MUSICAL U

THE MUSICIAN'S EAR

The Active Listener's Handbook

CONTENTS

Part 1:

What is Active Listening?

Part 1 introduces you to the "what", "why", and "how" of active listening.

After completing these chapters, you will understand the principles, techniques, and benefits of active listening.

Introduction:

The Power of Active Listening

"I love you."

*"But **why** do you love me?"*

"Errr…"

How do you answer *that* question?

This is the question that we'll be addressing about music in this handbook: the question is not whether or not we love music, but *why* do we love it?

In the process of learning to express why we love music, we will also learn more about the music, learn more about ourselves, and actually come to love the music even more than we did when we first started.

Active Listening and Dating

Imagine this scene. It's right after a college class and freshman Joe approaches Jane to ask her out for a date.

Joe says: *"Whoa baby, you look hot. Let's go out!"*

Likely to work?

On the other hand we have Jim, who approaches and says: *"Wow, Jane, you gave an amazing answer to the teacher in class today and really stimulated my thinking about world peace. I also noticed that you parted your hair on the other side today, and I think that really accentuates the curve of your cheekbones, and the rich orange color of your blouse really brings out the beautiful brown in your eyes. I'm on my way to this great little frozen yoghurt place in town - would you like to join me? I'd love to learn more about your novel theories of world peace."*

Which one gets the date?

Okay, maybe Joe is more honest and direct, and for all we know Jim is actually a serial killer - but the chances are Jim is going to be a little more successful in his courtship...

Now imagine later on, Jim and Jane are in the car, eagerly anticipating the cool-yet-slightly-tangy sweetness of the frozen yoghurt to come, and listening to some classical music.

Jane, thinking out loud, says *"Well, I can tell by the twangy timbre of the harpsichord that this is Baroque music, probably from the mid-1700s. The long, winding phrases in the melodies and prominent movement in the bass also points me to Baroque. I'm guessing by the more clearly defined melodies here and terraced dynamics that this may be a piece by Vivaldi. Did you know that he had red hair like you, and that his famous orchestra was entirely comprised of orphaned and illegitimate girls?"*

If you're Jane, you're always ready with this neat party trick.

Is she trying to impress Jim? Maybe.

But the truth is she's been practicing ***active listening***, and knows a lot more about this music than she used to. She's really enjoying it, and listening to music to a much greater depth than if it was just some background music at a wedding or in a restaurant.

Active Listening and Your Musicality

Active listening will add immensely to your own enjoyment of music, and your ability to share that enjoyment with others.

But can you also imagine, once you have practiced listening to music actively, what it will do for your own musical expression?

If you understand how different parts of the music fit together, how different sounds and instruments combine together, how a piece of music is organised into verses, choruses, different musical sections. If you can listen to pieces of music from different eras that you like, and you can recognise all the different elements and how they come together - all this is going to be invaluable in creating your *own* music.

Often in reviews of music you'll see wording like *"Well, it sounds like a cross between The Beatles and Nirvana, with just a touch of '80s synth pop and sprinkled with a few droplets of Yes."*

Sounds great. But when it comes to sitting down with your instrument and *actually playing* the music you want to play - what does all that talk of *"It sounds a little like this, a little like that, somewhat like this… "* get you?

Does it tell you what notes or chords to play and how to play them? How to organize them into a cohesive, whole piece of music?

Sadly not. So how do you gain that ability, to translate from these loose wordy descriptions into clear, precise, practical implications?

How Active Listening Works

In the rest of this handbook we'll be going into detail about *how to do* active listening. But first, supposing we know how to *do* it, how is it that doing active listening impacts your musical life in all the wonderful ways described above?

Put simply: **practicing active listening "wakes up" your ear.** Everything you're learning in music, - skills on your instrument like playing scales, chords or pieces, or skills in your mind like recognising notes by ear or creating your own musical ideas - all of these can be applied to and will benefit from active listening.

With active listening, every time you hear a song you have an opportunity to both put your musical skills to use and also improve those skills.

Whenever you're looking for more time for music practice amid a busy life, active listening is high on the list of recommendations - because there aren't many of us who don't have opportunities during the day for listening to music. You might be walking the dog, washing the dishes, driving a commute - all those times when music is normally just in the background can become valuable opportunities to level up your skills.

Extra Benefits of Active Listening

There are also a couple of great knock-on effects of active listening. When you listen actively, you are also training your ***musical memory***. To be able to mentally analyse what you heard, the brain needs to hold it in place for a moment. It starts modelling what's going on, and that kind of modelling and mental structure is exactly what you need to more easily remember longer sections of music you hear.

It's also great for the skill of ***audiation***, meaning imagining music in your mind. This is often applied to improvisation, where to be truly free and creative you want to be imagining the music before you play it rather than just playing notes and hoping they sound good. When you practice active listening you're teaching your brain to conjure up vivid mental representations of music, and that's something you can then apply to the music you're creating in your mind yourself as well as the music you've heard.

The Gift of Active Listening

If you could say exactly what was going on in a piece of music, if you could talk precisely about the bassline, about the drumming part, about the guitar part, about the rhythm, about the sections, about the content of the lyrics - then you're going to know exactly what to go and do on your own instrument or voice to make that happen…

Now you're thinking and talking like a musician.

Active listening is a wonderful practice. It's something that will give and give and give to you for your whole life as you learn to have deeper enjoyment of all the music you hear and bring a deeper knowledge and understanding of music to your own musical expression, whatever form that takes.

Handbook Overview

In **Part 1, What is Active Listening?**, we're going to begin by explaining how to do active listening and how to know if you're doing it right.

In **Part 2, The Dimensions of Music** we will explore how focusing on each of the four basic elements of a musical sound will expand our listening skills.

In **Part 3, Leveling up: Form, Texture, and Audio** we look at how these dimensions combine to form the bigger-picture structural aspects of a piece of music and addressing the "audio" side of listening to music.

These modules will equip you with the fundamental mental models you need to apply active listening to a wide range of aspects of any music, along with lists of specific questions you can try asking yourself.

Note: *The question lists provided in the course of these chapters are certainly not exhaustive! The possible questions are as unlimited as music itself. These lists are intended to initiate and inspire your active listening. Over time you'll discover many more questions of your own which are interesting to ask, and you'll write favorite questions of your own in your own listening journal.*

Following **Part 3, Leveling up: Form, Texture, and Audio**, we will conclude by recapping the fundamental activity of active listening and how to fit it into your musical life to get maximum benefit.

Let's dive in!

Chapter 1:
Active Listening - How To

So what is "active listening" - and why should you be doing it?

When musicians think about developing their brain and ear for music they often make the mistake of jumping straight to music theory and ear training, thinking that what they need is all about specific concrete skills like recognising intervals, understanding the rules of harmony, or learning to adjust EQ bands on a mixer by ear.

But actually there's one big-picture skill that's possibly more important than all of those - as well as providing a great opportunity to put those skills to use.

And that's active listening.

Active listening simply means your brain is truly *engaged* in the activity of listening.

> *"A lot of people are hearing, but not many are listening."*
> - Jeremy Burns, Music Student 101 Podcast.

Ask yourself: for the music that's passed through your life in the last few days, did you just *hear* it? Or were you actively *listening* to it?

Active listening is closely related to the idea of "music appreciation". If you take a class on music appreciation it helps you start learning this skill of active listening and equips you with some key concepts to put into action as you do it.

Music appreciation isn't about judging music as good or bad - it's about becoming more aware, and understanding more about the music you hear.

It's useful and interesting for any music fan, but doubly-so for musicians.

How to practice active listening

So are you convinced? Active listening is a versatile and powerful music practice activity that you can easily fit in to a busy life - oh, and it's great fun too!

By this time, you're probably wondering: *"Alright, but what exactly are you doing when you're doing 'active listening'?"*

Here's one way to think about it is: you're **thinking while listening**. You are focusing your attention on the music you're hearing, not just letting your thoughts wander or being distracted by some other activity.

The best way to do this is by *using questions to focus your mind.*

Instead of just trying to generally pay attention to the music, try asking yourself *specific* questions about the music and then use your ears to try to answer them.

If you took just one idea away from this entire handbook it should be this:

Listen With A Question In Mind

You can begin with the overall question:

If you had to describe this song to someone, what could you tell them?

To answer that big question you can then ask yourself a range of follow up questions.

For example:

- **What instruments are present?** It might be a rock band of guitar, bass, drums, keys and vocals, or it might be a string quartet, or it

might be a full orchestra.

- **Can you hear each of the instruments present if it's a small group, or each of the sections if it's an orchestra?** Of course this can change during the course of a song or piece, so this alone can be a great question to pay attention to throughout, try to follow one or more of the instruments by ear and stay conscious of whether it's present and what part it's playing in the arrangement.

- **What's the overall structure of the song or piece? Which parts repeat and in what sequence?** This lets you form a big-picture mental model of the song, and a lot of these other questions we'll cover can slot into that structure once you figure it out. If you know the proper terminology or theory by all means use it, but a simple labelling system like "section A", "section B" and so on will work fine too.

- **How many bars are in each section?** Count it out: **1**, 2, 3, 4, **2**, 2, 3, 4, **3**, 2, 3, 4 and so on.

- **What types of rhythm are being used?** Is the beat straight or swung? Are syncopated rhythms being used? Is it the downbeat or the upbeat being emphasised?

- **Is the song in a major or a minor key?**

- **What's going on in the harmony?** You can try to hear which chords are major or minor, or if there are more advanced types of chord being used. If you've done some chord progression ear training you can try to hear the actual progressions, I-IV-V-I, etc.

- **If you've been learning solfa or intervals, can you figure out the melody notes by ear?** It can be handy to have an instrument or a keyboard app on your phone to check if you got it right.

- **What production techniques or audio effects are being used?** For example have real instruments been recorded in a simple way or is it a full-blown electronic creation?

Now as you read through that list, even without a particular track in mind, no doubt some of those questions struck you as *"oh, sure, I could do that"* and others had you thinking *"Wait, what?! There's no way I could answer that by ear."*

Fear not!

In what follows we're going to be equipping you with the concepts and terminology you need to start answering these kinds of questions. And, as you'll discover below, active listening is not a quiz where you are striving to get every answer "correct".

The list above is intended only to paint a picture of what will be possible for you in the future, and what well-developed active listening skills can deliver you in terms of musical understanding.

So the core activity of learning and practicing active listening is simply to listen to a piece of music, once or multiple times, actively asking yourself specific questions as you listen and trying to answer them in your head.

Valuable Add-on Exercise: Mental Reconstruction

As well as this core exercise of "listening with a question in mind" another great task you can do is to pause the song, or you can just take a minute after it ends - and try to recreate the song in your mind in as much detail as possible.

Again, this is developing your skill in audiation and musical memory as well as active listening.

The more questions you've been able to ask yourself and answer, the easier you're going to find it to reconstruct the song in rich, accurate detail in your mind.

Chapter 2:

Thinking – And Talking – Like a Musician

If you start doing all of this then when someone mentions a new track instead of saying

> *"Oh yeah, I heard that song. It's a pop song… "*

you might be able to say something like:

> *"Oh yeah, that song. It's got kind of a country shuffle beat to it, simple trio of guitar, bass and drumkit with the vocalist on top. Just follows a basic I-V-vi-IV progression in the verses, with a I-IV-V chorus. Starts out with an intro then it's just verse chorus verse chorus bridge chorus. In that bridge the bassist gets a solo and throws in these great syncopated rhythms to spice things up. The melody pretty much sticks to the major pentatonic in the verses but has these phrases lingering on the 7th note, the "ti" in the chorus which match up well with the lyrics about yearning. I love the barebones sound, just has a little bit of reverb but it's otherwise totally clean."*

Now you're not just sounding like a music fan - you're sounding like a musician!

Imagine having this kind of awareness of every song you hear, and the impact that would have on learning new songs or collaborating with other musicians in a band, the impact on your ability to play by ear or write your own music.

Active listening is the key to developing a truly aware musical ear, a mindful ear - one that doesn't just drift through its experiences unaware, but is fully present to all the rich detail and structure in all the music you hear, so that

you're able to hear, appreciate, understand and remember it all in a powerful way.

Sounds like a lot of work?

It's true: at first active listening does take a lot of conscious thought. But in time, though your *attention* will be focused on the music you hear, you'll find you don't need to *think through* all those questions so much. You will have awakened your ear to everything it can appreciate and be aware of in the music and a lot of the question-and-answer process will happen automatically and subconsciously..

Plus: Possibly the best thing about active listening is how easy it is to get started.

As we've talked about there's any number of ways to approach this. You can base it entirely on what you're currently working on in your musicality training, or simply begin with your own music collection and the information in this handbook and start exploring.

You can start out with the basics, like listening for the instruments present and trying to tune in to one particular one throughout the song. And then every new concept or skill you learn in music, bring that to the task and ask yourself what this song is doing relating to that concept or skill, such as tonality, harmony, rhythm, and so on.

Active Listening and Ear Training

In some of the examples and descriptions above you might have found yourself thinking *"This sounds like ear training"* or *"How could I possibly recognise that by ear without tons of practice exercises?"*

The answer is that active listening and ear training are companion skills.

Either can be done independently - but both benefit hugely from doing the other. Specifically: If you are doing ear training exercises that's going to give you some powerful low-level skills to add specific detail to the questions and answers you use in active listening. And if you practice active listening

it's going to give you extra and interesting opportunities to actually *apply* all the new skills you've developed with ear training.

So for example, with only active listening and no ear training you might describe a melody simply as "It's an ascending pattern of notes with a long-long-short, long-long-short rhythm". With some ear training that could become "It's a do-re-mi melody so if we're in C Major that's the notes C, D and E, and that rhythm pattern of quarter note with two eighth notes is played twice". Or for chord progressions with no ear training you would still be able to practice active listening and say "It sounds like that classic 50s "rock and rock" progression in the chorus" whereas with ear training you could say something like "The chorus is a I-IV-V-IV progression". And so on.

This means you don't need to feel obliged to do ear training or need to worry if you haven't already developed those kinds of skills. They are a wonderful optional addition to your active listening practice.

If you *are* doing ear training then active listening is something you can do each and every time you hear a piece of music - so it's an amazing way to fit in a huge amount of additional useful ear training practice in a very practical applied way.

Chapter 3:

How do you know if you're getting it right?

One big way in which active listening differs from ear training is in the end goal. As soon as we start talking in terms of "questions and answers" your mind may have automatically assumed our goal was to get "all the answers right, all the time".

And naturally, as in any scenario, it's generally better to be "right" than "wrong"!

But here's the crucial thing to know: Active listening is an *internal* activity which is done as much for the sake of *your own experience* as for any external results it produces.

We can break down active listening's "question-and-answer" process into two parts:

1. **Are you *hearing* what you need to hear?**
2. **Do you know the correct "name" for that thing?**

This applies throughout. For example it is entirely possible to be 100% aware of the form of a piece, with an elegant mental visualisation of how it all fits together - without having a clue which bit should be called the "chorus" or whether this is a classical "rondo" structure. It's entirely possible to be hearing and analysing the instrumental makeup of a piece accurately - even if you have no idea whether one particular instrument you're hearing is a clarinet or an oboe.

The point here is that yes, it's great to know the correct terminology wherever possible, and understanding the theory and names etc. can actually help you hear and understand more precisely.

However: **the heart of active listening is in the *listening*, not the *knowing*.**

If you took yourself off to live like a hermit in a cave with nothing but your music collection, it would still be entirely possible to become an expert active listener - even with no theory books or teachers or reference material to tell you the "correct" names for all the things you were beginning to hear.

So: Learning the theory and terminology is helpful for improving your skills more quickly and it's helpful for communicating the new things you're beginning to hear.

But don't be intimidated by not knowing that side of things (yet). It is all learnable and it is *not* the most important part of learning active listening.

With all that being said: **how *do* you know if you're getting it "right"?**

If it's just you alone in a room with the music then the most useful tool you have is: self-consistency. Take the example of musical form. You may be getting the assignment of "verse" and "chorus" wrong when you try labelling the sections of a song. But what matters more is the underlying "ABABABB" or "1, 2, 1, 2, 1, 2, 2" structure you're hearing. So as long as you're being consistent about which section of the music you're calling the "verse" and which the "chorus" that's the main thing.

Or similarly, supposing you're mixed up about what audio effect is called "chorus" and which is "distortion". You might practice active listening for a week noticing all sorts of uses of what you think is "chorus". Does it matter that the correct name is actually "distortion"? For the purposes of training your ear and your mind, no.

Why?

We all hate to be wrong, so it might seem strange for an educational book to tell you it's okay to be wrong!

But the valuable work in active listening is the time you spent listening and analysing in your mind. These mistakes of terminology can be very quickly corrected.

When someone points out to you that the crunchy sound is actually called "distortion", not "chorus" - or explains that a "chorus" is the bit that's always the same words and the "verse" words change each time - in an instant, you're corrected. All the time you spent actively listening for those things isn't invalidated - in fact it's just as valuable as before, you just have the small tweak to have the right terminology.

So the main thing is to keep putting in the practice and check yourself for self-consistency.

Now most of us *don't* live like a hermit, completely in isolation! So you do actually have a range of options available for "checking your answers".

Here are a few suggestions:

1. **You can ask a musical friend.** Their knowledge and their ears will be different to yours, so they may both hear things you didn't yet hear, and they may know more about how to describe those things in the common vernacular. (And you might soon be surprised to discover how much more you are hearing than most of your musical friends, once you start practicing active listening!).

   Tip: If you're focusing your active listening or you have a particular doubt about a certain thing, such as an instrument or genre of music, it's great to seek out a musician who specialises in that. Even if they haven't spent time on active listening they will have accumulated ear skills and knowledge passively just through their regular musical life.

2. **You can ask a teacher.** An instrument teacher, particularly one who studied music at a college level or above, will generally have strong ear skills and knowledge that can help check what you think you're hearing.

3. **You can "ask the internet".** Often a Google search will turn up blog posts or discussions about a particular music track or an aspect of music. For example you might search for: "classical music forms", "distortion guitar effects", "timbre of different instruments" and so on, or you might search for "Joni Mitchell voice characteristics" or "chord progression analysis Beatles Let It Be".

4. **You can "ask your instrument".** Although active listening itself is an internal activity in your mind, when it comes to "checking your answers" in some cases it's helpful to experiment in the real world. For example you could try playing back a melody by ear to see if you were identifying the notes correctly or you could use software like GarageBand to enter a rhythmic pattern and see if you were hearing the pattern of notes you thought you were.

5. **You can ask a community.** Whether in person or online, communities of musicians can be a great place to ask any active listening questions you have. There's no quicker way to get a discussion going than ask a probing question about music people love! And compared with seeking out a particular friend or teacher, this way you'll get a variety of answers that may be more useful than any one expert.

   There aren't many communities that specialise in these "inner skills" of music, but active listening questions would be welcome in most online musician communities, and **it is a particular focus at Musical U** where we love to discuss this stuff and have experts on hand as well as many musicians of varying backgrounds and levels of experience.

So as you can see there are a variety of ways you can "check your answers" - and each of these will typically lead to enlightening conversations and discoveries which advance your active listening far beyond the specific question you were seeking an answer to!

In conclusion: There are many ways to check if you are "getting it right" when you answer a question during active listening. **But remember that *getting* it right is far less important than *doing* it right**.

As long as you are paying attention to the music, asking yourself specific interesting questions, and carefully analysing the music in your mind to try to answer those questions, then you are doing it right.

Part 2:
The Dimensions of Music

Understanding the dimensions of music gives you the tools to listen much deeper into the music you love by understanding the aspects, parts, and qualities that make up the whole of a musical performance.

After completing Part 2, you will be able to hear much more richness when listening to music, identifying aspects of timbre, pitch, rhythm, and dynamics.

Chapter 1:
The Dimensions of a Musical Note

As we break down all the different parts of music that we can be listening for as we practice active listening, let's begin with the smallest element: one single note.

Notes will be added one to another (and another) until many notes are strung together as melodies and stacked on top of each other to create harmonies, but all that wonderful complexity starts with one note, which simply means "a sound used to make music".

A musical note has four dimensions:

- **Timbre**
- **Pitch**
- **Rhythm**
- **Dynamics**

Timbre is a French word that is pronounced like the first part of the word "*tambour*ine". The English equivalent is "Tone Color". So we are using a visual metaphor here, the idea of a note having a color, but we are talking

about the property of a sound that makes one note sound different than another, even if they're playing the same pitch.

So for example if you listen to a flute playing the pitch we call "A440" or you listen to a piano playing that same pitch "A440" you can immediately tell the difference between the piano and the flute by their timbres.

Pitch is the perceived highness and lowness of a sound. That's one thing we're going to be asking ourselves a lot: *"Where on the whole continuum of high sounds to low sounds, does a particular pitch in the music fall?"*

Musical notes exist for a certain length of time. The musical term **Rhythm** describes the pattern of the longness and shortness of notes and the silences in between.

Sounds carry varying degrees of energy. When it's a small amount of energy, the sound is what we call a "soft" or "quiet" sound. With a large amount of energy we call it a "loud" sound. We refer to this as softness, loudness, or "volume". The musical use of changes in volume over time is called **Dynamics**.

These are the four dimensions of a single musical note. These dimensions then combine in infinite variations to create more structures in the music for us to listen to.

Right now, even with nothing but your new awareness of these dimensions, you could start listening to music and asking yourself for example:

"What different timbres can I hear, can I figure out what instruments they are?"

"How is the pitch of the different notes, the highness and lowness of sounds used in this piece?"

"What's going on with the rhythms here - overall and for a particular instrument?"

"What are the dynamics? Loud, soft - do the dynamics change at any time?"

In the following chapters we will look more deeply into the structure of music, and how you can employ these understandings to more deeply appreciate the music in your life.

At the end of each chapter, you'll find a list of interesting questions you can ask your ears to further you on your active listening journey.

Chapter 2: Instruments and Timbre

Listening for instruments is the easiest way to start your active listening practice. Each instrument distinguishes itself from the others by its unique timbre, or tone color.

Scientifically, this is a complex recipe of sound waves that makes up each instrument's signature sound, and which can also vary individually, from one performer or model of instrument to another.

When it comes to electronic instruments, this whole element becomes exponentially more varied, as different keyboard and synth players devise crazy new timbres, or as the electric guitar - a veritable timbre machine - is processed through all different kinds of pedals, amps and various other electronics.

There are lots of descriptive words that we use to describe timbre. For example, "twang". We can say *"So-and-so sings with a twang."* With a singer that means they have a more nasal timbre or tone color. An instrument can be twangy too, for example we can say a banjo typically sounds more "twangy" than a guitar.

We can also talk in terms of the complexity of a timbre, with words like "simple" or "rich". For example, an electric guitar which isn't plugged into an amplified has a very simple timbre. It sounds like a metal wire being plucked which is one of the simplest musical sounds it's possible to create. Similarly, the triangle in an orchestra produces a very simple sound when it's played. On the other end of the spectrum, hear a cello play even a single note slowly and with feeling and there is great richness and complexity to the sound hitting your ears. The human voice can have such rich timbre that it connects deeply and emotionally with us - even without words or any cleverness to the pitch or rhythms used.

Timbre is something to listen for in and of itself, and then how it contributes to the overall structures and textures in musical form (we'll discuss this more in following chapters).

Instrumental Timbre

Music uses timbre in a variety of ways. Frequently the contrasting timbres of instruments are played off against each other. But even individual instruments use contrasting timbres in their performance.

The guitar - even a single acoustic guitar - can produce many different timbres, depending on how it's played - close to the bridge, over the sound hole, close to the neck, with metal or plastic fingerpicks, fingernails or fingers. Different individual instruments, styles, woods, techniques - all contribute to the timbre. As you actively listen to different guitars and guitarists, for example, you'll a deep appreciation for all the ways that timbre can be used musically, and clarify what choices you will make in your own musical development.

The same thing goes for most instruments, that they can produce a wide range of timbres, or tone colors, depending on the pitch range. Whether it's a high, or low, for example, might have a different kind of a timbre, or tone color that you could be looking for in your active listening.

That would give you a clue as to what you might do with your instrument, or something that you might want to re-create, or be inspired by.

With a saxophone for example, you may want to be adjusting your embouchure, or the reed that you're using, or any number of variables, to produce a certain timbre, for a certain purpose.

This is one reason that if you play an instrument yourself, listening for that instrument can be a great starting point in your active listening. You will both have a headstart because your ear and mind are already attuned to that instrument's specific nature, and you will see a greater payoff because your new listening discoveries can provide useful direct application in your musical life.

Timbre and Genre

Timbre also can help you to listen for what the genre of a piece of music is. So for example, if you hear someone playing a saxophone with a round, deep sound which is called "sub-toning", then you might know to identify that with the genre of swing jazz. If you hear the saxophone being played with a very wide, open kind of nasal tone, you might associate that instead with modal jazz from the 1960s.

Or, if you hear it being played with growling sounds (produced by singing and playing at the same time) you may associate that with rock 'n' roll.

Learning these connections between timbre and genre can also help you when you're playing music by revealing how to play appropriately for that genre.

For example, you wouldn't want to be playing a big growly saxophone sound, on an old jazz standard ballad! Similarly, a guitarist would choose certain guitar sounds because these are going to vary by the genre. The guitar sound that you would use for metal for example, won't be the same as the guitar sound that you're going to use for jazz.

As well as these individual instrument timbre considerations there are different ways that instruments combine their timbres together, "ensembles", that can also tell you about what kind of music it is.

For example, if you hear a banjo, a mandolin, a fiddle, and a bass, and a guitar, you're likely going to be listening to bluegrass music, or some kind of Americana music.

If you're hearing a string quartet, oftentimes it will be classical music. Or, if you're hearing sections of saxophones, trumpets, trombones, along with bass guitar, and a piano, you might be listening to big band jazz.

So different instrumentations are associated with different genres of music and listening for timbre is your gateway to identifying those instrumentations and hence having a strong clue as to the genre.

Of course these are connections and not strict rules! The musical effect is often enriched when genres cross paths, for example bringing a banjo into a rock 'n' roll band - it evokes a taste of a different genre, and hearing that adds richness to the listener's experience of the music.

What Happens When You Start Listening for Instruments

Now as we're listening to timbres, and different instruments, one exercise that can get you quite far in your active listening, is to **pick one instrument and follow it throughout the song.**

In certain songs, there might be an instrument that's always in the lead, but more often it will vary over time. By default we as music listeners tend to be aware of the most prominent instrument, the lead instrument at any given time. The challenge for you as an active listener is to follow a particular instrument *whether it is the "lead" or not!*

For example, you might practice listening to the lead guitar in a certain song, but most of the time the lead guitar won't actually be leading through the whole song. There might be a lead vocalist coming in, and when they sing the guitar will be playing counter-melodies, or backup riffs. Or, the guitar may switch between lead and rhythm playing, becoming more prominent when playing a solo as lead and less prominent when playing the rhythm guitar part in the background. Can you follow that same guitar even as its role and prominence changes?

If you listen to that timbre, and follow the guitar through the song, you're going to learn a lot about what things you'll need to learn to play that kind of music or write that kind of music yourself, as well as deepening your appreciation of how that kind of music works purely as a music listener.

Listening to Timbre for Layers of Musical Texture

To give another example: you might choose to follow the bass (guitar) through the whole song. Rarely does the bass take the lead in mainstream popular music, but it's a very important element and you can normally follow

it throughout the song and hear how it's interacting with everything else that's going on.

At that point you may even find yourself wanting to follow the exact pitches the bass is playing, and learning to identify them by ear, or understand how they relate to the chord progressions. We'll get to some of these things later, but the point for now is this: following one instrument throughout the song, can really open up your ears to **how all the layers of music are put together.**.

Similarly you may even just follow the drum set, or even just one drum. What is the snare doing in this song? What is the kick drum doing? What are the cymbals doing? Often we take the percussion part for granted even though it has a huge impact on our experience of the music as a listener! Tuning in to the percussion, even dissecting it into its component parts, can quickly transform your appreciation of how important that layer of the music is.

Similarity and Contrast

Another important aspect of listening for timbre is to think about the similarity and contrast of timbres present.

If you're listening to classical music, you may be trying to follow the individual parts of the brass instruments, or the string instruments. In some cases that can be quite difficult, because the timbres blend together so well! For example, a viola and a violin have such similar timbre that it may be difficult to distinguish them except by listening in terms of pitch instead. So listening for one of those instruments can be quite a challenging exercise (in a good way!).

In other cases, the timbres are quite different, for example between a French Horn and the string sections - so if you're following the French Horn part you're unlikely to accidentally tune in to what the strings are doing!

This same principles hold across all different kinds of music, including electronic music. Even though in that case all the music might technically be produced by one instrument, each synthesised sound in electronic music can

be considered a *different* instrument with its own timbre, and so you can follow that timbre.

Listening for Roles

Electronic music (by which we mean here music produced by an electronic synthesiser) is a useful case to illustrate how listening for timbre can help us understand musical roles.

Oftentimes in electronic music the synthesised instruments mimic the roles of real (acoustic) instruments. So even though it may all be played on a keyboard, you'll still have "a bass part". You'll have part of it playing harmonies and chords, and part of it playing melodies. You can find these different roles through listening for the different timbres, and listen for how they work together from there.

Developing Your Ensemble Skills – Before You Even Have a Band

One major side benefit of this kind of timbre-based active listening is how much it enhances your appreciation of other instruments and also how ensembles work together.

Musicians have a tendency to get laser-focused on their own instrument, including any time we hear music - it's our own instrument that tends to draw our attention by default.

By practicing active listening which specifically focuses your attention on each instrument present and how they work together you broaden your appreciation and that will make you a far more capable and appreciated musical collaborator in musical groups in future.

EXAMPLE QUESTIONS: Instruments and Timbre

Reminder: Almost all questions can be asked for the whole piece of music overall, as well as for a particular instrument, a particular section, etc.

- *How many different instruments can I hear?*

- *What instruments am I hearing?*
  (can be broad e.g. "strings, brass, woodwind" or specific "two violins, a viola and a cello")

- *Are there any clear groupings of the instruments, by timbre or instrument family, or by the role they're playing in the music?*

- *What is the timbre of this particular instrument like? How does that compare to what's "normal" for that instrument, is there anything distinctive about this particular timbre?*

- *How are the various timbres present similar to each other? How are they different?*

- *Is the instrumentation or the mix of timbres changing over the course of the piece? If so how is it changing? From one section to the next section, and during each section?*

- *What's the impact of instrumentation and timbre on the mood of the music? How is it being used artistically, for effect on the listener? What would this piece sound like with a particularly different instrumentation/timbre?*

- *What other music do I know that sounds like this, in terms of timbre? (bonus points if you can cross genres!)*

- *What are the musical roles I can hear? (e.g. lead melody, rhythm section, backing harmony, countermelody, etc.) How do they correspond (or not) to the different timbres present?*

Write in your own questions on Instruments and Timbre:

Chapter 3: Pitch

When we're thinking about pitch in music, we can think about how it's moving *forward* on the horizontal time axis, which is the **melody**, or how the pitches are all *stacked up* vertically on top of each other at any given moment, which is **harmony**.

We'll talk about each of these two in turn.

Pitch and Musical Structure

Pitch is a really good determining factor in understanding the texture and form of a piece of music, as we look and see how things are stacked and how they move. When you add pitch and rhythm together, you have a **melody**.

One question you can ask your ears: *"As you move from one section to another in music, what happens to the overall pitch?"*

For example, in most popular music, when you move from the verse to the chorus, the pitch generally goes up, where the chorus is sung with a group of higher pitches than the verse. This isn't true 100% of the time but this is what our ears expect and so when it *doesn't* happen, that's also something to take note of, when you're actively listening.

Scales and Specifics

As a starting point, listening for when the pitch gets higher and when it gets lower can tell you a lot about the music. We call this the ***pitch contour*** of a melody.

From note to note, the pitches in the melody move one of three directions:

1. Up

2. Down
3. Repeat the same

This pitch contour is critical in how musical *phrases* are shaped and how the overall message and emotion of the music moves forwards.

We can get more specific in our active listening for melody pitches, especially if we've done some ear training.

Melody notes are generally taken from a particular scale. When pitches from outside the scale are used these typically stick out a bit to our ear so most of the time melodies will be moving around the pitches of the scale. Sometimes the pitches are close together, moving in *steps,* meaning that the pitches are moving up and down the scale without making any jumps or skipping any pitches.

Or you might find there are *leaps* in pitch where a note from the scale is skipped over.

With some ear training, you can learn to identify the specific notes being used. There are two main approaches to this: intervals and scales degrees (a.k.a. "solfa"). The interval approach involves developing your mental "pitch ruler" to judge how large the leaps are. The solfa approach involves learning the characteristic sound of each note of the scale.

Identifying note pitches by ear is a quite advanced skill which we mention here to explain how that kind of "play by ear" skill relates to active listening - but most musicians, including those who are very good at active listening, will not be able to name the specific notes being used in every melody they hear, so don't worry if this seems beyond you for now!

Harmony

The vertical dimension of pitch is harmony: what happens when you start stacking notes on top of each other simultaneously and how they resonate and combine with each other as a musical sound.

There are many different levels of harmony. Some music doesn't use harmony at all - there's only one voice, one instrument, with **no harmony** backdrop underneath it.

One level beyond that would be a simple form of harmony that's used in different forms of world music is a **drone**-based harmony, where there are one or two notes that establish the scale and they are played constantly throughout the music, for example in classical Indian music, Hindustani or Carnatic raga.

In most mainstream music, there is a much greater degree of harmony used, often expressed in terms of **chords**. Sometimes it's just one or two chords, often three or four and sometimes there's a whole lot more.

Different genres tend to use different numbers of chords. So for example in popular music, oftentimes the songs may use only three or four chords - but in jazz, you find pieces where there's maybe 10 or 20 chords used, or more, in the course of a piece of music.

It can be helpful to think about **how the harmony is being produced**. Specifically, how does the number of instruments relate to the number of note pitches you're hearing? A "C major chord" sounds quite different when there is a guitar strumming the three defining notes of C, E and G across six strings as when there is a four-part choir of one hundred people singing those same three chord notes, or when a pianist plays an eight or even ten-note voicing of the same chord spanning several octaves!

Harmonic Rhythm

Chords change at certain times, so there's also a horizontal dimension to harmony and that's known as **harmonic rhythm**. A chord can change every measure (which typically equates to every few seconds - we'll define "measure" in the next chapter), or every half measure, or every beat even. You will hear some crazily fast chord changes in some jazz music! Or you can have a chord that stays the same over several measures at a time.

Listen for when there's a change in harmonic rhythm: you may have a chord that's going for a long time and then all of a sudden there's a lot more

chords that come at a more rapid rate. That can indicate a change in form, meaning a different section has begun.

All kinds of things related to the musical form can be indicated by this harmonic rhythm.

Pitch and Musical Roles

In the most common musical texture, we can name three basic musical roles, which are distinguished by pitch. The melody, which is the stream of notes which we identify as the most prominent, the "lead" - and then the harmony, which would be played by a chordal instrument, such as a guitar or a keyboard or piano - and then the bass, played by a bass guitar or a synth, or another low instrument.

This division of labor, so to speak, has been with us for quite some time and has its origins in the Baroque era of classical music. That was the era of the 1600s and 1700s in which composers put a lot of attention on the bass lines and the melody lines and then improvised the harmonies with a sense of harmonic rhythm.

Most often the melody (also called the "lead") is the highest pitch in the music. This stems from the fact that our ears are most sensitive to the frequency ranges of the human speaking voice which corresponds to the higher pitches playable on most instruments. The harmony frequently is played at a lower pitch than the melody, and then the bass is played at the lowest pitch. So listening for these pitch ranges can help you to distinguish these layers.

Pitch and Timbre

Another thing to look for with pitch is that with different pitches, come different timbral qualities in an instrument. So for example, when you play high pitches on a guitar it sounds quite different than playing low pitches. When you're playing high squealing sounds in a guitar solo or low deep sounds, let's say in a song like Johnny Cash's "I Walk The Line" there's very different timbres to the instruments.

The same thing goes for the singing voice. Oftentimes, when we're singing pitches that are high in our range, there's a sense of urgency, a sense of intensity and when we're singing low in the range, it's more mellow sounding. So questions to ask when listening to songs are, *"When do the pitches go up? When is the singer working harder?"*

Higher pitch in vocal lines often indicates a higher emotional content in the lyrics, so this is another question and something to listen for in your active listening.

EXAMPLE QUESTIONS: Pitch

Reminder: Almost all questions can be asked for the whole piece of music overall, as well as for a particular instrument, a particular section, etc.

- *Are the pitches I'm hearing relatively high or low? How does that differ by instrument? How does it compare from section to section of the form?*

- *What's the pitch contour of the melody (or whatever instrument I'm tuning in to)? With each phrase is it ascending, descending, tracing an arc up and then back down, something else?*

- *Are there leaps in pitch or is it simple stepwise motion? If there are leaps are they large jumps or just small skips?*

- *(If you've been developing your sense of relative pitch through ear training:) Can I identify the specific intervals or scale degrees (solfa) being used?*

- *Can I hear multiple instruments playing in unison (the same pitches)? How many different pitches can I hear at once?*

- *Does the arrangement follow the normal configuration of melody being the highest pitches, harmony beneath that and bassline at the bottom?*

- *What kind of harmony is being used? E.g. no harmony, a simple drone, chords. Does that change over time?*

- *What's the harmonic rhythm: how often and with what pattern are the chords changing? What's the overall pacing of changes, are they frequent (e.g. multiple chords per measure) or relatively slow (one or more measure per chord) - and does that change from section to section?*

- *How is the timbre being affected by changes in pitch?*

Write in your own questions on Pitch:

Chapter 4: Rhythm

There are several different interrelated aspects that have to do with rhythm, that you can be listening for together and separately. The first thing to listen for, is the **pulse**, also referred to as the **beat**.

Pulse

When we talk about beat here, we're not talking about a whole arrangement of music, such as the percussion and backing section you'd find called a "beat" in rap or hip-hop music. We're talking about just the basic *pulse*, or *heartbeat* of the music.

This pulse is steady, and underlies everything.

You can think of the pulse like a yardstick that measures out the music. This is the first thing to listen for, because when you can hear the pulse, you can use it to measure the other rhythmic qualities.

One great way to find the pulse is to clap along with the music. Clap along with a steady beat, and see where you can find that steady pulse with the music in your body.

Once you've found the pulse, you'll have a baseline for measuring all the other rhythmic aspects.

Difficulties with the Pulse

At times, this sounds like this might be easy and basic, but it's not always so! There are oftentimes rhythms that are accented, that are not falling right on the pulse, known as *syncopation*, that can throw you off. We'll talk a little bit more about that later.

There are sometimes certain kinds of music where the pulse is less obvious. If you can imagine a slow classical piece, in which there's a beautiful

melody, you might not readily determine the pulse, because it's not being played explicitly by any specific instrument.

But it's still there. It's underneath everything, and it's what helps musicians to be able to know how long, or how short to play their notes. In other types of music, the pulse is actually being played beat-by-beat by an instrument, by a drum or another rhythm instrument, so you can hear clearly where the pulse is.

Meter

That pulse, in most musical styles, is grouped into regular groupings of "accented" and "unaccented" beats, meaning louder and softer beats. There is a tremendous percentage of popular music that uses a quadruple meter, or a four-beat meter, where there is a strong accent on the first beat of those four beats: **1**, 2, 3, 4.

These beats can be accented in different ways though. For example, in some blues styles and early rock and roll, and popular styles, you might hear an accent on the second beat and the fourth beat, rather than the first and the third beats which are the stronger accents in classical music. It turns things around a little bit, and plays up against the melodies, which are accenting on the first beats.

Measuring Music with Our Ears

Hearing the meter helps us measure the music. The meter is divided into regular sections called, **bars** or **measures**. You can actually count the number of measures of a piece of music while you're listening, and you'll know how long something is, how long each section is.

A common practice to help you keep track is to replace the first "one" of each measure with the number of the measure. For example let's say you were counting a piece of music in 4/4, instead of counting "1, 2, 3, 4 / 1, 2, 3, 4 / 1, 2, 3, 4" and try to separately count the measures, you would count "**1**, 2, 3, 4 / **2**, 2, 3, 4 / **3**, 2, 3, 4" and so on. In this way, you would be able to count how long a particular section of the music is.

More Meters

Now, of course, there are many other metrical possibilities besides 4/4. Another very common one in western music is 3/4. This "triple meter" is not nearly as common as 4/4, in terms of popular music, but it is very common in classical, older styles of dance music, and folk music.

Triple meter is counted **"1**, 2, 3 / **1**, 2, 3 / **1**, 2, 3" Many times, we think of this as a waltz rhythm, and this also points out something else with music - much music is intended to be **danced** to, or is brought from dance music into other genres. And rhythmic patterns can have origins in the way we like to move our bodies.

So if there are heavy pulses which make the music easy to dance to, that's another thing that we can be looking for in the rhythm of the music that we're listening to.

Subdivision and Compound Meter

Another thing to listen for is not just how the beats are grouped together, but how they are divided. For example, you can divide a beat into two parts in music, or you can divide it into three parts. Again, these twos and threes, and multiples of twos and threes are the most common so in the case of meter as discussed above, once you know triple meter and quadruple meter, that's going to cover the majority of music you hear.

Similarly, if you think about *dividing* your beats into two, or three, that's going to cover a lot of ground too, even though there is music out there which has odd subdivisions of the beat - like fives, and sevens, etc.

If you keep your sights on twos and threes, you're going to be in good shape.

You may be aware of meters like "six eight" and "twelve eight" which are called compound meters. The only thing you need to understand is that 6/8 is really just a duple meter with a triple subdivision. And similarly 12/8 is quadruple meter, subdividing the beat into three parts.

When you hear music like a blues shuffle, that's an example of this style of compound meter, and you can hear this long, short, long, short, long, short, long, short rhythm. Or, if you're listening to an Irish traditional jig - deedle-ee, deedle-ee, deedle-ee, deedle-ee, deedle-ee, then you're also having a compound meter divided into three, the two part beat divided into three parts.

How to Listen for Meter

The easiest way to listen for meter is to find the pulse, then count either "1, 2, 3" or "1, 2, 3, 4" along with the music. One of them is going to fit better, feel more comfortable and natural. You can go further, trying to determine whether the music is 4/4 or 2/4, or whether it's simple or compound meter. But **just determining whether it's some multiple of triple or duple is really enough for most purposes**.

Rhythm

We've talked about beat, and we talked about meter. These are both aspects that form a background structure for the **rhythm** itself.

The rhythm of the sounds plays against the beat and meter established. When you're listening, is the rhythm going right along with that steady beat or are there a lot of rapid notes squeezed into a certain area, or slower notes, longer notes, shorter notes? What about the silences in between them?

One thing to listen for is how the rhythms change from one section to another. So, for example, if you are listening to a popular song, in song form, during the verse, you may have more rapid notes, shorter notes, shorter durations on your notes. And then, when it comes to the chorus, you may have longer notes. Very typically, in good songwriting, the rhythm of each section contrasts with the other sections. There's also a place for having mixed long and short rhythms, which gives a certain effect.

The notes themselves may fall right *on* the beat, or they may fall *off* of the beat, on what trained musicians would call the *"and"*s of the beat (because they count a beat subdivided in two as "1 and 2 and 3 and 4 and".

When they fall off the beat, and they are accented we have what's called *syncopation*. Certain forms and styles have syncopation as typical, and others have syncopation being something unusual.

For example, in ragtime music you have very frequent syncopation throughout the piece. It's very clearly stated in a ragtime piano piece, because the left hand's playing a straight ahead march rhythm, while the right hand's playing off-beat rhythms.

In ragtime, syncopation is expected, so when the rhythm goes "straight" it's a sharp contrast. On the other hand in classical music, syncopation is saved for special moments, so when it happens it's more of a surprise.

So, listening to whether the beats are falling on the beat or off the beat is another clue as to the genre and how the particular piece obeys or plays with the expectations of that genre.

Tempo

One further aspect of rhythm is how fast, or how slow the beat is moving. This is called **tempo**.

When we talk about music being fast, or slow, we're talking about the tempo, how fast the beat is moving.

In a piece of music, tempo can stay constant throughout or it can change over time. In classical music, changes in tempo, speeding things up, slowing things down at certain places, is widely used for expressive effects, to mark the coming to the end of something, whereas in most popular music, the tempos are very steady, and straight throughout. If they are going to change, they change all of a sudden. Think of your typical indie song, where it starts with somebody strumming on acoustic, and all of a sudden, the band comes in at double the tempo.

Also in most popular music, even when there is a change in tempo, it's usually doubled, or quadrupled in some way, where it's in a direct ratio, speeding up, or slowing down - rather than the gradual, or nuanced changes

in tempo that you'll find in classical music, and in some other styles of music.

In certain genres of Greek music, for example, you find a very slow and steady increase in tempo, which musicians call "**accelerando**".

If you can imagine dancing to this and you're dancing in a circle, this can be very exciting as it gets faster, and faster. So there are many rhythmic ideas that serve the dances where the music originated from - you can trace the rhythms back to the way the dancers move their bodies.

EXAMPLE QUESTIONS: Rhythm

Reminder: Almost all questions can be asked for the whole piece of music overall, as well as for a particular instrument, a particular section, etc.

- *How fast is the music overall? Does that change over time? If so are those changes sudden or gradual?*

- *Can I clap or tap along the beat (even just in your head) and divide it into measures? Can I hear which beats in each measure are accented, for example just "1", or is it "2 and 4"?*

- *Are one or more instruments clearly providing that steady beat?*

- *Does each beat subdivide in half or into three? Can I identify the meter e.g. 4/4 or 6/8?*

- *How does the rhythm sit on top of that beat? Is it simple and tightly bound, mostly placing notes right on the beat or evenly in between beats? Or is there more unusual and unpredictable note timing?*

- *Is the beat straight (steady) or swung (a pattern of long-short, long-short)?*

- *How does the tempo and rhythm compare to what's normal for this style of music?*

- *How does the use of rhythm differ across instruments or musical roles?*

- *How important is rhythm to the musical impact of this piece? How creative and innovative has the song-writer or composer been? Is rhythm a distinctive part of this piece or is it tackled simply in order to showcase other aspects e.g. the melody or lyrics.*

Write in your own questions on Rhythm:

Chapter 5:
Dynamics and Articulation

Dynamics refers to the changing of how loud or how soft musical notes are. In classical music dynamics are used to create highly expressive effects. There's a lot of range, from very, very soft sounds to very, very loud sounds. You can listen carefully for that.

In much popular music, the overall dynamics are pretty set. Sometimes there will be sudden jumps in volume in a song, but usually the jumps that *feel* like dynamics are really a jump in texture (more on this later). Partly due to the technical requirements of radio play, there's actually quite a narrow range of dynamics used in much popular music.

The use of dynamics can change over the course of a piece. Sometimes this change is very gradual and sometimes it's very sudden. Oftentimes, sudden dynamic shifts can indicate also a change in section of a piece, for example starting off with a soft section and then suddenly becoming loud. Other times changes in dynamics are used for effect within a section.

Micro-Dynamics

The large-scale dynamics that are written into a piece of music or they are performed are one thing to listen for - but there's another aspect of dynamics which we can call "micro-dynamics", that you can hear in so much music. Small, quickly changing gradations of dynamics are found typically in melodies to shape a phrase, shape a small musical sentence - even to shape one single note where it would start soft and then get loud and get soft again. This is something that's used to great effect in all forms of music. You hear guitarists using this all the time, especially more melodic lead guitarists.

It's something that singers do quite naturally, as these shifts are embedded in the pronunciations of the words they are singing. And that's where instrumentalists first learned to shape their notes and phrases.

These small gradations of dynamics to use to shape a phrase and shape a melody are something to listen for in your active listening and to appreciate and will help you learn it for yourself and make your melodies very musical.

Articulation

One other more subtle shaping technique - also borrowed from singers since the misty dawns of time - and that can bring a melody to life, is **articulation**. That's how notes begin and how they end.

You may be familiar with "staccato" (detached) and "legato" (connected) styles of playing. But when we listen to our musical heros, we will find an infinite range of expressive articulations, which we can enjoy, and then emulate in our own playing.

One way to tune your ear in to articulation is to imagine the dynamics of a single note. Does it start suddenly and loudly and taper off? Or does it have a soft, smooth start but a sudden ending? These effects are often produced by the articulation techniques of the instrument.

EXAMPLE QUESTIONS: Dynamics and Articulation

Reminder: Almost all questions can be asked for the whole piece of music overall, as well as for a particular instrument, a particular section, etc.

- *How are dynamics being used overall in this piece? Are there sudden or gradual changes? How does this contribute to the musical impact of the piece?*

- *What is the relative volume of each section?*
  (simple labels like "really quiet", "the loudest", etc. are fine, or use precise terminology like "mezzo-forte", "fortissimo", etc. if you like.

- *How do the volume levels of different instruments compare? Does that change from section to section or at particular moments (perhaps when musical roles change)?*

- *What can I hear in terms of microdynamics: how is each phrase shaped using changing volume?*

- *Can I hear any particular articulations being used, such as staccato or legato playing, or any instrument-specific articulation techniques?*

- *How important are dynamics in this piece of music? If every note or every section stayed at a steady volume how much would that detract from the piece's expressiveness?*

Write in your own questions on Dynamics and Articulation:

Part 3:
Leveling Up: Form, Texture, and Audio

Part 3 shows you use your awareness of the musical dimensions to listen for the larger structures in music.

After completing these chapters, you will understand how the musical building blocks come together to create musical form, texture, audio frequencies and effects.

Introduction: The Bigger Picture

When artists paint a picture they mix their paints to create a range of different colors. All they really need are three colors (red, blue, and yellow) with black and white to create any possible color. Those paints are brushed on the canvas in specific forms and structures to represent the picture that the artist wants to paint. And then the whole thing is put into a frame and hung on the wall.

In music, we can look at the elements: the four dimensions that we mentioned in the previous chapter. Those are like the three colored paints with black and white. These paints aren't the artwork in themselves. And the elements are not the music in itself. But they're used to create a range of material for the music to be built from. The musician then arranges these into forms and structures to create the music. The musician's "canvas" is the span of time from the beginning to the end of the piece of music. The frame is the beginning and the ending points of that time.

Horizontal and Vertical

When you're scanning a painting from left to right, you're looking at its horizontal axis. And if you look at it from top to bottom, you're looking at its vertical axis, which creates, in the case of a painting, a two-dimensional picture. Music also has a horizontal axis. That's how music moves forward through time.

At any given moment in that time, there can be a whole bunch of things going on. You could have maybe a guitar, and a keyboard, and a bass playing at a certain moment, playing certain pitches that form a certain chord. That is the vertical axis.

What's going on in the moment and then how music is moving and changing through time are ways for us to look at music when we're actively listening to it. *"What just happened in that moment, and then how did it change as it moved through time?"* What happens in the moment is the vertical axis. How it changes over time is the horizontal axis.

How music changes, for example, as it moves from one section to another section of a song, we can see that as a movement along the horizontal axis, how it changes in time. For example, you may have the chorus for 20 seconds. And then you have a verse for 20 seconds. Then another chorus. These are sections that proceed one after another, that follow each other through a span of time. **We call this structure of sections "*Form*".**

These sections are defined by how the musical elements are arranged within them, and the musical form is defined when these musical elements change from one section to the next.

For example, the verse may be characterized by a low, rhythmic vocal line, vi-IV-I-V chord progression, played on acoustic guitar, sparse bassline and drums played with bundle sticks. Then the chorus arrives and the layers change, bringing in electric guitar, a driving bassline and heavier drums.

And all these different layers of what's happening in the moment comprise the vertical axis, which we can call the "**Texture"** of the music.

Chapter 1:
Musical Texture

Texture can be a revelation when you're actively listening to music. When you ask your ear questions about texture, you start to think about all the things that are stacked up in a piece of music.

People often use descriptive terms such as "dense", "thick", "sparse" or "ambient" to describe texture. But these terms don't help us much in translating what we hear into our own musical expression. While the texture of any musical moment can be as unique and individual as a fingerprint, learning about some broad categories of musical textures can assist you greatly when you want to "go deep" into your active listening - and in your own music creation.

Monophonic Texture

The word "Monophonic" comes from Greek roots meaning "one voice" - as in one voice singing acapella. Or one Native American flute playing in a canyon (since we use the word "voice" here to include the voices of instruments as well as the human voice). You only hear one thing going on at that particular moment. One note, one rhythm, one melody. One pitch on one instrument and one voice.

There's no accompaniment, there's no guitar, there's no background music. There's just one musical line, moving through time.

Traditional Gregorian chant is another example. Now often, with a Gregorian chant, which is an old form of church music, you may have several people singing together. But they're all singing the same pitches in the same rhythm at the same time. There's no other accompaniment, traditionally. And that's still a monophonic texture. Another example of monophonic texture would be a group of traditional instrumental musicians playing just the melody. Nothing else but the melody.

Polyphonic Texture

"Polyphonic texture" means many voices. Most of the music we listen to can be called "polyphonic" because usually there's more than just one voice going on. In a typical band, you may have the bass playing one line. One guitar playing chords in a certain rhythm, with a second guitar playing lead lines. The drum set itself playing a whole bunch of different patterns that are layered on top of each other. And then a lead vocalist over the top of it. We *can* call that a polyphonic texture. But let's narrow it down a bit..

In a more strict sense, polyphonic texture refers to **two or more melodies going on at once**, and both of these melodies are of more or less equal importance. A simple round, like *"Row, Row, Row Your Boat"* is a good example. Multiple people sing the same melody but starting at different times, and it produces an overall piece which is polyphonic.

Polyphonic textures can be found frequently in classical music, especially from the middle ages up to the mid-1700s. For example, a Bach "two-part invention" has two melodies, one played by the right hand, one played by the left hand on piano. They're both relatively of equal importance.

Sometimes you can find three, four, five, or even six melodies that weave together where one didn't necessarily pop out as the main melody. Now this is not nearly as common in our popular music, although you can find examples of pop polyphony as a special effect.

Homophonic Texture

What's much more common is a kind of polyphonic music where there's lots of things going on, but where there's a melody that pops out as being the main melody of the music. When one melody, one voice, stands out as being the lead melody, in an otherwise polyphonic texture, we call it **"homophonic"** music. This is the one that we're most used to hearing.

Almost all popular music and most classical that we listen to has one melody that pops out on top, usually sung by the lead vocal or when there's an instrument like a lead guitar or a lead synth that takes the main melody.

There can be all kinds of other things going on. All kinds of layers of sound, of synths, and drums, and guitars, and basses. All kinds of layers of sound. But if there is one melody that pops out on top as the main lead melody, we can call that a homophonic texture.

Homophony and "Beats"

In common parlance, folks these days often talk about the "song" and the "music". What they mean by the song is the vocal line, and the music is all the layers and all the other sounds that are happening underneath that lead.

Some artists rely entirely on "beats" - premade musical arrangements that lack a melody - and simply compose their own vocal line (sung and/or rapped) "over" the "beat". In fact you may be familiar with beats that you can buy. Or you can look up a beat on YouTube and make up your own melody to it.

These beats themselves consist of multi-layered polyphonic compositions. And understanding this and listening to them at deeper level, you can be composing and creating your own beats as well as the lead lines.

Deep Listening

Musical texture is extremely important and useful for active listening because then you're starting to pay attention to all the layers that are in the music. You're not just hearing one big wash of sound.

Now most of the time, we have our greatest attention on the lead. The lead vocals or the lead instrument, melody instrument - we have most of our attention there. But our active listening can be deepened considerably if we start to listen to the other layers in the texture.

One fun, easy, and extremely useful active listening technique is to choose a layer (or an instrument, since often instruments seem to pick a layer and stick to it) and to follow it with your ears throughout the song. Let's say you choose the bass part and you follow that bass part with your ears. Or you choose the rhythm and guitar part and you follow that.

"Going deep" in your listening is that easy! You will learn so much about music through this simple exercise, and build a much greater understanding of what to do when you're playing - whether your jamming some cover tunes, rehearsing with your string quartet, or composing your next EDM masterpiece.

Chapter 2:

Musical Form

As soon as you put two note one after another, you have a kind of musical form! We can talk about musical form from very small units to very large units and everything in between. Here's some vocabulary that will help you discern musical form in your active listening:

Motif: A small unit of melody, often less than a half-dozen notes. Motifs can be repeated, varied, extended and generally remixed to build very large forms - indeed, Ludwig van Beethoven spun out his entire Fifth Symphony from one simple motif; three short repeated notes and one long note. (By the way, when you listen to the first famous 7 or 8 seconds with your active listening hat on, what is the musical texture?)

Phrase: Sometimes called a "musical sentence". Phases are sections of melody with a discernible beginning and end. The endings of phrases are known as *cadences* (think of them like musical punctuation marks)- they either resolve to the tonic or to some other note. Those that do not resolve to the tonic note are called incomplete cadences, and leave the listener expecting more melody to follow.

Section: Musical sections can widely vary depending on the genre and type of musical piece. They are often marked by a decisive change in any combination of the musical dimensions and textures we've touched on so far.

Sometimes these sections are labeled simply by numbers or letters - Section A, Section B, etc. Other times they have **specific names** according to the genre. So in pop song form we talk about the *verse*, *chorus*, and *bridge*. Rap often has a section called the "*hook*". Classical *sonata form* has the *exposition*, *development*, *recapitulation*, and *coda*.

Larger forms: in classical music you often find larger forms (such as Concertos and Symphonies) that include several "**movements**" - each movement is a self-contained piece of music with a form of its own - think something like chapters in a book. Inspired by classical, some progressive rock bands have followed suit by extending into longer songs and concept albums.

Listening for Musical Form

Form is defined by **repetition** and **change**. This applies to any musical element or texture. For example, in standard pop song form you have three different sections: verse, chorus, and bridge.

To these sections can be added a pre-chorus, intro and outro. When you're listening to most popular music (including pop, country, R&B, a lot of hip hop, rock and more) you'll be able to tell these sections apart by comparing the melody and lyrics:

	Music	**Lyrics**
Verse	Same from verse to verse	Change from verse to verse
Pre-chorus	Same each time, pitch moves higher to build to chorus	Usually the same each time
Chorus	Same each time, higher pitched than verse, usually contrasts rhythmically with Verse	Same each time
Bridge	Contrasts with both other sections	Usually short and repetitive

Furthermore, these sections are organized in a predictable order, typically:

Verse Chorus Verse Chorus Bridge Chorus

Other sections can be added while keeping the same basic form:

(Intro) Verse (Verse) (Pre-chorus) Chorus Verse (Pre-chorus) Chorus Bridge Chorus (Chorus) (Outro)

This song form has been used for literally hundreds of thousands - maybe millions - of songs since the middle of the 20th Century - and it's built from folk music forms that have been around for thousands of years. Our ears have come to expect it, so when there's a variation it's quite noticeable (and it better be for good reason!).

How Musical Elements Define Form in Different Genres

In the case of song form, we looked at just melody and lyrics. But any musical element can be used to define formal sections in music. They then combine to form musical textures that change from one section to another. The changes in melody and lyrics described above are often accentuated by producers, songwriters, and artists by changes in chord progression, instrumentation, and texture.

Different genres are characterized by how they use musical form.

Jazz

In jazz, performances frequently begin with playing the melody of a song, known as the "**head**", followed by each musician improvising new melodies over the same chord progression as was played during the head. Each round of the chord progression is called the "**chorus**". The performance concludes with a repeat of the head.

EDM

In dubstep and dance music you have this section that's called the "**drop**". This drop is where there's a sudden deepening in the bass and a change in the rhythm that contrasts from the music that came before. Here you have a change in pitch, a change in the timbre of the instruments, and a drop section is usually instrumental as well. You're moving from a vocal section to an instrumental section. And these changes create musical form.

Classical

In classical music, key, rhythm, melody, harmony, texture - even tempo - changes clearly define sections in purely instrumental pieces. Listen to "Farandole" by Georges Bizet for how instrumentation, melody, tempo - and especially texture! - clearly divide this piece into easily identifiable musical sections.

The Benefits of Listening for Form

One problem that many beginning **songwriters** have is they start just writing a song from the beginning. They start with a great inspiration, then they get stuck, they can't finish the song. Many of them don't realize that their favorite songs have repeated sections. So if you simply repeat a section of music and then change the lyrics for the verses, keep the same lyrics for the choruses and you lay out these repeated sections in a predictable fashion... suddenly your song has practically written itself because you use a predetermined form.

It doesn't mean you're not being creative. In fact, it *helps* your creativity because **you're freed up to focus on what matters - a great melody and great lyrics** - and you don't have to recreate these forms from scratch. Through active listening you can learn more and more about the nature of each section, and all the varied ways in which your favorite artists solve this musical problem.

Good musical forms are often used again, and again, and again, and still be successful, and still be useful, and still allow for a tremendous depth and breadth of creativity. In classical music, there is a form called "**sonata form"** which endured for centuries and is still used in composition today. When we learn, listen, and understand musical form, it both increases our appreciation for the music and the creative way in which that form is being used and it also gives us tools to build our own musical compositions and also understand the music that we're playing.

Active listening for musical form helps us greatly with **memorization**. If you know that this part is coming up and it's going to be the same chord

progression as the previous section and it's going to repeat or it's going to do this or that, then the musical form helps you in so many ways.

Active listening for form also helps in **playing by ear** because, for example, if you understand that this section is going to come around and it's going to be the same every time you play the chorus, then you don't have to figure out the chords each time they're coming up because you already know them - and your active listening to musical form is going to help you tremendously.

EXAMPLE QUESTIONS: Form and Texture

- *What type of texture is it: monophonic (single voice), polyphonic (multiple independent voices), or homophonic (single "lead" voice supported by other voices)?*

- *What layers can I hear in the music, in terms of the melodic lines and harmony or in terms of the instrumentation?*

- *What is the form of this piece? How many different types of section can I identify and how do they repeat in a sequence? Are there standard labels I could apply to them?*

- *How does this form compare to what's expected in this genre? Is there anything unusual happening in terms of form?*

- *Within a section, what's the structure over time?*
  e.g. how many lines in each verse, is there a pattern of call-and-response phrases, etc.

- *How are repetition and change being used to define the form? What aspects of the music (e.g. pitch, rhythm, instrumentation, lyrics, etc.) are changing and which are repeating within a section and across different sections?*

- *Can I identify any repeating motifs or melodic fragments? Are there musical patterns which multiple instruments/roles are playing at the same time, or one after another?*

- *What other music can I think of which has the same form as this and defines its form using the same kinds of repetition and change? (bonus points for crossing genres!)*

Write in your own questions on Form and Texture:

Chapter 3: Introduction to Audio

Up to this point everything we've discussed has been about music in the abstract. The pure "music" of music.

In reality, we generally experience music through a real-world rendition. Although it's possible to look at a piece of sheet music and imagine in your mind how it would sound, the music we'll be practicing active listening with will be either:

1. A live performance, or
2. A recording of a live or studio performance which we are playing back.

In these cases there is a whole other world of active listening to consider, relating to the real-world characteristics of the *sounds* being produced.

This can loosely be referred to as the "audio" side of music. The equipment, the speakers, the room environment, the electronic processing that might be happening. All the factors that affect the way the sound is produced or perceived, beyond the fundamental musical intentions we've discussed so far.

You could take the same piece of music, played with the same instruments, pitches, rhythms, form, and so on - but play it:

- Live in a huge, empty concert hall
- Live in cramped basement bar full of people
- Live in a professional recording studio
- From a CD on a nice home stereo system
- From a low-quality MP3 on cheap in-ear earphones

Can you imagine how different the music might sound in each case? Now imagine being able to hear, understand and explain in great detail *how* and *why* each of these scenarios sounds different. That's what audio active listening can empower you to do.

The practice of audio active listening is no different than that of the "musical" side: we are listening with a question in mind. These audio questions can roughly be divided into two groups:

1. Questions about audio *frequencies*
2. Questions about audio *effects*

Although the process is the same, these audio questions wake up quite a different part of your brain and ears, so even a little practice in these areas can open up a whole new level of music appreciation for you. For many people these concepts are totally new so don't be put off. You don't need to understand things fully to start listening for them and building up your awareness and appreciation of what's going on in the audio side of the music you hear.

Chapter 4:

Audio Frequencies

We aren't going to go deep into the science of sound here - and fortunately we don't need to!

Here are the two things you need to understand to make sense of audio frequencies:

1. Every sound we hear exists as a **pressure wave** in the air which reaches our ear: the air molecules are becoming more densely packed and less densely packed over time, in a gradual wave. Our ear detects that changing pressure and that's what our brain interprets as sound.

   This changing pressure can happen at different speeds. We call this the ***frequency*** of the wave. It could be changing very quickly, which we call a "high frequency" or very slowly which we call a "low frequency".

   We measure frequency in a unit called **Hertz** (Hz) so a low frequency

might be "20 Hertz" while a high frequency sound could be as high as 20,000 Hertz (a thousand Hertz is one kilohertz so you might also hear that referred to as as "twenty kilohertz"). This is the human hearing range for frequency, from 20 Hertz right up to one thousand times that: 20,000 Hertz.

2. Every sound actually consists of a **combination of multiple frequencies**. It is possible to generate a single-frequency sound (called a "sinusoid" or "sine wave"), but in nature and with musical instruments there will *always* be a range of frequencies present.

   The exact mix of frequencies determines both the perceived pitch of the sound and a large part of the timbre of the instrument.

   Example: The note an orchestra tunes to, called "A440" is the note A in the octave where that A is at 440 Hertz. Every instrument in the orchestra will produce a sound where the most prominent frequency is 440 Hertz and that's the pitch we will perceive the note as. But every instrument will also be producing a number of other frequencies, most notably ***harmonics*** which are multiples of that "fundamental" frequency. The balance of these other frequencies is a big part of what makes each instrument in the orchestra sound different i.e. have a different *timbre*.

So clearly pitch and frequency are related: both describe how high or low a sound is. But we can think of "pitch" as meaning "the single measure of how high or low we perceive a note to be" while "frequency" is all the rich detail which both determines that single perceived pitch and has a great influence on timbre.

So why would we be interested in listening for frequency, if pitch already tells us about the highness or lowness of a note?

Well, there are some highly practical purposes of developing your ear to appreciate frequencies. For example, live sound engineers and studio engineers will learn to recognise the balance of frequencies in great detail which allows them to adjust dials on their mixing desk to improve the overall blend of the sound, a process called **Equalisation** or "EQ". This is a crucial

part of what lets a musical group produce a clear and coherent sound together in a live venue or a recording.

However, for our purposes as active listeners, the major benefit is that it opens up a completely different window for us to listen to the same music.

We learn to hear what's happening in the different frequency ranges of music.

This is a very different question to that of pitch. With pitch we might ask "Which instruments are playing high notes right now?" but thinking in terms of frequency we would ask "Which instruments have a presence in the high frequency range?". And this would produce different answers! For example it might only be the singer who is actually singing high notes at a given moment - but actually you realise that up in that high frequency range you're also hearing the drummer's hi-hat cymbal, some of the echo-y reverb of the guitar player's riff from a moment before - and even the top part of the timbre of the bass even though the notes it's playing are way down low.

Learning to recognise different frequency bands in detail is a long process of ear training. Studio engineers begin by learning to divide sound into 10 different frequency ranges (often called "frequency bands", and then might extend to roughly 30 bands which means that each band is about a third of an octave - just four notes, that's quite precise!

However you certainly don't need to go that far to get the benefit of audio active listening and tuning your ear in to this *way* of listening is actually very fast.

A great starting point is to develop your internal "3-Band EQ": just dividing sound into bass, mid-range, and high frequencies. You've probably seen stereo equipment that provides exactly these three dials! In some cases there are just two dials, "bass" and "treble" but this normally still provides the same three-band control since cranking both the bass and treble right down will leave you with just the "mid" left over.

This is actually the best way to start tuning your ear in: Play around with EQ settings on your music device.

Listen to the same section of the same track with the dials set to extremes. Adjust the dials for "all bass", "all mid", "all treble" - and listen to the effect on what you hear.

Which instruments do you hear in each band? How is their timbre affected?

This is an interesting exercise in itself, but here's what's *really* cool: after playing around like this on a variety of tracks and paying attention to how the sound is affected by tweaking those dials you will begin to hear these separate bands even when listening to the full, normal, sound. That is, you can ask your ears "What is happening in the bass range right now?" and mentally it will be like you just tweaked those dials to isolate the bass. Your ear will zone in on just that frequency range and pay attention to what's going on there.

Naturally this skill is particularly useful if you're involved in live sound, recording or mixing music. But it also gives you a deeper awareness and appreciation of everything that's happening in those processes to produce the nice (or not so nice!) sound you hear at live gigs or on a recording. It's a whole new window on all the music you hear.

Chapter 5:
Audio Effects

The other major area of audio listening is called *effects*. This encapsulates all the *other* things which can be affecting a sound apart from the frequencies.

You will already be familiar with many common audio effects by name or by sound.

One prominent example would be "reverb" - how much a sound echoes in an environment. We all know from our natural real-world experiences that if we were to sing in a tiny empty room it would sound quite different than if we were singing on a stage in a grand concert hall. Or that we can tell just by listening to a recording whether the microphone was right next to the speaker's mouth or across the room from them, even if the overall volume is the same.

We'll use reverb as our example here and then cover a few other common audio effects below to help you start listening for them.

> ***Note:*** *It is important to know that this idea of "effects" is just a helpful abstraction. In literal terms, a sound is defined completely by the mix of frequencies it contains over time. There is nothing "more" to it than that. So any audio "effect" we discuss will, in some way or another, be some kind of modification of that sound's frequencies. But for the sake of simplicity it's useful to think about a sound's "frequencies" as being all about pitch and EQ (as presented in the last section), and group the more complicated frequency behaviours under this idea of "effects"*

This description of reverb should help you see right away that audio effects occur naturally even though the term is most commonly associated with artificial electronic processes that are applied to sound. So an audio effect can be a natural phenomenon, or it can be an artificial process applied to a sound (live or on a recording).

In the case of reverb, for example, there is a staggering range of guitar pedals, software plugins and other electronic devices to artificially add various kinds of reverb to an instrument or overall musical mix. This can be done to simulate a different environment (e.g. so the listener believes the notes were produced in a vast concert hall versus a cramped recording studio) or for artistic effect (e.g. just a small amount of reverb applied so as to "thicken" the sound and help the mix sound nicely blended into a coherent whole).

So what is the benefit of active listening for effects?

Well, the first thing to say is that there is a strong connection between audio effects and timbre. So all the benefits of appreciating timbre already discussed apply here too.

One way to think about it is that "timbre" defines "how an instrument sounds" and then "audio effects" describes "how an instrument's sound is modified from its default natural timbre". So the timbre of an electric guitar is, depending on where you draw the line, a very simple and thin one. If you have heard an electric guitar played without being plugged into an amplifier, or indeed plugged into an amplifier with no kind of effects applied, you will know: it sounds like a simple metal wire being twanged! However, the sound of an electric guitar can become wildly different and complex in all kinds of ways once audio effects are introduced. It can sound big, heavy and angry, it can sound pure, sweet and elegant, it can sound remarkably like a human voice, it can sound electronic and robotic - almost anything is possible through effects!

These days an instrument can even become simply a controller for completely synthesised sounds, where the resulting sound is completely independent of the natural timbre of the instrument. So in a way we're talking about a spectrum, with natural timbre on one end, completely synthetic timbre on the other end, and in between there is a realm of audio effects where the natural timbre is adjusted more and more in artificial ways.

As well as the general "timbre understanding" that audio effects active listening extends, there is a practical angle, in that understanding audio

effects lets you know what's possible. This can be useful for your own performing and recording, but also just makes your mental model of the music you hear more vividly.

For example: When you listen to certain recordings you probably instinctively *feel* the environment the musicians were playing in. An intimate recording of a singer-songwriter can make you feel like you're right there with them, alone in a small room. A live recording of a packed stadium rock show can make you feel like you're right there, surrounded by thousands of other fans, experiencing it in an exciting way.

This mental image of the music you are hearing and the powerful visceral impact it can have on your experience and enjoyment of the music is given greater richness and sophistication as you become more and more aware of the audio effects involved. That's not to say that you would literally be thinking through "Oh, I can hear a long-delay reverb therefore I must be in a stadium, and there is some distortion on the guitar therefore I know it's an electric guitar plugged into an amp, etc."! But once you wake up your ear to all those factors you will instinctively and automatically conjure up more accurate and more powerful mental experiences as you listen to music.

Let's discuss a few other audio effects you might like to explore. Keep in mind that audio effects can be applied to the overall sound, to individual instruments, or both.

Chorus

If we think purely in musical terms, there is no difference between a solo voice singing a melody and a choir of 20 people singing that same melody in unison. It might literally be a single word on the sheet music that indicated which of the two it should be! But of course the two sound completely different to us. Why is that?

The answer is that no two humans can perform the same music *exactly* the same, simultaneously. Even the same human in a recording studio trying to repeat exactly the same thing will end up producing something slightly different.

The obvious differences will be in the rhythm - notes will start and end at *slightly* different times, even if officially they are all played with the "correct" rhythm. And the timbre may be different, especially in the case of human voices where every voice is unique. It's possible that the pitches will differ too, especially with singing, even if they are technically playing or singing "the right notes".

All these minute differences combine to create an effect called "chorus". This happens in the real world when multiple musicians or singers perform together in unison, so you can think of it as "the choir effect" (which is where it gets its name from, in the sense of a choir being called a "chorus" - it's not from the verse/chorus sense of the word!)

In its simplest artificial form a chorus effect will create multiple copies of the same sound, starting at slightly different delays from the original. This creates a slightly artificial-sounding effect so must be used in moderation (or in its extreme for intentional artistic effect!) but adds a really distinctive colouring to the sound. It's hard to put into words but some describe it as turning a single colour into a rainbow.

More sophisticated artificial choruses will vary the delay of each copy over time or adjust the EQ of each to better simulate actually having multiple performances.

Chorus effects can also be created artificially but manually, by recording multiple takes of the same section and laying them on top of each other in the studio. This is done a lot in rap music where a line or just a few key words will be recorded multiple times and laid on top of each other, so as to emphasise that line or word as if multiple versions of the same rapper are saying it together. This has an interesting artistic effect on us as a listener: we perceive it as multiple people speaking/singing but somehow we also understand that it is still just one person singing/rapping so it doesn't change our interpretation of it being one person speaking/singing to us.

Distortion

Along with reverb, distortion is probably the most commonly used and most familiar audio effect in the modern age. The evolution of the electric guitar's role in music would be very different without its close companion, distortion!

As you might guess from the name, distortion originates with an *unwanted* effect: when we crank the volume too high on audio equipment we overload the speakers and the sound gets distorted from what it's meant to be. It begins to sound "noisy" or "crunchy" and when distortion happens to the whole of a musical track it sounds pretty terrible.

Apart from this overall "crunchiness" another way distortion manifests by accident is with "feedback". When a microphone or instrument pickup is placed close to its own speaker, the sound goes in a loop from mic to speaker, round and round, gathering volume each time, resulting in a loud high-pitched whine. You've no doubt heard this once or twice if you've ever been to a live rock gig or heard a sound-check before a performance!

However, used in certain ways and for only particular instruments in the mix, distortion becomes a powerful and flexible audio effect. Even feedback can be done intentionally, as in the case of rock guitarists intentionally approaching their amp on stage to produce feedback in a controlled way.

Applied intentionally, distortion can produce a surprising range of timbres. Sticking with the example of electric guitar (though distortion can be applied to any instrument), distortion can be created via the amplifier and/or dedicated effects pedals and can produce a really beautiful sweet sound, such as Carlos Santana's signature guitar tone on "Smooth" or "Maria Maria", or a noisier tone, such as the classic opening riffs to Nirvana's "Smells Like Teen Spirit" or Deep Purple's "Smoke on the Water", or a harsh, heavy, crunchy tone such as Black Sabbath's "Iron Man".

Auto-Tune

A prominent audio effect in recent years has been "auto-tune". This was originally created as a tool to help studio engineers neaten up recorded tracks in terms of pitch, especially singers. By nudging pitches closer to the

"official" pitch of each note, slightly sloppy performances could be transformed into clean, accurate renditions.

However, like many audio effects, it emerged that taking the effect to its extreme could have artistic potential, and so auto-tune became an audio effect used to dramatically change the perceived timbre of human voices, even to the extent of being used for comedic effect!

This is a good example of a general principle: when used in a tasteful way, audio effects are normally intended to be unnoticeable to the listener. They are used to enhance and adjust the sound, or to create new timbres which our ears happily accept as an instrument sound. Auto-tune is a rare case where the average music listener is consciously aware that a particular audio effect has been used. However, you as an active listener will soon have this awareness of *all* audio effects being applied - not just those being taken to an extreme!

EXAMPLE QUESTIONS: Audio

Reminder: Almost all questions can be asked for the whole piece of music overall, as well as for a particular instrument, a particular section, etc.

- *What can I hear is present in the low, mid, and high frequency bands?*
- *How does the frequency present of each instrument combine to make a balanced overall sound? Are there any instruments which would naturally occupy the same range and might have been adjusted with EQ to fit together better?*
- *What's the overall frequency presence of this track, e.g. does it sound broad and bassy or light and airy?*
- *Can I discover anything new about how the music is put together by listening in to just one particular frequency band?*
- *What audio effects can I hear? What does the overall environment sound like (e.g. it sounds like a pristine studio recording vs. it sounds like a live concert hall performance)?*
- *Is there a noticeable reverb? If so, does it sound like a small or large space?*
- *Are there noticeable effects on any particular instruments?*
  E.g. distortion on a guitar
- *Have any instruments' timbres been transformed into something noticeably unnatural?*
- *Why have these effects been used: is it to a subtle degree to create a certain musical atmosphere or is it to a greater extent to produce particular noticeably-different sounds?*
- *What influence does the audio frequency balance and the use of audio effects (if any) have on the artistic impact of this piece? How different would it be if those things were changed dramatically?*

Write in your own questions on Audio Frequencies and Effects:

Conclusion: Active Listening – The Broad and The Deep

We've covered a lot of ground! As you read through this handbook some concepts were probably familiar to you and others new.

Learning active listening is different for everybody.

Some areas will come easily to you, others will require more work. Some aspects of music you'll find fascinate and captivate you, while others just don't seem all that interesting.

Here is a parting piece of advice to help you maximise the impact of active listening on your musical life:

Go broad and go deep.

This advice can be applied throughout your active listening journey...

Go broad in the **questions** you ask, covering each one of the areas we dedicated a chapter to in this book - and go deep, asking the most specific and demanding questions you can come up with.

Go broad in the **music** you apply active listening to, exploring new genres and styles of music, not just the ones which are familiar to you already - and go deep, exploring not just the major hits and artists in a genre but some of the lesser-discovered music in that genre too.

Doing this will circumvent your natural tendency to focus on what's familiar and what's easy.

Instead, you'll keep expanding your musical awareness and understanding and (more importantly) you'll keep expanding your enjoyment of music.

Your enjoyment will be *broader* as you discover new genres and new aspects of music that you turn out to love. And your enjoyment will be *deeper* as you discover hidden riches and depths even in music you thought you knew well.

Remember that active listening is a skill to be learned over time. There is always a new question to ask, a new aspect to uncover, a new level of understanding and awareness to be enjoyed.

Here's to a lifelong journey of fascinating musical discovery!