

# Art Not Science

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## Mic Frame Placement

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By Justin Marra

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I work extensively with audiobook narrators and VO artists who self record, and in addition to, “how do I improve the sound of my room?” the question I get MOST often is, “how far away should I be from my microphone?”

There’s no right or wrong answer to this question. Even when working with experienced narrators inevitably there comes a point near the beginning of our session when I’ll see them raise a fist, extend their thumb and pinky, and “measure” their distance to the mic...”scientific measurement” aside, the questions we should all be focused on is rather, “what tone do I want to capture, and where should I be in proximity to the mic?”

Most, if not all of us in the Audiobook/VO community are recording with cardioid microphones otherwise known as “The Studio Condenser Mics”, and all mics in this family are subject to the “proximity effect.” That’s our industry shorthand to describe a unidirectional microphone so



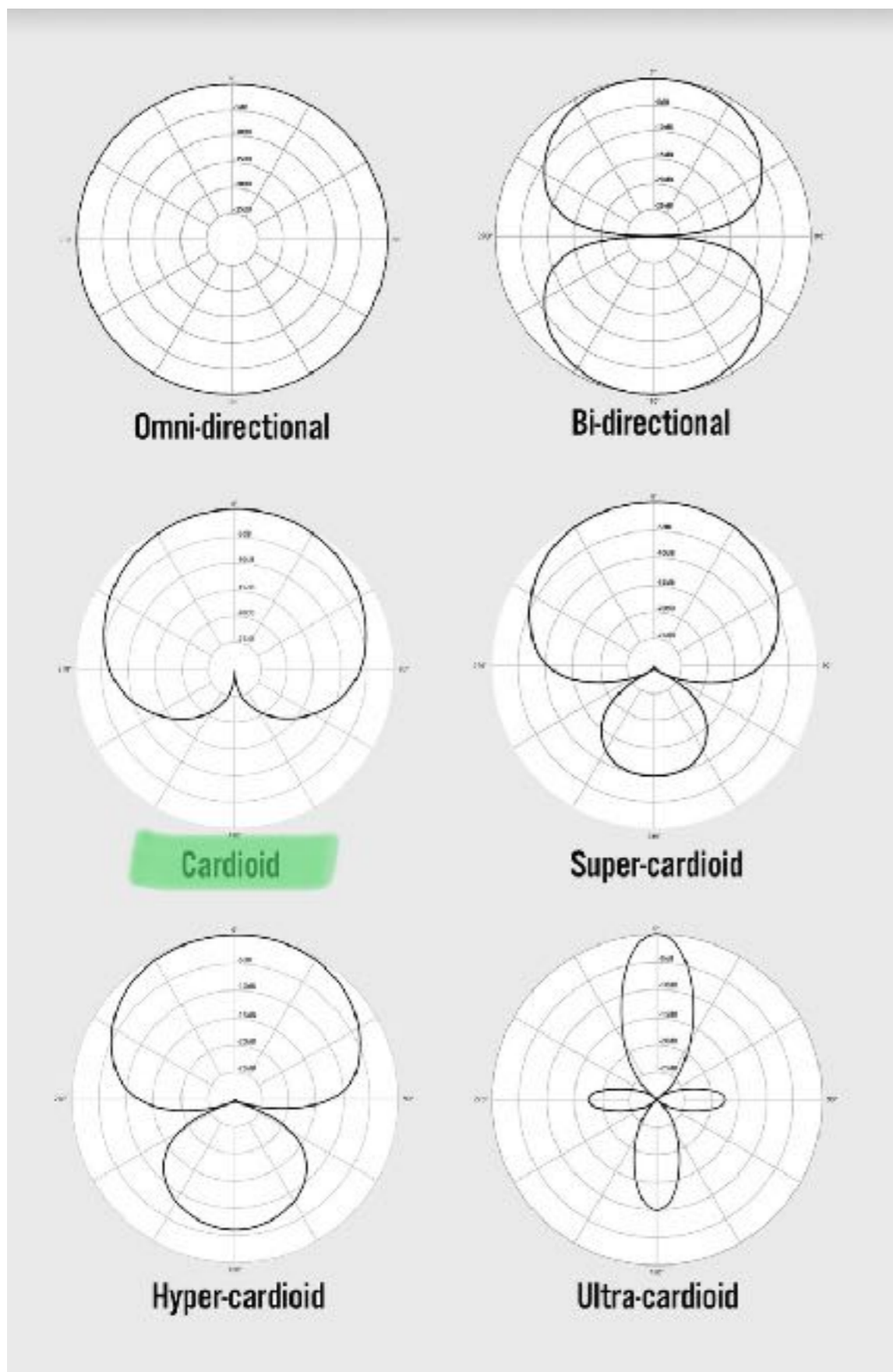
## Art Not Science: Mic Frame Placement

named because the sensitivity pattern is "heart-shaped", i.e. a cardioid. The cardioid family of microphones are good at rejecting sounds from other directions so it makes them well suited to the work. BUT, due to that sensitivity pattern they can really monkey with the tone of our recorded voice because they're so easily affected by our distance, height, and axis in relation to them. So if you're not happy with the way your recorded voice sounds, before you spend money on hardware, software, and engineering costs, read on and see if you can improve your sound with a few simply adjustments.

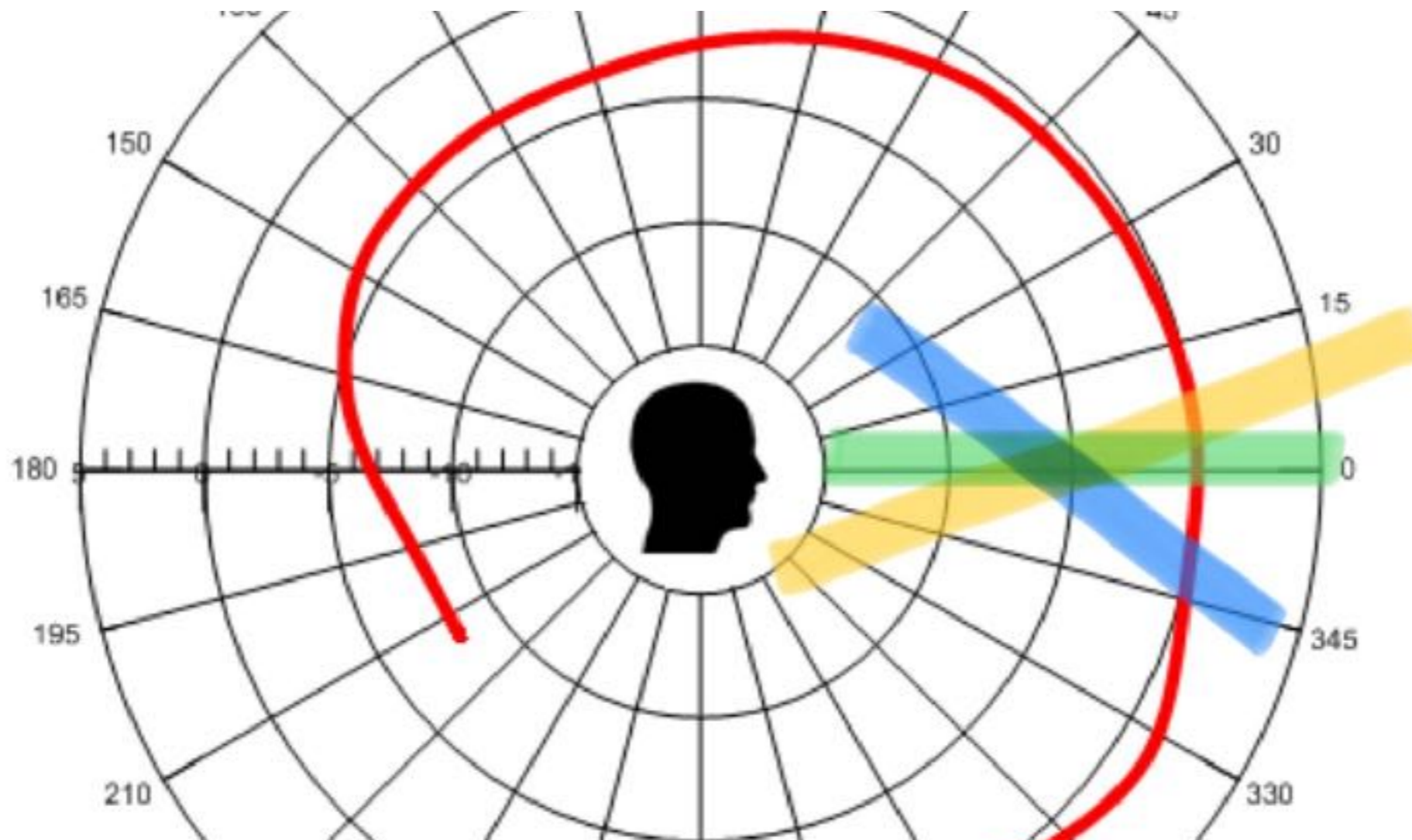
Distance: Closing the space and shrinking the room.

The closer you get to a cardioid mic the more it exaggerates the bass... note this is not natural bass, it is a by product of the proximity effect. Sometimes it sounds a bit unnatural; this is too close. Conversely you can be too far away producing a voice that is competing with background noise.

If you're not in a professional studio or tuned space --your home, a classroom or a bedroom, etc-- your voice bounces around that space and collects reflections before coming into contact with the mic capsule. Your recorded voice may sound muddy, quiet or like its competing with other sounds. This is called the signal to voice ratio. You may be tempted to raise your volume, but you're also raising the volume of the sounds you don't want too. Then you'll need an engineer to scrub your audio clean with restoration software. You may solve the problem by simply getting closer to your mic. Experiment with your mic, your space, and the proximity.







Height: Too tall, too short, just right!

Most of the sound we associate with our voice comes not from our mouth, but from the way our voice bounces around a space before coming into contact with a receiver such as our ears or a mic. In fact your voice has as much to do with your chest cavity and breath control. The more that you can open your chest when speaking, the better your recorded voice will be. Is your recorded vocal tone nasally or do you sound winded? One strategy is to avoid keeping your arms by your side, and allowing your lungs to fully inflate. Working with a vocal coach can help you further develop the proper

technique, but another solution is mic placement. If your mic is placed too low you may notice that your voice becomes deeper, possibly muddy or loses some of the top end or 'treble' you may hear when speaking. Place you mic too high and you'll notice more of that pesky room tone or echo. The key here is to experiment and find the sweet spot that's right for you. Ever see videos of people singing into microphones upside down on the shockmount, it's not just too look cool. This is actually a discrete trick engineers use to adjust the mic height to eye level so that the air being expelled from your lungs misses the diaphragm of the mic capsule...and it looks really cool too!

Axis: Bold as love...I mean side to side mic placement.

Placing your mic slightly off axis will allow you to avoid plosives and sibilant sounds on your recorded voice tracks. If you place your mic straight on you'll notice more plosives on 'b' and 'p' sounds. Similarly you may find your voice is very 'ess-y'. If you've ever listened to music on headphones too loud and felt the pressure on your eardrums you know what I'm talking about. The capsule of a microphone works in a similar way! By turning your head to the left or right OR by moving your mic placement slightly to one side or the other of you --so that the air you're displacing is no longer directly impacting the mic capsule-- you'll notice that you can correct both of these phenomena without turning to software. By placing your mic slightly off axis you can also further close the proximity between you and the microphone. This is also a great strategy when using an e-reader to record narration so that it doesn't interfere.

Remember distance, height, and axis all factor into the tonal quality of a recorded voice. So now that you've reached the end of your assignment it's time to go get your mic out and experiment with it, your space, and your voice until you find the right setup that's right for you. If you've tweaked your setup

Are you a visual/auditory learner? Here's a link to two videos that talk about many of these techniques:

<https://bit.ly/2matsbh> or <https://bit.ly/2Peog3V>

Justin Marra is a singer/songwriter, post production Engineer, and former educator. He is also the studio manager at The TreeCave --a full service recording studio in Rumford, RI.