

PATRICK SIMPSON  
#11 SCRIPT

[Reece Tofaute: “Um, well, this is kind of a sappy story but-”]

THIS IS REECE TOFAUTE.

[“Well, when I was little, when I was like a baby and... I can’t believe I remember this, I  
can’t believe my *mom* remembered this either-”]

HE’S A JUNIOR AT CARMEL HIGH SCHOOL.

[“But when I was two, or three—I can still remember this—I remember there was just  
one song.”]

[PACHELBEL - CANON IN D]

[“Just this single song that every time it came on I, loved listening to it, and then wanted  
it to come back on. I went through all the way up until I was ten, but I found out that it  
was called Canon in D by Johann Pachelbel.”]

PROBABLY ONE OF THE MOST FAMOUS PIECES IN ALL OF CLASSICAL  
MUSIC. I HAVE A FEELING YOU’VE HEARD IT BEFORE.

[“Canon in D is something that, I listen to to help me study, it’s something that I listen to  
if I’m having trouble going to sleep, it’s something that I uh, listen to if it’s—if I want  
something pretty to listen to. I’ve also learned how to play it on piano, um, created my  
own little spin off version of it. But, that piece of music, for some reason, even though  
it’s made out of simple... a simple piece of music. But, the chords in it, the, depending  
on how the dynamics are played, depending on the musicality, it—for some reason that  
one song has the ability to move me, um, but that’s my single favorite piece of music.”]

NOW, I’LL BE THE FIRST TO ADMIT THAT WHILE I DIDN’T DISLIKE

PACHELBEL'S CANON, I DIDN'T FIND IT PARTICULARLY COMPELLING EITHER. THAT IS, UNTIL I TALKED TO REECE. IF YOU'VE LISTENED TO ANY OF MY PREVIOUS EPISODES, YOU PROBABLY KNOW THAT I'M ATTRACTED TO MUSIC ON THE FRINGES OF PUBLIC CONSCIOUSNESS—THE KIND OF MUSIC THAT CHALLENGES YOU AND MAY EVEN CHANGE YOUR PERSPECTIVE ON THE WORLD.

BUT THAT LEAVES OUT THE MOST IMPORTANT ASPECT OF MUSIC, THE REASON THAT MUSIC EVEN EXISTS IN THE FIRST PLACE, AND THAT'S THAT MUSIC MOVES US. IT MAKES US FEEL. REECE DIDN'T KNOW WHY HE LIKED THE CANON, HE JUST KNEW IT WHEN HE HEARD IT. IT'S INHERENT TO THE MUSIC. BUT WHY? WHERE DO THESE EMOTIONS COME FROM? WHY DO CERTAIN COMBINATIONS OF FREQUENCIES ORGANIZED IN TIME MAKE US WANT TO CRY, OR DANCE, OR GIVE US CHILLS?

I'M PATRICK SIMPSON, AND THIS IS MELOMANIA.

[CANON IN D]

SO, TO START, I THINK IT'S WORTH REVIEWING WHY CERTAIN PITCHES ARE CONSONANT WITH EACH OTHER. THIS IS SOMETHING WE COVERED BACK IN THE "ALGORITHMS" EPISODE, WHICH WAS... WOW, NEARLY A YEAR AGO NOW, BUT TO REFRESH YOUR MEMORY, HERE'S THE ESSENTIAL IDEA.

COMMON CHORDS LIKE MAJOR TRIADS DON'T SOUND GOOD JUST BECAUSE WE DECIDED THEY DO. WHEN YOU JUST LOOK AT INTERVALS, OR THE DISTANCES BETWEEN NOTES, IT'S ALL BACKED UP BY PHYSICS. YOU SEE, THE COMMON UNDERSTANDING IN WESTERN MUSIC IS THAT SIMPLE RATIOS

OF FREQUENCIES PRODUCE CONSONANT INTERVALS. FOR EXAMPLE, A 3 TO 2 RATIO OF FREQUENCIES PRODUCES A PERFECT FIFTH.

[PERFECT FIFTH]

INTERVALS ARE DISSONANT WHEN THESE RATIOS GET MORE COMPLICATED, LIKE THAT OF A TRITONE OR “DEVIL’S INTERVAL,” WHICH IS ABOUT 7 TO 5.

[TRITONE]

(ASIDE, PANNED HEAVILY TO RIGHT CHANNEL): AND BY THE WAY, IF YOU DON’T REALLY GET WHAT I’M SAYING WITH INTERVALS AND RATIOS AND ALL THAT, THAT’S FINE. THE POINT IS THAT FOR A LONG TIME, PEOPLE HAVE THOUGHT THAT THE DIFFERENCE BETWEEN A GOOD SOUNDING HARMONY AND A BAD SOUNDING HARMONY JUST HAS TO DO WITH BASIC PHYSICS.

BUT WAIT A SECOND... SEVEN TO FIVE ISN’T *THAT* WEIRD OF A RATIO. IT’S JUST ONE POINT FOUR IN DECIMAL. AND MOST INSTRUMENTS AND TUNERS THESE DAYS DON’T EVEN USE THIS “SIMPLE RATIO” TUNING—WHICH IS CALLED JUST TEMPERAMENT BY THE WAY. THEY USE EQUAL TEMPERAMENT, WHICH IS ALMOST ALL IRRATIONAL NUMBERS, AND THOSE CAN’T BE REPRESENTED BY RATIOS AT ALL, LET ALONE SIMPLE ONES. THERE SEEMS TO BE MORE GOING ON HERE THAN JUST BASIC MATH. SOMETHING LIKE, THIS MINOR SECOND:

[DISPARITION - ATOM AND IF]

OR REALLY THAT’S MORE LIKE FLAT NINE?

EH, CLOSE ENOUGH. BUT THE REASON THAT SOUNDS DISSONANT OR CREEPY PROBABLY ISN'T BECAUSE IT'S INHERENT TO THE MUSIC ITSELF. IT'S ABOUT HOW YOU'VE LEARNED TO PERCEIVE IT.

[ATOM AND IF]

WHAT'S REALLY DIFFICULT ABOUT DISTINGUISHING THE LINE BETWEEN WHAT'S INHERENT AND WHAT'S LEARNED WHEN IT COMES TO HOW WE PERCEIVE MUSIC, IS THAT WESTERN MUSIC HAS SPREAD ACROSS THE ENTIRE WORLD TO VIRTUALLY EVERY MAJOR CULTURE. WE DON'T KNOW WHETHER PEOPLE IN TAIPEI FOR EXAMPLE, FIND MAJOR CHORDS HAPPY AND MINOR CHORDS SAD BECAUSE IT'S IN OUR BIOLOGY, OR JUST BECAUSE THEY'VE HAD ENOUGH EXPOSURE TO WESTERN MUSIC THAT THEY'VE LEARNED TO HEAR IT THAT WAY.

BUT WE CAME A LITTLE CLOSER TO ANSWERING THIS QUESTION WITH A STUDY PUBLISHED IN THE JOURNAL *NATURE* IN JULY 2016. IT LOOKED AT HOW AN ISOLATED PEOPLE IN BOLIVIA CALLED THE TSIMANE (CHI-MA-NAY) REACTED TO DIFFERENT CHORDS. AND WHAT THEY FOUND IS THAT THESE PEOPLE HAD NO PREFERENCE FOR CONSONANT CHORDS OVER DISSONANT CHORDS. SO WHEN THE RESEARCHERS PLAYED THEM THIS...

[AUGMENTED TRIAD]

(ASIDE, PANNED AGAIN TO RIGHT CHANNEL): AND PLEASE NOTE THAT THIS IS NOT EXACTLY WHAT THEY USED, IT'S JUST A RECREATION.

... AN AUGMENTED TRIAD, WHICH IS HEARD AS UNPLEASANT AND DISSONANT IN WESTERN CULTURE, THEY FELT EXACTLY THE SAME AS WHEN THEY HEARD THIS...

[MAJOR TRIAD]

... A MAJOR TRIAD, WHICH IS PERCEIVED AS HAPPY AND CONSONANT FOR US.

THE TSIMANE DIDN'T REALLY CARE EITHER WAY. REACTIONS TO OTHER SOUNDS LIKE LAUGHTER AND GASPS OF FEAR (LAUGHTER AND GASP PLAYED UNDER NARRATION) WERE PRETTY MUCH THE SAME AS AMERICANS, BUT WHEN IT CAME TO QUOTE UNQUOTE "DISSONANCE" VERSUS QUOTE UNQUOTE "CONSONANCE," THEY WERE INDIFFERENT.

[DISPARITION - BLUE DREAMER]

SO EVEN THOUGH THIS IS JUST ONE STUDY, WE CAN ALREADY SEE THAT EMOTIONS IN MUSIC DON'T SEEM TO COME FROM THESE INHERENT RELATIONSHIPS BETWEEN PITCHES—AT LEAST NOT IN A UNIVERSAL BIOLOGICAL SENSE.

IT'S JUST LIKE WE TALKED ABOUT IN THE EPISODE ON SERIALISM—MUSIC IS LIKE LANGUAGE. PRETTY MUCH EVERY HUMAN CIVILIZATION ON EARTH HAS OR HAS HAD MUSIC, AND JUST LIKE WITH LANGUAGE, NOT EVERYONE HEARS IT THE SAME WAY. JUST BECAUSE ENGLISH IS SPOKEN ALL AROUND THE WORLD NOW, DOESN'T MEAN THAT IT'S THE ONLY WAY TO COMMUNICATE IDEAS. IT'S THE SAME FOR MUSIC.

BUT THIS STILL DOESN'T TELL US WHY MUSIC IS SO IMPORTANT TO US. EVEN THOUGH WE MAY NOT ALL SPEAK THE SAME LANGUAGE WHEN IT COMES TO MUSIC, AS I'VE SAID BEFORE, EVERY CULTURE HAS IT. BUT HERE'S THE THING: WE DON'T NEED IT. MUSIC ISN'T INTEGRAL TO OUR SURVIVAL IN THE SAME WAY THAT LANGUAGE IS. WHEN WE WERE ALL HUNTER-GATHERERS HUNDREDS OF THOUSANDS OF YEARS AGO, IT COULD MEAN LIFE OR DEATH WHETHER YOU COULD UNDERSTAND THAT SOMEONE WAS TELLING YOU TO, I DON'T KNOW, WATCH OUT FOR THAT MOUNTAIN LION.

[MOUNTAIN LION ROAR]

BUT A BACH FLUTE SONATA...

[JS BACH - FLUTE SONATA IN C MAJOR]

... ISN'T GONNA DO MUCH FOR YOU.

[Steven Pinker: "As important as music is in our lives, as much pleasure as it gives us, as much use we give it in social circumstances, it's completely unclear to me why it would have to be music that would do any of those things."]

THIS IS STEVEN PINKER.

["Why would, uh, notes and certain rhythmic and harmonic relations be a solution to any engineering problem?"]

HE'S A PSYCHOLOGIST THAT CAME UP WITH A PRETTY FAMOUS HYPOTHESIS FOR WHY WE MIGHT ENJOY MUSIC.

["And it's possible, it's an empirical issue, that music is actually a byproduct of other adaptations. Perhaps our sensitivity to speech..."]

[SPANISH LANGUAGE RADIO (RADIO AMBULANTE FROM NPR)]

["A harmonically rich sound that the brain has to analyze into its frequency components in order to understand speech. Perhaps a byproduct of emotional calls..."]

[BABY CRYING]

["That, uh, go way back in primate evolutionary history: sighs, moans, laughs, cries, and so on. Possibly a byproduct of motor control."]

[HEART BEATING]

["Keeping your bodily actions at a constant optimal rhythm. And maybe what music does is it combines bits and pieces of all these other parts of the brain, packs them into a supernormal stimulus, something that actually presses our buttons harder than anything in the natural environment would, and we enjoy it."]

[FLUTE SONATA (TRANSITION BETWEEN MOVEMENTS)]

GOING OFF OF THIS IDEA, PINKER CALLS MUSIC "AUDITORY CHEESECAKE." WHAT THIS MEANS IS THAT HUMANS DIDN'T EVOLVE TO LOVE CHEESECAKE, BUT WE DID EVOLVE TO SEEK OUT FOODS WITH LOTS OF FATS AND SUGARS, BECAUSE THOSE WEREN'T TOO COMMON FOR THE MAJORITY OF OUR EXISTENCE. OUR INFATUATION WITH CHEESECAKE IS JUST A BYPRODUCT OF NATURAL SELECTION THEN. PINKER SAYS THIS IS THE SAME FOR MUSIC.

NOW, I WANT TO BE COMPLETELY CLEAR IN SAYING THAT THIS IS ONLY ONE POSSIBILITY OUT OF MANY, AND THAT PINKER'S ASSERTION IS ACTUALLY REALLY CONTROVERSIAL IN THIS FIELD OF STUDY.

[Daniel Levitin: "He said 'you're studying something that isn't worth studying. Why would you want to study music, everybody knows it's auditory cheesecake?'" ]

THAT'S DANIEL LEVITIN, A NEUROSCIENTIST WHO VERY MUCH DISAGREES WITH PINKER. HE WROTE A BOOK ON MUSIC CALLED *THIS IS YOUR BRAIN ON MUSIC* THAT EXPLORED HOW MUSIC MIGHT HAVE BEEN EVOLUTIONARILY ADVANTAGEOUS AND MORE THAN JUST A SIDE EFFECT. FOR EXAMPLE, HE TALKS ABOUT HOW MUSIC MAY HAVE BEEN USED TO ENCODE IMPORTANT INFORMATION FOR SURVIVAL IN MEMORABLE FORMS.

[“Our ancestors, we believe now, discovered early on that by setting words to music, the mutually reinforcing cues of rhythm, and meter, rhyme scheme if there was one, helped to preserve the words in their place. It’s a lot more easy—it’s a lot easier to keep the meaning intact when the words are set to music than when we just have them memorized.”]

IT’S KIND OF LIKE THE ALPHABET SONG FOR KIDS TODAY. IT’S JUST A LOT EASIER TO REMEMBER.

SO REALLY, THERE’S PROBABLY A LOT OF FACTORS GOING INTO WHY MUSIC MOVES US. IT’S CLEAR THAT LANGUAGE AND MUSIC ARE INTRICATELY LINKED, TO THE POINT THAT WHAT SOUNDS LIKE A SICK GUITAR SOLO...

[SPASTIC INK - A WILD HARE]

... IS ACTUALLY JUST MIMICKING THUMPER’S DIALOGUE FROM BAMBI.

[A WILD HARE WITH BAMBI DIALOGUE]

MUSIC COULD ALSO BE ACTUALLY IMPORTANT FOR SURVIVAL JUST LIKE OTHER ADAPTATIONS. SO, REALLY, WE DON’T HAVE ANY ANSWERS, AT LEAST NOT DEFINITIVE ONES.



WHEN YOU LISTEN TO ANYTHING FROM FRANZ LISZT TO FRANK OCEAN, THERE'S A LOT GOING INTO HOW YOU RESPOND, MORE THAN JUST THE NOTES ON THE PAGE OR THE FREQUENCIES IN THE WAVEFORM. SO THE NEXT TIME YOU LISTEN TO YOUR FAVORITE SONG, THINK ABOUT WHAT'S GOING ON IN THE MUSIC, AND IN YOUR OWN MIND THAT'S CREATING THIS EXPERIENCE—ALL OF THE YEARS OF EVOLUTION, CULTURAL CONTEXT, AND PERSONAL EXPERIENCE LEADING UP TO THIS MOMENT. OR, JUST LET IT ALL WASH OVER YOU.

BECAUSE IF THERE'S ONE THING WE KNOW, EVEN THOUGH IT MIGHT BE A LITTLE DIFFERENT FOR EACH PERSON...

[Reece: "But music can make everyone feel something."]

[THE EMOTIONS - BEST OF MY LOVE]

MELOMANIA IS WRITTEN AND PRODUCED BY ME, PATRICK SIMPSON. THE TRACKS THAT I USED ARE, IN ORDER OF APPEARANCE, PACHELBEL'S CANON IN D, DISPARITION'S ATOM AND IF AND BLUE DREAMER, BACH'S FLUTE SONATA IN C MAJOR, SPASTIC INK'S A WILD HARE, AND WHAT YOU'RE HEARING RIGHT NOW IS BEST OF MY LOVE BY NONE OTHER THAN THE EMOTIONS. MELOMANIA IS A PRODUCTION OF 91.3 WHJE, BROADCASTING FROM BEAUTIFUL, DOWNTOWN, CARMEL INDIANA. THANKS FOR LISTENING.

[BEST OF MY LOVE]