody placed within a clear rhythmical structure will be easier to sing back.

Hence pop songs work so well 😊

This is interesting, Bill. I'd be keen to hear your view on the above.



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**Big Bad Bill**  
Member



Joined: 15 Apr 2003  
Posts: 4925  
Location: Sheffield UK

Posted: Sat Nov 08, 2008 9:19 am Post subject:



Well I think the key is it has to be repeated *exactly* the same way with no variation in pitch at all i.e. copied and pasted, otherwise the 'illusion' doesn't work even if the rhythm is maintained.



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**guitarmanK1982**  
Member



Joined: 02 Jan 2008  
Posts: 197  
Location: La Condamine,  
Monaco

Posted: Sat Nov 08, 2008 10:44 am Post subject:



Well, if the pitch changed, it would obviously be more difficult to sing back, since the pitch has altered.

However, the rhythm and the tempo could be sung back easily.

Surely it's as simple as that speech is lacking in rhythmlcal structure/uniformity?

Cultural differences would make such a study difficult e.g. in Chinese, the pitch is part of the meaning of the language.

It would be interesting to see how they would approach such a language.

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**sunai0804**

Member



Joined: 02 May 2007

Posts: 628

Location: India

Posted: Sat Nov 08, 2008 10:55 am Post subject:

[quote](#)

this stuff is really interesting !

Slightly off topic,but with a point that might support this study

Ever analyzed what key you generally speak in ??

From my experiences, all the people i have met, and heard, everyone speaks in the same key all the time, leads me to think diatonic correctness (all the time)is one of the reasons speech often comes across as speech and not music, also, most people don't talk in the "guitar keys"(never come across anyone who speaks in an A, or D, or G (major keys)). Its always the weird keys from the circle of fourths.

Think about it, every time you speak a line , normally sounds as speech, but you say it in a "guitar key", suddenly sounds like music. I was amazed when i figured this bit out, anyone else have such experiences ?

(You can also post what key you speak in, would like to know. I'll start..

I'm Eb major) 😊

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**guitarmanK1982**

Member



Joined: 02 Jan 2008

Posts: 197

Location: La Condamine, Monaco

Posted: Sat Nov 08, 2008 11:17 am Post subject:

[quote](#)

But that doesn't make sense, as, by your theory, if someone spoke in a diatonically coherent manner, they would in fact sound far more musical, as all of the tones produced when they speak would be 'musical'.

There have been some studies done on pitch - the data was regarding the actual pitch compared to body mass, height, ethnicity, emotional state of the individual etc etc I can't remember the exact researchers that done the studies, but i'll try to find out.

PS Eb major is relatively high - that is, if you mean Eb above middle C.

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**Breeder**

Member



Joined: 25 Jul 2007

Posts: 410

Location: Zagreb, Croatia

Posted: Sat Nov 08, 2008 11:38 am Post subject:

[quote](#)

offtopic: sunai, you have perfect pitch?

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**notavirtuoso**

Member



Posted: Sat Nov 08, 2008 11:52 am Post subject:

[quote](#)



Joined: 18 Apr 2007  
Posts: 1613

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**sunai0804**

Member



Joined: 02 May 2007  
Posts: 628  
Location: India

So this is why people think rap is music. 😊

I agree that it's more to do with the rhythm than the pitch. I think it would sound just as musical if not more if the pitch changed but the rhythm remained constant.

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Posted: Sat Nov 08, 2008 12:44 pm Post subject:

[quote](#)

**guitarmank1982 wrote:**

But that doesn't make sense, as, by your theory, if someone spoke in a diatonically coherent manner, they would in fact sound far more musical, as all of the tones produced when they speak would be 'musical'.

PS Eb major is relatively high - that is, if you mean Eb above middle C.

I can get where your argument comes from, it makes more sense, but just to us mind you..A non musician(or in most of our cases, guys who just happen to play instruments), won't know what going off pitch is unless it is in a musical context, i.e, when singing to a backing or something, or when listening to someone else sing(we all think we are good critics), when speaking normally, will rarely go off key, try and notice, this is what i noticed among my friends, though obviously it might be different for you. I guess its in our nature to be diatonic, any key change is a head turner, musician or not.

As to counter to that bit, we generally don't speak straight up and down scales, we speak in all kinds of diff interval jumps(again, not sure about this).Thing is, even if all the notes are diatonic, it may or may not be music, as it lacks things like arrangements or a specific melodic structure(you know, diff times, diff ways of talking, meaning diff interval jumps).But these can be turned into music, (Ya yo Gak comes to mind, minus steve, it would just be a kid going ya yo gak..)

PS. yeah above middle C i think, you mean the C on the 8th fret 6th string right ? I generally speak in this key when i'm in a very good mood, otherwise i go to a lower key, dunno which one, will figure out and tell..

PPS. Breeder i wish i had perfect pitch, but i don't. I just tried all this talking and trying to play it on a guitar, a long time ago.Though i am going to start with some really cool ear training exercises in a few days.

Also, i'm just a kid who just do this coz its fun, none of what i state above are theories of any kind, just observations. Any of you are free to contradict or challenge me..

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Posted: Sat Nov 08, 2008 12:53 pm Post subject:

[quote](#)

And this one is just an assumption, but ever noticed when most people(again guys who don't play any instrument, or have no musical knowledge) sing, its almost always a major or minor chord ?

I'm thinking, when we generally speak, its all in the Sus, dim, or one of many other oddball chords, if we were to put it in a chordal format that is.Anyone checked out abt this ??

Ps :- I just thought of this in the loo after writing the above post, so its just a passing thought.

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Posted: Sat Nov 08. 2008 1:49 pm Post subject:

[quote](#)

**notavirtuoso**

Member



Joined: 18 Apr 2007  
Posts: 1613

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**sunai0804**

Member



Joined: 02 May 2007  
Posts: 628  
Location: India

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**guitarmanK1982**

Member



Joined: 02 Jan 2008  
Posts: 197  
Location: La Condamine,  
Monaco

My wife's voice can change key very quickly from the key of sweet to the key of bitch in less space than a hemidemisemi-quaver.



Posted: Sat Nov 08, 2008 2:17 pm Post subject:



**notavirtuoso wrote:**

My wife's voice can change key very quickly from the key of sweet to the key of bitch in less space than a hemidemisemi-quaver.

Then your wife's a virtuoso ! 😄 😄



Posted: Sat Nov 08, 2008 5:22 pm Post subject:



**sunai0804 wrote:**

when singing to a backing or something, or when listening to someone else sing (we all think we are good critics), when speaking normally, will rarely go off key

It's actually the complete opposite - most people are rarely IN key.

A good way to test this is if (and this is a big 'if' here) you have an Antares avp-1, or some similar pitch correction software, set it to a specific key, or even chromatic, and you'll hear that it does drastically alter the pitch of speech.

In other words, the speech isn't really 'in key', as it were, but is predominantly microtonal, with the range centering around the one main pitch of the voice.

**sunai0804 wrote:**

As to counter to that bit, we generally don't speak straight up and down scales,

..musicians don't necessarily play straight up and down scales either.

**sunai0804 wrote:**

we speak in all kinds of diff interval jumps (again, not sure about this).

..once again, so do musicians when at an instrument.

**sunai0804 wrote:**

Thing is , even if all the notes are diatonic, it may or may not be music, as it lacks things like arrangements or a specific melodic structure(you know, diff times, diff ways of talking, meaning diff interval jumps).

You would have to now define what music is, since you are challenging the very nature of what constitutes music. You have to define it in order to counter it.

**sunai0804 wrote:**

But these can be turned into music, (Ya yo Gak comes to mind, minus steve, it would just be a kid going ya yo gak..)

And why would just a kid going 'ya yo gak' not be music? What makes speech not music? When does speech become music?

By the act of simply recording something and playing it back, couldn't that make it 'music'?

Is music about context, or is it about substance?

Couldn't any form of sound placed within a structure classify it as music? By this reckoning, if I were to record a kid saying 'ya yo gakk', and play it back, have i created music, in that I have structured the vocalisation purely by recording it? Why does the vocalisation have to be part of something else in order for it to be 'music'?

Why are video installations at art galleries considered 'art', rather than just 'footage'?

Is this (<http://fr.youtube.com/watch?v=hKy9H3Bj2fA>) music?

**sunai0804 wrote:**

Also, i'm just a kid who just do this coz its fun, none of what i state above are theories of any kind, just observations. Any of you are free to contradict or challenge me...



They are theories - they are your theories - and it's good to see you have given the issue some thought.



Posted: Sat Nov 08, 2008 5:44 pm Post subject:



...and herein lies the problem in using pitch as an identifier of 'singing':

[http://en.wikipedia.org/wiki/Tone\\_\(linguistics\)](http://en.wikipedia.org/wiki/Tone_(linguistics))

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**guitarmanK1982**  
Member



Joined: 02 Jan 2008  
Posts: 197  
Location: La Condamine,  
Monaco

I think the neuroscientists would need to come to a concrete definition on what constitutes 'singing' before they define what is and what isn't singing. I think they are playing with definitions here.

Once again, it can't be said what singing isn't, if we don't know what it is.

Wikipedia states: *Singing is the act of producing musical sounds with the voice, which is often contrasted with speech.*

This isn't a concrete definition due to the use of the term 'musical sounds'. ANY sound is musical if it is placed within a musical context e.g. a rhythmical context.

So i'd say that the example given is no longer just speech as it **has** been placed within a musical context e.g. the rhythmical pattern.

So, what the neuroscientists are doing is giving people a piece of music to listen to, and then the people are identifying it as music, and the neuroscientists are shocked that they heard it as music!! Giving the sounds a coherent structure has made it music - come on, Mr. Scientist!!

Context can actually make something unmusical 'musical', as context is simply giving something structure. When any form of sound has structure, it has the potentiality to be perceived as 'music'.

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