

Club Kaur EP7: Terrifying Tunes - The How & Why of Horror Music Episode Transcript

Hosts: Ian O'Brien and Simon Hirsch

Angel Kaur: Welcome to Club Kaur, an interdisciplinary podcast exploring science stories. I'm your host, Dr. Angel Kaur, an Assistant Professor of Neuroscience at UNC Asheville. Each episode of this podcast is created by undergraduate students enrolled in one of my courses. So join us as we delve into a variety of topics with one simple goal - to get it less wrong. It's almost Halloween, so this week, we bring you a crossover story of neuroscience and horror. Undergraduate freshman Ian and Simon set out to find what makes horror music so frightening to us, and why it makes movies even more scary. This is a video episode, so head to clubkaur.com/podcast/episode7 to watch if you dare! For those listening, here is Episode 7: Terrifying Tunes: The How & Why of Horror Music.

Note: This transcript is written as a shooting script, allowing us to capture the use of visuals on screen as well.

Intro

Shot	Visuals	Audio
	GRAPHIC: Cut to black	(Scary Music) Ian (V.O.): Fear... it's everywhere... Simon(V.O.): (quietly) but specifically in horror movies Ian (V.O.): ...But specifically in horror movies
A01	SHOT: Zooming in on two sofa chairs, Simon and Ian both lean in.	Simon: But the question begs to be asked... Ian: what's a scary movie without scary music (Thunder sound effect)
A02	SHOT: Closeup, Ian and Simon sitting in sofa chairs, panning between each of them as they deliver their lines. Simon, upon delivering his last line, holds up a piece of paper, revealing the single word "Boo!"	Simon: But what makes scary music... so scary? Ian: And why is it so essential to horror cinema Simon: And what is the meaning... of life? Ian: (quietly) that's not... that's not part of the video Simon: These are all questions we will answer today. Ian: The first two... Simon: Get ready... TO BE SCARED!
A03	SHOT: Dramatic zoom into Ian's mouth as he screams.	Ian: AHHH!

How is scary music made?

Intro

Shot	Visuals	Audio
	TITLE: How is scary music made?	Simon (V.O.): Now our first subject, how is scary music made?
B01	SHOT: Ian standing in a dark alleyway. Ian shines a flashlight on his face from below.	(Spooky music) Ian: Suffice it to say that we probably didn't invent music to be scary, but at some point we realized that certain techniques would give us something that was rather unpleasant, or in some cases, terrifying.
	TITLE: 1. Pitch, 2. Timing, 3. Disharmony	Simon (V.O.): In our research we explored 3 elements of music that could be used to create a disturbing effect: pitch, timing, and disharmony.

Pitch

Shot	Visuals	Audio
	TITLE: Pitch	Ian (V.O.): First, let's discuss pitch.
	GRAPHIC: On sheet music lines, a high note appears, followed by a low note.	Ian (V.O.): The pitch of a sound is how high or low it is. (High note sound, followed by low note sound)
C01	SHOT: Simon plays a keyboard.	Ian (V.O.): Pitch changes throughout a melody, either going up, or down, and is a key component of music.
C02.1	SHOT: Simon sits at a keyboard.	Simon: As we've developed the art of music, we now have very distinct expectations for pitch in melodies.
C03	SHOT: Simon's left hand, as he plays a low note, followed by another low note. The camera pans to Simon's right hand, and he plays a high note, followed by another high note.	Simon: For example, when we hear a low note, we typically expect it to be followed by another note of a similarly low pitch. (Piano sounds) Simon: ...and high notes by notes of a similarly high pitch. (Piano sounds)
C02.2	SHOT: Simon's head.	Simon: I mean, if this wasn't the case,

		playing the piano would be way harder!
	GRAPHIC: An example melody on sheet music lines. A single note that is repeated across the melody is highlighted. Then, other notes that are used repeatedly are highlighted. The different pitches are highlighted with different colors to differentiate them.	Simon (V.O.): We expect repetition in pitch. (Melody is played) We often enjoy a melody more if the same pitch — or series of pitches — is repeatedly being used.
C02.3	SHOT: Simon sitting at a keyboard.	Simon (V.O.): We also expect to hear actual notes — A, A#, B, etc. — not random frequencies.
	GRAPHIC: The first page of “Effects of pitch and timing expectancy on musical emotion” is shown.	Ian (V.O.): Music is more likely to be unpleasant when these rules are broken. As shown by Sarah A. Sauvé and her colleagues in their 2018 study...
C04	SHOT: Simon wears headphones, before taking off the headphones to speak to someone off-screen.	Ian (V.O.): ...when participants listened to music with more unruly changes in pitch such as a melody suddenly jumping from lower notes to higher notes or a melody with two sequences of notes one after the other that are almost identical except for a few notes that differ in pitch the participants rated the music as more unexpected and unpleasant than music with more predictable pitch. Simon: This kind of reminds me of death grips.
	GRAPHIC: The album art of the <i>Hereditary</i> soundtrack is shown.	Ian (V.O.): The impact of dramatic alterations in pitch can be seen in many horror soundtracks, such as Colin Stetson’s score for the 2018 film <i>Hereditary</i> . Throughout the piece titled “Leigh’s Things,” the pitch of the melody transitions drastically between groaning low notes and shrill high notes. These huge leaps in pitch demand a reaction from the audience. (The segment of music from “Leigh’s Things,” is played)

Timing

Shot	Visuals	Audio
	TITLE: Timing	Simon (V.O.): When we talk about the “timing” of a song, we mean the amount of time between the beginning of each note. Just like pitch, we have certain

		norms for the timing of music.
D01	SHOT: Notes appear one after the other on sheet music lines.	Simon (V.O.): One of the most basic rules for the timing of a melody is that it adheres to a beat — a consistent unit of time that serves as a measure for the length of every note. The time between two notes can be 1 beat, 2 beats, or one fourth of a beat.
D05	SHOT: Simon sits with headphones on. He winces at the music. He takes off the headphones to speak to someone off-camera.	Ian (V.O.): In the same 2018 study by Sarah A Sauv�e and her colleagues, they found that participants who listened to melodies with less predictable timing rated the pieces as more unpleasant, as well as less calm and more stimulating. Suffice to say that the unexpected nature of the timing lead the listeners to feel more on edge in anticipation of each note. Simon: Can you just like, bump some death grips?
	GRAPHIC: The album art for the <i>It Follows</i> soundtrack appears.	Ian (V.O.): Unpredictable lengths of time between notes is extremely common in horror music. Sometimes, the timing of a horror score is so chaotic that it's difficult to discern whether it's written to a beat at all, as is seen in "Company," from Disasterpeace's soundtrack for <i>It Follows</i> . (Segment from "Company" plays).
	GRAPHIC: The album art for the <i>The Shining</i> soundtrack appears.	Ian (V.O.): More usage of unpredictable timing can be heard in "Polymorphia," by Krzysztof Penderecki, from the soundtrack of <i>The Shining</i> . In this section of the piece, rapidly played notes can give an ambiguity to the rhythm of the song, while louder tones play between unnervingly long pauses that get progressively shorter at a capricious rate. (Segment from "Polymorphia" plays)
	GRAPHIC: Screen recording of "mii channel but all the pauses are uncomfortably long" playing in the Youtube player.	Simon (V.O.): A more interesting example of the unsettling effects of unexpected timing that we found was this video, titled "mii channel but all the pauses are uncomfortably long." The unpredictable length of each pause — as the title suggests — creates a creeping discomfort in the listener. (Audio from "mii channel but all the pauses are uncomfortably long" can be

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Disharmony

Shot	Visuals	Audio
	TITLE: Disharmony	Ian (V.O.): What's perhaps least surprising is that disharmony is a displeasure to any listener.
E01.1	SHOT: Ian is at a whiteboard, standing like a professor, and using a ruler. A white board is next to him.	Ian: Alright class. In music, three or more notes played simultaneously become what's known as a chord.
E02.1	SHOT: Simon sits at a desk with textbooks like a student.	Ian (V.O.): Chords are a major part of most music...
E01.2	SHOT: Ian again.	Ian: ...and different — SIMON! Put your phone away!
E02.2	SHOT: Simon begrudgingly puts his phone away.	
E01.3	SHOT: Ian glares at Simon, and then continues talking to the camera. He then moves the whiteboard out of the shot, revealing a keyboard. He then plays a chord.	Ian: ...and Different chords have a huge effect on the feeling of a piece. Humans tend to have a strong natural preference for harmonious, or 'consonant' music. Chords that are consonant are comprised of notes that sound pleasing together. Allow me to give an example. (C major chord)
E05	SHOT: Simon is sitting at a keyboard	Simon: On the other hand, chords can attain a disharmonious, or dissonant sound. This can occur by using notes that are too similar in sound, or playing chords in a different key than the majority of a piece, to give some examples.
E06	SHOT: Four quick zoom ins of Ian's face from different angles, who looks over dramatically at the camera. Each shot is paired with a chord.	(A number of jarring chords, such as minor 2nd chord)
E07	SHOT: Ian sits in the foreground, while in the background Simon sits at a keyboard. Ian jumps in his seat. He sits back down, then speaks. Simon plays another chord and Ian looks back.	Ian: STOP! One was enough! ... Using these dissonant sounds (Simon plays a dissonant chord) Ian: ...Using these dissonant sounds that are of a strange chord, out of key, or just

		unexplainably rough, is one of the most effective ways to put a listener on edge. (Simon plays a dissonant chord)
E08	SHOT: Closeup of Ian as he glares at Simon	Ian: Simon so help me god turn off that keyboard.
	GRAPHIC: The first page of the study on it.	Simon (V.O.): Anne J. Blood and her colleagues completed a study in 1999 that exemplify how drastically disharmony can affect the listener.
	GRAPHIC: The D0 and D5 sheet music from the Blood article is displayed on screen.	Simon (V.O.): In their study, participants were played six music passages. The key difference in each piece was the amount of dissonance.
	GRAPHIC: The "pleasant/unpleasant" chart from the Blood article is displayed on screen.	Simon (V.O.): When asked to rate each passage as pleasant or unpleasant, the level of dissonance directly affected their answers.
E09.1	SHOT: Simon is wearing headphones, and he is visually distressed. Camera zooms in on his face, and he looks like he is about to panic.	Ian (V.O.): The more dissonance, the more unpleasant. (Tocatta plays)
E10	SHOT: Ian is wearing headphones, smiling very wide, and gives a big thumbs up to the camera.	Simon (V.O.): The more consonant, the more pleasing. (Gymnopedie no. 1 plays)
E09.2	SHOT: Cut back to where Simon was sitting, but he is not there. The camera looks around and finds Simon in the corner of the room, armed with a baseball bat. He runs at the camera.	Ian (V.O.): PET scans from the participants confirmed their ratings; many became more physically on edge when the unpleasant music was played.
E11	SHOT: Ian is sitting in a chair, now with a bandage on his head. Simon slowly creeps closer and closer, holding his keyboard. Upon Ian finishing his line, Simon smacks his hand on the keyboard, playing a mess of notes.	Ian: The unpleasant sound from disharmony can be perfect for delivering that "something is definitely off" feeling present in so many horror films. This is another example of an unsettling atmosphere created by breaking the rules of music. (Simon plays bad chord.)
E12	SHOT: Zoom super close in on Ian's face as he turns to Simon.	Ian (weakly): Stop.

Why does scary music make scary movies so much more scary?

Intro

Shot	Visuals	Audio
F1	TITLE: Why does scary music make scary movies so much more scary?	Simon (V.O.): Now to our second question: why does scary music make scary movies so much more scary?
F2	TITLE: 1. We See More Fear, 2. We Feel More Fear	Simon (V.O.): From our research, we were able to identify two overall ways in which scary music adds to a horror movie experience. First, we see more fear, and second, we feel more fear.

We See More Fear

Shot	Visuals	Audio
	TITLE: We See More Fear	Ian (V.O.): Our first point has to do with "priming."
	GRAPHIC: The quote from Psychology Today, underneath the Psychology Today logo.	Ian (V.O.): According to Psychology Today, "Priming is a phenomenon in which exposure to a stimulus, such as a word or image, influences how one responds to a subsequent, related stimulus."
G01.1	SHOT: Simon and Ian are sitting on a couch, and Simon hands out his headphones to Ian as he mouths the dialogue said by Ian in the voice-over.	Ian (V.O.): As a simple example, let's say your friend is showing you a song he just listened to. He says, "hey, listen to this!"
G02.1	SHOT: Ian puts on the headphones, and nods his head coolly to the music with a smile.	Ian (V.O.): You listen, and you think it's fairly okay.
	GRAPHIC: Rewind effect of previous two shots.	Ian (V.O.): But let's backtrack...
G01.2	SHOT: Simon and Ian are sitting on a couch, and Simon hands out his headphones to Ian as he mouths the dialogue said by Ian in the voice-over.	Ian (V.O.): and say when your friend decided to show you the song, he said, "oh my god this song is god awful, it's trash, this song is so bad, but I need you to listen to it just so you can understand why I hate it so much, please listen to this awful, terrible song."
G02.2	SHOT: Ian puts on the headphones, and sneers at the music, to the amusement of	Ian (V.O.): There's a chance you'll still like it, but less likely than in the first

	Simon.	scenario. Because your friend smack-talked the song before you heard it, you listened to it with the expectation that it would be bad. In this case, you would be primed to be more critical.
	CLIP: This scene from <i>The Witch</i>.	Simon (V.O.): So what does this mean for the characters in scary movies? Basically, when we see the reactions of the characters to frightening events, the music we hear will influence the emotions that we interpret. Just like how characters' scared faces are used to make a scary monster look more scary, frightening music is used to make those characters' frightened faces look more frightened.
	GRAPHIC: First page of "Congruence of happy and sad emotion in music and faces modifies cortical audiovisual activation"	Simon (V.O.): In 2011, Jeong-Won Jeong and his colleagues published a study that looked at how happy or sad faces would appear to people that were listening to happy or sad music.
	GRAPHIC: Four different equations: Happy Face + Happy Music = More Happy Face Sad Face + Happy Music = Less Sad Face Happy Face + Sad Music = Less Happy Face Sad Face + Sad Music = More Sad Face	Simon (V.O.): The results were simple: sad music made the faces appear more sad and less happy, and happy music made the faces appear less sad and more happy. Music was clearly influencing the viewers' understanding of what they saw.
	GRAPHIC: First page of "VIEWERS' INTERPRETATIONS OF FILM CHARACTERS' EMOTIONS: EFFECTS OF PRESENTING FILM MUSIC BEFORE OR AFTER A CHARACTER IS SHOWN" is shown.	Ian (V.O.): In an earlier study, Siu-Lan Tan and her colleagues found that...
	GRAPHIC: Two albums — one happy and one fearful — appear, on top of which photos of Simon appear, both with neutral expressions. Afterwards, the two faces change to express the respective emotions.	Ian (V.O.): ...when the music of a particular emotion — such as happy, or fearful — was played before or after videos of actors with neutral emotions, the participants interpreted the characters they saw to have the emotions of the music they heard. (Royalty free happy music, fearful music)
	CLIP: This single shot from <i>Pulse</i>.	Ian (V.O.): These studies corroborate the idea that frightening music will lead us to interpret a character to be more fearful, even if we can't even see their face.

We Feel More Fear

Shot	Visuals	Audio
	TITLE: We Feel More Fear	Simon (V.O.): Now on to our second finding, that when we hear scary music it makes what we see more scary to us.
	GRAPHIC: The first page of “The roles of superficial amygdala and auditory cortex in music-evoked fear and joy,” is shown.	Ian (V.O.): “The roles of superficial amygdala and auditory cortex in music-evoked fear and joy,” by Stefan Koelsch et al. is a 2013 study that looked at what’s happening in our brains when we listen to music that is joyful, or fearful.
	GRAPHIC: Cropped images of fMRI scans from the study are shown.	Ian (V.O.): They used fMRI scans to determine what parts of the brains were activated by listening to this music. While they made many findings, what’s most insightful for us is their finding that communication between parts of the brain responsible for audio and visual processing increased when listening to fearful music.
H01	SHOT: A close-up of Ian’s eyes, as he looks around frantically.	Simon (V.O.): Their interpretation was that as our brain heard the frightening music, our visual alertness was being increased. The brains of the participants were literally anticipating danger in reaction to the sound.
	CLIP: This moment from Hereditary.	Simon (V.O.): This helps explain why horror music can be so effective, in that it genuinely makes us anticipate to be more scared, whether if we see something we know to be dangerous, or something more ambiguous in nature.
	GRAPHIC: First page of “Film Music Influences How Viewers Relate to Movie Characters” is shown.	Ian (V.O.): In another study by Berthold Hoeckner and his colleagues in 2011, they actually investigated how their participants felt about what they were seeing while they listened to emotional music.
H02.1	SHOT: Simon’s neutral face.	Ian (V.O.): The researchers showed emotionally ambiguous faces...
H03	SHOT: Big bowl of delicious macaroni.	IAN (V.O.): ...cut with equally neutral shots, representing what the characters were supposedly looking at.
	GRAPHIC: Two albums of the respective genres of music are shown (no album is	Simon (V.O.): As participants watched the videos, they either listened to

	shown for no music).	melodrama music, no music, or thriller music. They then asked how the participants felt about the characters that they saw.
H02.2	SHOT: Simon's face again. Simon breaks his still expression to frown and look at the camera he speaks.	Ian (V.O.): When participants listened to thriller music, they found the characters to be less likeable in contrast to participants who listened to melodramatic music or no music at all. Simon: Rude.
H04	SHOT: Ian looks at a photo of Simon's neutral face.	Simon (V.O.): Later, when participants were asked to recall the emotions of the characters in each clip...
H05.2	SHOT: Ian studies the photo of Simon, then speaks to someone off-screen.	Simon (V.O.): ...According to the researchers, "the frequency of emotions recalled from clips with thriller music was in agreement with the general musical schema of suspense and impending danger." Ian: Yeah, I think he's quite threatening to the macaroni.
H06	SHOT: Zooming in on photo of Simon's neutral face.	Simon (V.O.): These findings go to show that tense music can not only make a character appear more in danger, but make them appear more dangerous as well.
H07	SHOT: Closeup of Ian's face, frowning as he looks at the photo.	Simon (V.O.): In contrast to those who listened to melodramatic music, who showed significant empathy for the characters in each video...
H05.2	SHOT: Wider shot of Ian, as he sits and looks at the photo, before looking off-screen to speak again.	Simon (V.O.): ...participants who listened to thriller music or no music at all expressed more of an inability to understand the emotions of the ambiguous-faced people, indicating a sense of distrust. Ian: Yeah, I really didn't trust this man, if I saw him walking down the street I'd cross over to the other side.
	CLIP: This clip with Hereditary.	Ian (V.O.): This similarity between thriller music and the absence of music might provide some insight into the frequent usage of silence in many horror movie moments, such as the tense dinner scene from hereditary, where each of the characters are interested in anything but revealing their true thoughts.

Outro

Shot	Visuals	Audio
J01	SHOT: Simon and Ian sit in Sofa chairs.	<p>Simon: So to recap: What makes horror music so scary is a combination of unpredictable and dramatic changes in pitch and timing, as well as an abundance of disharmony.</p> <p>Ian: And what makes horror music so good at making movies more scary is that it accentuates emotions of fear in the characters we see, activates our own fear reactions, and encourages us to consider what we're seeing to be something more worth getting frightened about.</p>
	GRAPHIC: Credits	