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Home is Where the Tone is: The Emergence of Professional Home Recording Studios

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Arts in Music

By

Alex Breckenridge

Dr. Ruthie Meadows/Thesis Advisor

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Alex Breckenridge

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Ruthie Meadows, Ph.D.
Advisor

Julianne Lindberg, Ph.D.
Committee Member

Louis Niebur, Ph.D.
Committee Member

Kari Barber, M.F.A.
Graduate School Representative

Markus Kemmelmeier, Ph.D., Dean
Graduate School

May, 2023

Abstract

In this thesis, I explore the recent emergence and acceptance of professional home recording studios in the music industry landscape. Additionally, I investigate why these unique spaces are a viable option for creating professional and top-quality commercial music and why some artists and engineers prefer to work in them over or in tandem with commercial alternatives. I propose an answer to “how” and “why” these spaces have not only come into existence, but also why more engineers and artists are choosing to work in them. In regards to “how”, I explore the historical lineage of recording technology which has allowed for these spaces to be created. And in regards to “why”, I highlight attributes of the home environment that I have found in my career to be paramount in creating an optimal environment to create music in. I will be drawing from my own experiences during my career as both a commercially and home-based audio engineer by presenting autoethnographic vignettes from recording sessions performed in my own professional home recording studio. Additionally, I use themes from three adapted social theories to unpack these vignettes. In so doing, I highlight how particular attributes of the home environment positively impacts the music production process, and ultimately influencing why artists choose to work in these spaces as viable commercial options.

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Introduction: A Reason to Stay Home

A guttural *brrrrggg* followed by a labored *psssshhhhhhhh* came from the coffee maker as I resumed preparing for my first client of the day. In preparation, I began mentally running hypothetical situations, speculating microphone choices/placements, and recounting sounds I'd encountered and how I got them in my career thus far working as an audio engineer. Rather than working at one of the larger commercially oriented recording studios I engineer at Imirage Sound Lab (a traditional brick-and-mortar business in a commercially zoned district of Sparks, Nevada), or Hook City (the private studio of David Coverdale and Whitesnake), my client and I would instead be working in my professional home studio. This space being a one-bedroom apartment about a mile away from the University of Nevada, Reno. The apartment walls act more as a disguise for a space dedicated to the creation of music of the utmost quality than it is to any traditional sense of a domicile. In place of furniture such as tables, there are amplifiers, road cases, and a baby grand piano. In place of normal décor, functional instruments of all type are hung and strewn densely throughout. At the heart of the collection, where the microphone, instrument, speaker, and power cables sprout like thatches of vine, is the recording rig itself. Helmed by a 2020 Mac Pro (the affectionately named cheese grater Mk.2), thumping a 14 core Intel Xeon processor and a 160 gigs of RAM, my home studio's brain is the same one used at my work as well as in many top commercial recording studios around the world. Some might say this is vastly overpowered for a home rig, and if one were only working with a solo folk act or a

solo rapper that would most likely be true. However, considering the sizes of some projects I do post-production work on in this space (some using full orchestra amounts of instrumentation), I would rather have the processing horse power just in case. This rig and its horsepower, while unique to my space, exemplifies the potential for these home recording spaces across the United States and internationally, where these home based operations now compete with traditional commercial studios.

In this thesis, I explore the recent emergence and acceptance of professional home recording studios in the music industry landscape. Additionally, I investigate why these unique spaces are a viable option for creating professional and top-quality commercial music and why some artists and engineers prefer to work in them over or in tandem with commercial alternatives. I propose an answer to “how” and “why” these spaces have not only come into existence, but also why more engineers and artists are choosing to work in them. In regards to “how”, I explore the historical lineage of recording technology which has allowed for these spaces to be created. And in regards to “why”, I highlight attributes of the home environment that I have found in my career to be paramount in creating an optimal environment to create music in. I will be drawing from my own experiences during my career as both a commercially and home-based audio engineer by presenting autoethnographic vignettes from recording sessions performed in my own professional home recording studio. Additionally, I use themes from three adapted social theories to unpack these vignettes. In so doing, I highlight how particular attributes of the home

environment positively impacts the music production process, and ultimately influencing why artists choose to work in these spaces as viable commercial options. The first attribute I will highlight in Chapter 2 is spatial intimacy. I define this term as the lax and informal atmosphere a home environment possesses and its benefits as a platform for music creation. Specifically, I examine how the home studio environment holds the potential to nourish and encourage relational growth between artist and engineer. The second attribute of the home environment that I will be highlighting in Chapter 3 is spatial control. I define this term as the engineer's control of their home and subsequent ability to manipulate the atmosphere of the environment, which is also amplified by their familiarity with the space via usually living within it. By presenting this research, I hope to provide a better understanding of not only the historical lineage of recording studios which has allowed for this relatively recent shift in the industry from a commercially dominated landscape to a domestically-oriented one, but also the function, appeal, and viability of professional home recording studios.

I feel it also important to acknowledge at this point that the music recording industry has been a male dominated field from its inception. Further, because I am writing this work from the perspective of privilege as a straight white male, my perception of the home recording environment could be quite different from someone perceiving it from within identities and from different backgrounds that I have not, nor can experience from within. It is for this reason that propose this work as first, a model for relationally-focused audio engineering

in a home environment; and second, an autoethnographic analysis that speaks to broader trends in the industry and in music recording.

My professional home studio.

Emergent Strategy

The first and primary theory I have adapted for this work is adrienne maree brown's notion of emergent strategy (*Emergent Strategy, 2017*).[1] In this work, brown argues that social interactions are of the utmost importance in collaborative work. Particularly brown refers to the compounding of small interpersonal moments upon each other to strengthen relationships and their

[1] adrienne m. brown *Emergent Strategy: Shaping Change, Changing Worlds*. (Edinburgh: AK Press, 2017), 1-5.

ability to build a social network to grow and work within. The themes from this theory that I employ in this work are the importance of relationship growth through collaboration. More specifically, brown presents a focus on what she refers to as natural collaboration (rather than forced), in that it allows enough space for individuality, but also the support of the network to grow and create progression/development.[2] While brown herself primarily uses this theory in the realm of activism, I have found it to be an effective tool in analyzing the benefits of working in a home environment for creative – and yet commercial – projects, and for aspects such as the informal family-like platonic intimacy a home provides. For example, because of these attributes societally ascribed to this environment, I argue that professional home recording studios take advantage of an environment that acts as catalyzer in which relationships with clients/artists can be more easily grown than in a public setting.[3] Ultimately I believe that looking at autoethnographic accounts of recording sessions performed in a home reveals why these domestically based studios are seeing an increase in popularity and viability as robust alternatives to traditional commercial studios in the current music industry landscape.

What primarily bonded my research so deeply to brown's work is my own career experiences as an audio engineer working from home (in comparison with my work in commercial studios). In my home studio, I witnessed how the

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[2] Ibid, 6.

[3] Although most recording studios operate on an appointment only, closed door policy which carries a level of privacy, the space is still a public business with a different societal coding than a private home.

relationships that I made with my clients in the home environment impacted both the depth of those relationships and expanded my professional network. Additionally, I have consistently observed that spending time in the little moments before, between, and after pressing record adds up over repeated interactions within this environment to deepen engineer/artist relationships, which directly dictates how a project turns out. I believe based on these observations that this dynamic is an always present element functioning whether its presence is openly acknowledged as such or not. Similar to the concept of The Force from *Star Wars*, I believe brown's concept of "emergent strategy" flows through every interaction, and once a base level of perception to it is achieved, it can be harnessed to push forward the momentum of a project. Because of this, as my autoethnographic examples will show, leading to a rippling effect from micro to macro level which has the potential to eclipse the scale of the actual initial project goals.

Taking this a step further, I have observed in my professional experience working in both professional home and commercial studio that domestic qualities such as privacy (as opposed to public performance), which I will discuss in more depth later in this work, plays a large part in establishing from the first step a lax familial atmosphere that acts as an expeditor of sorts to strengthening relationships. I argue that this influences the preference that artists and

engineers often hold for working in professional home studios rather than (or at least in tandem with) commercially based alternatives.[4]

Flow

The second theory I have adapted for this work is Mihaly Csikszentmihalyi's theory of "flow". In *Flow: The Psychology of Optimal Experience*, Csikszentmihalyi proposes that a state of flow can be achieved through internal and spatial mastery, or the ability to have total control of how to both interpret a situation and manipulate the space to an individual's benefit (2009).[5] Specifically for this work I ascribe this concept of spatial control as an attribute of the home environment and a potential reason for why artists and engineers prefer working in home recording studios, even when the price of both is roughly similar.[6] The way in which I use flow to highlight this attribute of the home environment is, first a focus on the actual control the home engineer has to manipulate the atmosphere of their own space, be it a whole home, or even just a bedroom. And second, I focus on the benefits of the compounding of experiences of the engineer often living in the space and thus knowing it like the back of their hand.

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[4] This argument for a recent emergence of these spaces is further supported by articles such as Brad Pack's work titled, "5 Producers Who Made Hits in their Bedroom", showing prominent use of home studios within the industry.

Brad, Pack. "5 Producers Who Made Hits in their Bedrooms" *Studio Stories*, Sonar Works, (2018), https://www.sonarworks.com/blog/studio-stories/5-producers-who-made-their-hits-in-their-bedrooms.

[5] Mihaly, Csikszentmihalyi, *Flow: The Psychology of Optimal Experience* (New York: Harper and Row, 2009), 1-3.

[6] $50/hr. at both Imirage Sound Lab and my home studio (Hook City being only for Whitesnake/David Coverdale and not open to clientele)

Through this, they are able to quickly react to outside deterrents and adapt to keep a functioning and productive work flow.[7] What I have seen in my research is that attributes of a domestic home environment which are illuminated by these theoretical themes act as a positive modifier to the music production process. In this case, having total spatial control helps the engineer via the ability to manipulate the atmosphere of the environment to an artist's preference. This allows the engineer to more easily achieve a state of flow and keep the workflow of the recording session going, including through mishaps such as gear failure, acoustic anomalies in a room, or even how to work around noise curfews.

The level of symbiosis between engineer and recording rig that is attained from literally living in the space one works in is what inspired me to use Csikszentmihalyi's notion of "flow". In Chapter 2, I employ this theory to highlight the benefits of the aforementioned spatial control by the engineer to not only overcome issues both technical and relational, but craft a temporary atmosphere specifically tailored to both the artist and engineer. For example, technical adversity is present in both commercial and home studios. This adversity can be issues such as a microphone cable shorting out or a signal not being passed readily occur. However, since home studios are first a domicile and then a studio, there are inherently more workarounds or compromises that must be made. Although this is the burden of most home studios, I believe the tradeoff of spatial control and the familiarity of living in the studio space can make up for other sorts

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[7] Ibid, 1-3.

In some homes, those deterrents might be children, neighbors, pets, or gear failure.

of compromises and allows the engineer to work on a very internalized muscle memory level.[8] Because of this, when complications do arise from something such as a loud neighbor or noisy refrigerator kicking on, the engineer and their comfort or fluidity navigating the space can easily enter a state of flow, reacting and either managing around the snafu or leaning into it to create a unique moment. Additionally, entering these states of "flow" can deepen the sense of trust, and stronger relational bonds can be made in the service of artistic – and commercial – ends.

Hijinx

The third and final theory I highlight in this work is a concept from the extreme sports world called "hijinx".[9] "Hijinx" has been particularly championed by professional skateboard videographer ("filmer" in skater terms) Josh Beagle, who has produced works for skateboard companies such as Baker, Shakejunt, and Deathwish, and who I draw from here. For Beagle, "hijinx" is an approach (bordering on philosophy) to filming, cataloging, and editing which Beagle has developed that revolves around not just focusing on the main job (i.e. filming the skateboard trick), but also always having one's eyes on the peripheries of the frame for unexpected happenings, even very small ones, that could prove just as – if not more – memorable than the actual trick in regards to the scope of the

[8] Commercial studios often have advantages in regards to acoustic treatment beyond just attachable prefabricated pieces, often having the actual walls of the studio be constructed to have a complimentary acoustic response.

[9] Sometimes spelled hijinx or hijinks

whole film.[10] Unlike the other theories I have adapted, this one does not find origin in academia; however, I believe that given the field of media production is one that exists and operates outside of the academic world (as well as within), a professional industry approach outside of academia is indispensable. In addition, my own profound love for skateboarding is what drew me to the similarities between skateboard filmers and audio engineers. Adapting this theory in the context of the work of the home engineer, I use its themes to highlight both the informality of the home environment in Chapter 2, and also the benefits of spatial control in Chapter 3. In regards to highlighting the informality of a home environment in my autoethnographic examples I focus on the relational bonding that is experienced by involved parties by embracing the unexpected or "hijinx". Building upon Csikszentmihalyi's notion of "flow", "hijinx" also speaks to the ability of the engineer to use this heightened control of the environment to manipulate elements outside of the point of focus. It is in the peripheries of the space where unexpected elements can be brought in to imprint a unique vibe to the project as a whole. This can be seen, for examples, in this linked video clip from Beagle's 2014 film for Shake Junt, *Skate Tank*.[11] Looking at the degree of spatial manipulation that Beagle performs to create the overall vibe of the project, I believe that similarly in the context of the home recording studio, sometimes very important moments happen during accidents mid-take, or when the

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[10] Ride Channel, *Beagle Smokes a Money Blunt, Captures Hijinx, and More on Free Lunch* (2012), https://www.youtube.com/watch?v=jJ5naH9soIM

[11] Shakejunt, *Skate Tank* (2014), https://www.youtube.com/watch?v=AayUUiCGPsc

microphones aren't hot and everyone is just relaxing. This concept is also applied in the work of Maud Hicker and Peter Webster in *Creative Thinking in Music* (2001).[12] In this work, the authors describe qualities of creative individuals as "risk taking, a sense of humor, attraction to ambiguity, open-mindedness, a capacity for fantasy, and perceptiveness".[13] Ultimately, instances of "hijinx" through spatial control lead to much deeper relationships, as I argue. I will explore these dynamics in chapters two and three, using ethnographic analysis of recording sessions with artists Adriana and Aren.[14]

Having grown up as an avid skateboarder and being a big fan of skate videos that Beagle worked on (several of which I will highlight later in this work), his theory and approach to "hijinx" is one that has played a major role in the way in which I interpret the world. Because of this, I am constantly on the lookout and keeping an eye on the peripheries of the point of focus for unique elements/moments that I can draw in and mobilize to enhance the point of focus. In response, I see a similar connection between audio engineering and skateboard filming. The excitement of capturing a monster player getting a killer take or a skater blasting a floaty flip trick down a stair set is a special moment. For example, every once in a while it happens on the first try; however, the

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[12] Maud Hicker and Peter Webster. "Creative Thinking in Music" *Music Educators Journal* 88, no. 1, (2001), 19-23.

[13] Ibid, 19.

[14] Aren Long is a classically trained pianist who produces instrumentally lush and dense orchestral pop music, as well as avant-garde indie pop.

Adriana is a classically trained singer who writes singer-songwriter pop music and Jazz.

majority of the time there is the first swing at a take to just test the water, similar the first jump down that stair set. Once the musician or skater has jumped down the obstacle the first time and gotten their bearings, it could be any take that is the one. The level of excitement rises as the musician or skater gets closer and closer. Often there will be one take that is so close to perfect, but not quite. For instance, there might be one slightly flat note, or a small hand drag on the ground as the trick is landed. However, it is the moment of that perfect take or landing that a bond between artist/skater and engineer/filmer deepens and creates momentum to record more music together or film more tricks together. As the autoethnographic examples will show later in Chapters 2 and 3, I believe that hijinx is a valid lens of analysis for better understanding how attributes of the home environment act as signifiers of both the engineer's spatial control and the space's inherent informality, which holds the potential to add a uniqueness or "vibe" to the project as a whole. Through being flexible and having a creative outlook, "hijinx" draws in from the peripheries of focus and allows the wielder of it to meld elements from the environmental peripheries to the point of focus. Additionally, through the collective experience of "hijinx", all involved parties are able to deepen emotional bonds.

As one might have picked up from the background on the primary theories I will be using, there is a substantial amount of inherent overlap to each and any one of them could be used to unpack the autoethnographic examples in this work. For instance, entering a "flow" state allows the engineer to work fluidly

through potential roadblocks in the home studio, including leaning into the unexpected moments happening outside of the point of focus (similar to Beagle's use of "hijinx"). Both theories then feed into brown's notion of "emergent strategy" via the focus on growth and momentum over time, specifically the deepening of relationships between engineer and artist as more experiences are collectively shared. Because of this overlap I would like to again put forward my argument that the home environment offers special elements that allow these dynamics to fluidly connect and compound with one another. I have chosen to use the structure of autoethnographic vignettes in Chapters 2 and 3 to highlight attributes of the home environment which I believe to be a potential answer for why engineers and artists choose to work in these spaces (particularly given their often commiserate costs with traditional commercial studios). Additionally, I substantiate these claims by incorporating the works of other scholars that have either expanded these ideas as a foundation for their own work or incorporated core elements of them into their creative practices.[15]

In chapter one, I first provide historical context for the transition from analog to digital in the recording industry since the turn of the 20th century, providing firsthand industry input on these spaces through qualitative interviews with engineers and artists. I also investigate the significance of the home as a

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[15] A similar call for research on the relationship between development in recording technology and its potential to change the industry landscape can be seen in Bruno Nettl, Philip V Bohlman, and Kay K Shelemay's work *Recording Technology, the Record Industry, and Ethnomusicological Scholarship*.

Bruno Nettl, et al., *Recording Technology, the Record Industry, and Ethnomusicological Scholarship* (Milton Keynes: Lightning Source UK Ltd., 2010), 277–335.

coded symbol in society and the impact of the "home" on the possibilities of audio recording. Chapters 2 and 3 present two sets of autoethnographic vignettes from my own recording sessions with two different clients (Adriana and Aren). Additionally, I corroborate my claims with primary source material that I believe also highlight the importance of how the home environment influences the experience and product, specifically spatial control (Csikszentmihalyi's "flow"), spatial intimacy (brown's "emergent strategy"), and both of these attributes via Beagle's notion of "hijinx". As I use a particular theme from one of the respective theories to highlight the environment's benefit to engineer and artist I hope to provide a clearer understanding of why these home based music recording operations continue to grow in popularity with both engineers and artists.[16]

Chapter 1: Technological Developments and the Emergence of Professional Home Recording Studios

When one mentally pictures a recording studio, one might see a large console with rows upon rows of faders, monstrously sized speakers, racks on racks of outboard gear with glowing lights and knobs galore, and the classic window separation between the helm of the control room and tracking rooms. This is still the case in many commercial recording studios such as in Imirage

[16] A further example of the continued growth of popularity of these spaces within the music recording industry can be see highlighted in Rachel Davies' article "Step Inside the Music Rooms of 6 Famous Musicians".

Rachel, Davies. "Step Inside the Music Rooms of 6 Famous Musicians" *Architectural Digest* (2022). https://www.architecturaldigest.com/story/step-inside-the-music-rooms-of-6-famous-musicians.

Sound Lab where I work. In this space there are two iso-booths[17] with sliding glass doors, a large tracking room, and the control room with racks of outboard gear, an Ampex 2" tape machine, and a large format Euphonix CS3000 recording console. This technology – while still sounding as amazing as it looks – I argue is becoming an expensive luxury rather than a technical necessity for achieving industry-standard quality through radical, recent industry shifts in digital technologies in the past 30 years. This chapter first looks at the technological developments which have allowed for the lowering of both price and size of professional quality recording equipment and the space required to perform many audio tasks at a high production quality. Additionally, I present direct firsthand industry sources to weigh in on the viability of home recording studios, weighing the pros and cons of both space from a technical perspective. And finally, this chapter will investigate the home environment itself to establish the attributes which I will be highlighting with my autoethnographic examples in Chapters 2 and 3. I believe these attributes to be a potential answer for why there has been a recent emergence of these spaces and why they are preferred by many engineers and artists alike. Ultimately this section of the work serves not only to catch the reader up to the current state of home recording studios, but also to show the economic leveling these technological advancements have had to the playing field in regards to access to quality yet affordable gear.

[17] An iso-booth is a small recording space which is acoustically isolated from the main large tracking room; ideally with a direct line of sight to large tracking room and any other iso-booths.

The historical lineage of recording technology is something that gives perspective on where the current day stands in terms of portable and high quality digital recording setups, most notably in regards to quality, cost, and size. While most young engineers of the modern era were born into a digital landscape, many of the old guard still engineering today (such as my mentor Tom Gordon)[18] experienced the analog industry in its heyday, or were at least engineering at the tail end of its era and saw the transition firsthand. However, the beginnings of audio recording started over 100 years ago at the turn of the 20th century. For this section I primarily use record label titan EMI's published Archive Trust page *The History of Recording*, and Kyran de Keijzer's article *The Evolution of Recording* (2007) for hard data on the historical lineage, and both the works of Pekka Gronow, Saunio Ilpo, and Christopher Mosely's *An International History of the Recording Industry* (1999) and Greg Milners work *Perfecting Sound Forever* (2007) for a more nuanced narrative on the intimate details of this history.[19]

The first medium to be imprinted with audio data was developed by Leon Scott de Martinville and patented in 1857. This early design – while not capable

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[18] Tom Gordon is the chief engineer at both Imirage Sound Lab and Hook City; he is also an educator of Recording Arts at the University of Nevada, Reno. It is here where Tom and I met when I took his recording classes.

[19] EMI Archive Trust, *History of Recording*.

Kyran D. Keijzer, *The Evolution of Recording* (NRG Recording Studios, 2007).

Pekka Gronow, et al., *An International History of the Recording Industry*. (London, UK: Cassell. 1999), 1-5.

Greg Milner, *Perfecting Sound Forever: An Aural History of Recorded Music*. (New York: Faber and Faber, 2009), 1-2.

of actually playing back the audio data – traced the shape of a sound wave on a smoke-blackened piece of paper or glass, which Martinville dubbed the phonautograph.[20] The most prominent of these early recording methods was the etched metal cylinder that history remembers being developed by Thomas Edison via his phonograph which was patented 1877.[21] Although this method was the start of a landslide of developments over the next century, the quality was atrocious to say the least in comparison to modern standards. Not to mention, it was also highly impractical from a commercial standpoint due to how fast the recordings degraded from playback;[22] however, considering that up until this point no human had ever heard a sound reproduced, this was a momentous occasion for not just the history of recording, but also humanity as a whole. From this early first design, several other methods were developed by other engineers to take the torch even further in regards to higher fidelity reproduction of sound. Specifically, the use of already existing electro acoustic recording techniques, but imprinted on shellac discs, which was developed by Emil Berliner between 1887-1893.[23] Similar to Edison's design in the use of sound pressure being the mode

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[20] According to the EMI Archive Trust's *History of Recording*: in 2008 scientists were able to digitally convert the phonautograph recordings of the song "Clair de la Lune".

[21] Thomas Edison's 1877 invention, the phonograph, utilized sound pressure to engage a stylus which then depending on sound pressure level would push the stylus to imprint on a cylindrical piece of tinfoil.

French engineer Charles Crocs patented a similar device to Edison's the same year of 1877; however, Edison built his working prototype before Crocs was able to.

[22] Edison's early phonograph recordings would often not last more than one or two playbacks.

[23] It is during this time period that Emil Berliner developed his flat disc method of reproduction as opposed to previous wire based designs like Edison's.

of imprinting audio information, in this form of electro-acoustic recording the sound pressure waves enter a horn which, then through the transfer of kinetic energy via the sound pressure, etches a corresponding groove into a hard wax disc. In contrast to the sight of a modern mixing board with the ability to adjust individual instrument volumes, because of the nature of how electro-acoustic used sound pressure to physically etch into a medium there was no adjusting of levels by the engineer post recording. Instead, the ensemble would be arranged in a room based on volume produced, as much louder instruments such as drums/percussion and large wind/string instruments would be placed further away from the machine's horn. Whereas in contrast, softer instruments such as voice or high wind/string instruments would be placed closer to it. Because of this, moving of bodies around a room was the first form of mixing. However, as previously mentioned, it is the introduction of a flat disc by Emil Berliner that truly birthed an industry, being easily duplicatable and extremely cost-effective in comparison to the cylindrical model used by previous engineers.[24]

Possibly the biggest technological breakthrough after the introduction of a flat shellac disc was that of the introduction of a tape medium and the recording console. Analog tape was first developed in camera and film technology being then adapted from movie film for audio by Franklin C. Goodale in 1909. In 1927 by German engineer Fritz Pfleumer developed a specialized audio tape that was coated with powdered iron compounds. It would be this iteration of the

[24] EMI, *History of Recording*.

technology that would go on to truly birth an industry spawning many of the phrases still used today in the vocation such as cutting drums and splicing well into the digital era.[25] Analog tape is something that is often still revered by older engineers, and feared by many younger engineers whose careers were started on hard drives rather than on metallic coated plastic. Tape not only could store information, it could also do it well in comparison to its predecessors (however still not near today's standards). For example, tape is a flattering medium for the audio imprinted on it due to natural compression and a 2nd harmonic distortion.[26] Additionally, the recording console gave the engineer significantly more control over how much signal was taken from the microphone and preamp to be printed onto the tape via gain staging controllable by knobs and later faders.[27] Some of these early consoles were developed by notable engineers such as Bill Putnam, Tom Dowd, and Rupert Neve. These early consoles were fully custom-built per order, meaning that they were expensive and did not consist of parts or modules that could be easily bought and swapped if needing to be fixed. Early recording consoles also recorded to mono, meaning that no matter how many microphones

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[25] Gronow, *An International History of the Recording Industry*, 24-26.

[26] Tape compression refers to the audio that is imprinted hitting the threshold of dynamic range on the tape and creating a squishing sound rather than distortion through clipping as can be heard when hitting the threshold on a digital medium.

2nd harmonic distortion refers to a very slight distortion that happens on the 2nd harmonic of the harmonic overtone series on analog recording; this slight distortion creates less accuracy but also a flattering and iconic warmth that is attributed to analog.

[27] Gain staging refers to the level of sensitivity of a microphone controlled by a preamplifier

Faders are the now common mode of volume control on a console and were pioneered by the consoles built by Tom Dowd; while knobs still remain for sub-tasks such as manning, headphone volumes, and FX sends.

were plugged in, there would be no panning or building of immersive stereo panorama as can be heard in stereo recordings developed by Alan Blumlein.[28] Upon the invention and spread of stereo multi-track recording by the 1950s, the music industry entered an era of new unrivaled audio quality, achievable by only the most well-funded of operations such as major record labels and large artists.[29]

Microphones, while not a precursory recording medium, are another significant part of the development of recording technology which has not been firmly replaced by a modern alternative during the transition from analog to digital recording. Microphones are a unique part of recording in that unlike tape which became technologically obsolete, microphone technology has withstood the test of time; its primary developments since the 1950s being more a shrinking of the ratio of cost to quality. Not to say a $30,000 vintage Telefunken U47 or my $7,000 Neumann U67 microphone don't sound phenomenal on a wide range of sound sources, but rather in microphone shootouts[30] with vocalists I have seen on several occasions a $100 MXL 990 beat the U67 in the context of the vocalist's vocal timbre in the song. Additionally, my boss chief engineer Tom Gordon, at both Imirage Sound Labs and Hook City has spoken numerous times

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[28] Alan Blumlein was the first engineer to develop stereo sound; unfortunately his patents were not renewed after his death and the technology went into public domain.

[29] Stereo multi-track recording is the process of having multiple tracks independently controllable and pannable across the stereo panorama (left to right).

EMI, *History of Recording*.

[30] A microphones shootout is where multiple microphones are lined up to record the same sound source and then reviewed to choose which microphone best fits the application.

about his experience working with Willie Nelson; wherein Nelson's vocal microphone was a $99 Shure SM57 (a notable dynamic instrument microphone and a studio staple), but nothing worth writing home about like a high-end Neumann or Telefunken microphone to say the least.[31] All this to say, while some technological developments have served to improve on pre-existing microphone technology updating designs, the majority of microphones in heavy use within music production in the modern day are more or less the same technology that has been prevalent for over 50 years just made more cost-effective through technological development.

Given that recording tape was the dominant medium of recording audio for around 50 years due to its flattering qualities such as tape-compression and "warmth", the acceptance of a new medium to replace it was met with much skepticism from the industry.[32] Early digital recording platforms were systems such as the Soundstream, 3M, or Decca,[33] machines respectively. These systems were initially just two-track stereo machines, lacking the multi-track capabilities of bigger analog recording consoles; however, even in their infancy attributes such as increased dynamic range, lower noise floor, and colorizing of audio via analog components[34] showed that digital would be superior once the

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[31] Tom Gordon, Lecture Notes, University of Nevada, Reno (2015).

[32] Milner, *Perfecting Sound Forever*, 33.

[33] The company Soundstream developed a digital recorder of the same name.

3M is one of the major tape production companies and their attempt to branch into digital.

The Decca machine was used up into the 90s.

technology developed enough. The next particularly notable development which I believe to answer how the emergence of home recording studios became so widespread, is the Digital Audio Workspace (DAW) software such as ProTools or Logic Pro and all-in-one digital audio interface. What made the developments of DAWs so game-changing is that it had the ability to not only record and show audio data, but also allow for editing tasks to be performed like never before in the analog era.[35] For example, quoting an interview with my boss at Hook City recording studio, David Coverdale, that I will unpack further later in this chapter: "Editing in the old days was usually a cocaine encrusted razor blade in the middle of the night. And it was like, always hold your breath time. This is, you know, slice, oh my God, you know, sometimes if not most of the times it worked, thankfully, and other times sadly we lost".[36] Rather than needing to perform precise math and use potentially destructive razor blades to slice and splice tape together as described by David, an engineer with a DAW can visually see the sound wave on a screen and slice, splice, and crossfade with the simple click of a mouse; and if the edit is messed up there is always cmmnd+z[37] to revert back

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[34] Dynamic range refers to the range of volume that can be recorded.

The noise floor refers to the noise generated by the microphone preamp itself; on lower quality gear when recording soft instruments where the gain must be pushed this can become a problem.

Analog components would be items like transistors and vacuum tubes within a piece of gear.

[35] Keijzer, *The Evolution of Recording*, 15.

[36] David Coverdale, Interview, Hook City Studio, Reno, 2023.

[37] Crossfade refers to a type of audio edit that smooths together two pieces of audio that have been spliced together; similar to a bandage.

to before the edit. In addition the DAW introduced the ability to forego expensive outboard gear such as compressors and EQs with analog inserts, instead using plugins[38] to augment the audio via digital inserts. This process would come to be known as working inside-the-box. Inside-the-box comes from computers and interfaces, with their boxlike aesthetic, created a completely self-contained environment to work and create within, as opposed to having multiple interlinked systems such as the tape machine and console in an analog studio. These interfaces hold all of the components necessary to record audio, replacing the need for multiple components such as the tape machine and console. The components at a base level include a microphone preamp with variable gain and phantom power to run condenser microphones, analog to digital converters, and a means to communicate this converted audio data to the computer and subsequently the DAW software through connectors such as a USB cable.[39] As of the current day through a company like Sweet Water or Vintage King one can buy a very capable recording setup[40] for their existing computer from companies like Focusrite, Presonus, MXL, and others for under $500 US dollars.

The quick key command for edit undo.

[38] An insert refers to a process where audio augmenting machines or software can be added into the signal chain to augment the audio.

Plugins are digital software tools for audio augmentation.

[39] Phantom power is a 48v switch on most interfaces and consoles that powers highly sensitive condenser microphones; as opposed to dynamic microphones which use electro-acoustic technology similar to early recording systems, using sound pressure to activate the diaphragm of the microphone.

Keijzer, *The Evolution of Recording*, 15.

[40] A 1-2 input interface and a condenser microphone.

Additionally, most of these systems can be upgraded in a modular fashion as the home engineer grows and expands the scale of projects they are working on. For instance, more microphone preamps and inputs can be added in addition to more microphones to go from being equipped to record just a guitar and vocals to being able to record an entire drums set or band.[41] Additionally, the qualities of each piece of gear can be upgraded to a point,[42] as is the case with my home studio. I have slowly built a completely top of the line studio with gear that rivals that of the nicest of commercial recording studios. It is because of these technological developments that engineers like myself are able to build these home studios capable of producing commercially viable music.

Because of this modularity produced through technological developments, it afforded individuals looking to build a home recording space, a scaling of the capability/functionality based on their needs and/or budget at the time. At the most basic level, a significant amount of work can be done with just a laptop/tablet/phone, DAW, and a set of headphones. For compositional purposes, this setup is enough to sketch out song ideas or even create a complete midi[43] work if there are no acoustic sound sources. Additionally, this can all be done without having even an audio interface. Moreover, one could add one or more features to greatly expand the capability of this setup. These could

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[41] I often use up to 14 microphones when recording a drum set.

[42] At a certain price point most gear becomes less of objectively better than other gear and more just a better tool for a specific scenario/job.

[43] Midi stands for Music Instrument Digital Interface and is used when using digital instruments within a DAW.

be upgrades such as studio monitors to create better mixes of midi content; or an audio interface to allow for the capability to run both dynamic and condenser[44] microphones to capture analog sound. Either one of these additions would move the recording space another step up the scale of functionality. In regards to my own home recording space, which will be highlighted in Chapters 2 and 3, I would argue that it falls just past the middle of the road in capability. By this I mean that the level of equipment, gear, and know-how are objectively top-tier. Unfortunately, the physical space within which the studio resides (my apartment building) keeps the space from moving further up the scale to be on par with something such as David Coverdale's private home studio, Hook City. However, because of the limitations of my specific space, a symbiosis between commercial and home recording venue is created. Within which both spaces mutually benefit from one another and support both of their continued existence; rather than being in competition or opposition to one another. Whereas, if I were able to take my home recording space to the next level on the linear scale of capability via destructive renovation for acoustic treatment, or no sound volume limits, I would not need to have a blend of both commercial and home recording spaces working in tandem. In this case, I would ultimately be contributing to the decline of brick and motor studios which is highlighted in the article by Kenan Draughorne titled, "We're Losing Our Abbey Road; Famed L.A. Music Studio

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[44] As previously discussed with phantom power; dynamic microphones do not require a power source other than acoustic sound pressure to activate the microphone's diaphragm.

Condenser microphones require either a phantom power signal of 48v or a tube power supply to activate the diaphragm of the microphone.

United Recording Lays Off Staff." (2023). [45] In this article Draughorne discusses the changing of the music industry landscape and the closing of legendary Hollywood commercial recording studio United Recording, which was considered by the Audio Engineering Society (AES) as one of the "7 Audio Wonders of the World."[46] It is where legendary albums such as Greenday's "American Idiot", Ray Charles "Modern Sounds in Country Western Music", and many others were created. In this article Draughorne discusses the industry shift which is putting even the most famous of commercial studios at risk, specifically stating:

> "These days a growing number of artists favor a DIY approach, recording at home and mixing tracks themselves or outsourcing it to an engineer through the internet. For some artists, especially younger acts operating within hip-hop, pop, and dance, that's enough to get the job done and keep expenses down, in an era when a single Spotify stream is worth a fraction of a cent. But for those who prefer in-person collaborations and impromptu meetings in a studio hallway, options are drying up" (Draughorn, 2023).[47]

To a degree, I could argue that this article's contents alone are a smoking gun that the winds of change are blowing in the favor of home studios. However, a key point is made by Draughorne in that the job that needs to be done dictates the necessity to work at both home and commercial recording studios. For

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[45] Kenan, Draughorn, "We're Losing Our Abbey Road; Famed L.A. Music Studio United Recording Lays Off Staff," *Los Angeles Times*, March 20, 2023, https://www.latimes.com/entertainment-arts/music/story/2023-03-20/united-recording-layoffs-studio-closing-los-angeles-green-day-beck-sinatra

[46] United was founded by Bill Putnam who as discussed also created the company Universal Audio.

Ibid.

[47] Ibid.

instance (as I discussed the mutual benefit of both my home studio and Imirage Sound Lab), due to volume limits in my one-bedroom apartment I often track drums and other loud instruments or large ensembles at a commercial studio, and then do the rest of production out of my home. However, combating one statement made by Draughorne is that I believe home studios have the equal potential for in-person collaboration, as chapters two and three of this work will show.

In order to better ground my work with corroborating primary source material directly from the industry, as well as to zoom in on specifically when digital made the full transition to dominance, I reached out to audio engineer and personal mentor of mine, Raymundo Silva.[48] Ray agreed to an interview to provide an oral history of his experience during the transition from analog to digital and working in some of the first professional home studios in the industry mecca of Los Angeles in the 1980s and 1990s. Ray and I met at the University of Nevada, Reno's recording studio in the relatively new arts building.[49] In regards to top-of-the-line crème-of-the-crop gear, this studio would make even the most spoiled of engineers drool. There are racks upon racks of legendary outboard gear such as a compressor candy store with several LA-2As, 1176s, Empirical Labs Distressors, an extremely capable microphone locker, and at the helm a

[48] Raymundo Silva has worked with the likes of Stanley Clark, Tupac, Ice Cube, and many other artists; as well as working for Paramount Pictures as both a video engineer and later production sound mixer for numerous popular television shows and several notable films.

[49] Raymundo Silva, Interview, University of Nevada, Reno (2023).

$100,000 Solid State Logic[50] AWS 924 Delta 24 channel analog console (what I would liken to the Rolls Royce of recording consoles). Ray and I began our conversation by discussing the reason for engineers' and artists' disdain for early digital recording. Funnily enough, as Ray detailed, it was never digital that was the problem, but rather that the early analog components[51] within early digital rigs negatively colored the sound. Specifically filters[52]on the analog to digital (A to D) converters as audio passed through them being converted to data. However, as these components were refined, the engineers and artists alike began jumping on board. Ray also noted there was a caveat with artists like classical musicians who still turned their nose at is as it was much more accurate to real life than what had been established as a standard. Rather than having a slight hiss at the floor of the recording that covered up a majority of chair squeaks, page turns, and other small noises inherent to performance, digital captured them all quite accurately. Besides this small camp of naysayers, the benefits to the recording industry as a whole far outweighed any sort of downside. Most notably, as Ray made light of, was the pricing and size of analog equipment in comparison to digital equipment. The analog rigs were massive compared to the size of modern digital technology. Much of the gear such as tape machines, recording consoles,

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[50] Microphone Locker is industry nickname for a studio's microphone collection; notably my home studio's microphone locker is of equal quality to most commercial studios.

Often abbreviated and referred to as "SSL".

[51] Analog components refers to the electronic hardware within a physical unit as opposed to a digital programmed software emulation of the hardware.

[52] A filter refers to a coloring of the audio as the signal passes through an analog component; this could be compared to running through a sprinkler.

and racks for outboard gear being the size of a refrigerator or washer/drier. Because of this, not only was more real-estate required to operate a professional quality system, but also multiple engineers were required to run the system. Additionally, attaining the level of quality that big studios could achieve was a very expensive task. Another often overlooked element of this gear was that due to its mechanical nature, as in the case with a tape machine, it was much more labor intensive in regards to the necessity for formal electrical and mechanical engineering knowledge to maintenance and repair gear than something like a modern digital audio interface which can be easily fixed/replaced by the manufacturer.[53] Digital instead offered even more accurate sound quality at not only a fraction of the size,[54] but also a fraction of the price. Rather than paying hundreds of thousands of dollars on several extremely large tape machines and a console that took a dedicated room to house far enough away from the microphones picking up sound, one could instead spend a few thousand dollars on several ADAT machines that could fit in the space of most standard microwaves. Ultimately this change set the stage for many people to set up a professional quality studio from home as can be seen within the box rigs like my own.[55]

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[53] An all in one box for digital audio recording into a DAW, and if damaged companies will quickly repair or replace most units that are still in production.

[54] Modern digital recording rigs can be as small as the footprint of a laptop.

[55] Silva, Interview.

Speaking specifically to the potential for home studios that this shift yielded, Ray gave the example of an Art Porter record he did with producer Chuckie Booker, which also happened to be recorded in Booker's home. According to Ray, Booker programmed[56] all of the backing music except for Art's saxophone, which Ray and Booker built an isolation booth in Booker's garage to record it in. This account from Ray also exemplifies the symbiosis between commercial and home studios in the professional landscape and I believe is an important aspect of this larger shift in the music industry. While the album's tracking was done in a professionally equipped home studio, the post-production was done in Ray Parker's commercial studio. An important point both Ray and myself as engineers agreed on was that certain jobs would require a space more dedicated from the ground up for recording than apartment conversions like my own studio can provide, as is discussed in Chapters 2 and 3.[57]

Among the myriad of technical facts that Ray and I discussed throughout our conversation, one element remained consistent: a high-fidelity recording with great production alone doesn't make it commercially viable, a good song with the right "vibe" does.[58] Ray further elaborated that no one can say what will be a hit song based on any sort of formula, and that from this ambiguity sprouts a surprising amount of superstition and technical smoke and mirrors based on the beliefs of many artists and engineers. For instance, an engineer can say they

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[56] Programming refers to using midi to construct a track.

[57] Ibid.

[58] Ibid.

recorded X amount of hit songs using a particular setup, so based on these results it must be a successful formula. However, the reality of the situation is that as long as there was a base level of engineering ability and quality, it would have been a hit regardless. A specific example of this superstition that Ray provided for me during our interview was that of what is known as an ABX study to determine if people could hear the difference in sample-rate between 96kH and 44.1kH.[59] In this study participants included average music listeners, musicians, audio engineers, and self-declared audiophiles. Ultimately, the study resulted in none of the participants being able to accurately and consistently discern between 44.1kH (which is what CDs are still released at) and 96kH (which is what is now considered HD audio).[60] Ultimately to the normal music consumer "vibe" wins out over quality the majority of the time. As Ray described, beyond a certain point of quality, the only reason to strive for impeccable audio quality such as phase coherence resulting in crystal clear imaging is to flex on other engineers, as nuanced attributes such as this will ultimately be lost on an untrained ear.[61]

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[59] Sample rate refers to the number of samples per second that can be captured in a recording.

ABX study refers to using two subjects labeled and presented to participants as A and B and then X is if they can discern which one is which.

[60] Brad Meyer and David. R Moran "Audibility of a CD-Standard A/D/A Loop Inserted into High-Resolution Audio Playback" *Journal of the Audio Engineering Society* 55, No. 9 (2007), 775-779.

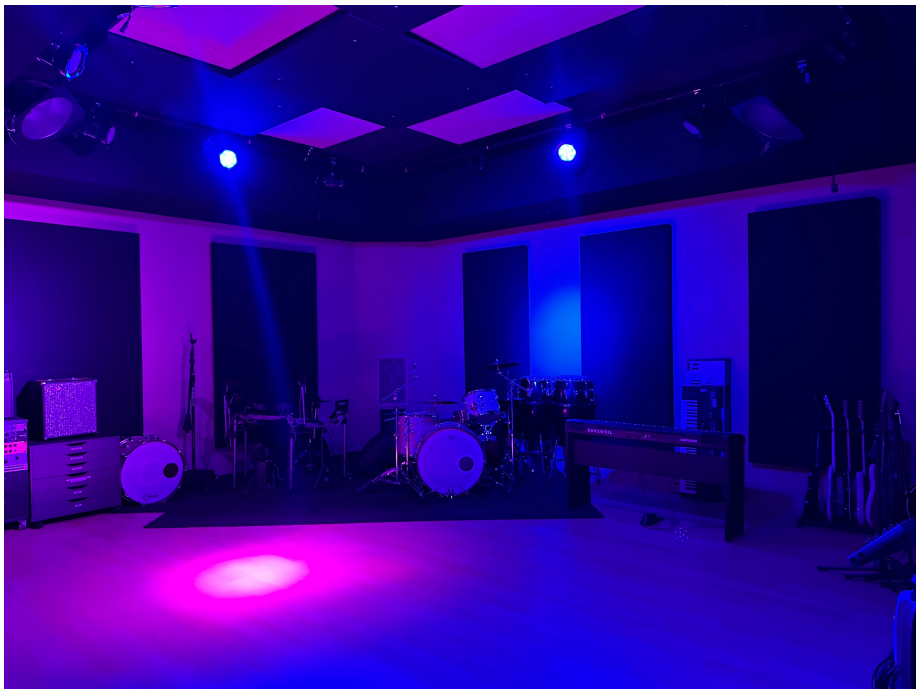
[61] Phase coherence refers to the alignment of the time it takes for sound to reach the diaphragm of multiple microphones; this can be adjusted in the DAW by aligning the peaks and valleys of waveforms.

Imaging refers to where instruments in a mix sit within the stereo panorama; i.e. left to right.

Ibid.

But what is “vibe” and why is it important? Vibe carries many names, jeuje, pizzazz, razzle-dazzle, je ne sais quoi, all referring to an intangible or ethereal quality marking something as unique or special. Following the idea that Ray Silva put forward that audio quality becomes secondary to vibe, I would argue that vibe is a culmination of the imparting of all associated personalities working on a collaborative project, as well as the qualities of the environment in which it was created in. Similar to how genetic traits are passed down, I believe vibe is akin to a fingerprint, unique in every instance as its contributors don’t know what qualities they are imparting going in, nor do they know how those qualities will manifest once they mix with another contributor’s. Due to the engineer’s spatial control to manipulate the environment and the inherent lax atmosphere the space carries, the home acts as a terrarium for cultivating high-quality natural vibe. Throughout the autoethnographic examples that I present in the latter two chapters of this work, I place a heavy emphasis on vibe as a product of the relationships built through these attributes of the home environment, spatial control and spatial intimacy. To further justify the importance of vibe and in an attempt to better pin down tangible qualities of this nebulous concept, I would like to describe its presence in the private professional home recording studio of the band Whitesnake in Reno, NV, as well as refer to an interview with my boss at that studio, David Coverdale.[62]

[62] The lead singer of multiplatinum rock bands Deep Purple and currently Whitesnake.



Main tracking room of David Coverdale and Whitesnake's home studio, Hook City.

Walking into the private studio of David Coverdale and Whitesnake, one is instantly met with row upon row of platinum records, wild modern furniture and art, colored lights galore, an arcade machine, and a stockpile of rare or notable instruments.[63] From the entrance, walking into the main studio, one quickly realizes that this home recording studio makes no sacrifices. In fact, the main tracking room was acoustically treated by engineers from Skywalker Ranch in California. It has a myriad of sound absorption and deflection materials arranged

[63] The private studio Hook City where I engineer at is technically a home studio; this space represents creating a home studio that eclipses many commercial studios due to the ability to renovate the home (creating less compromises) and truly blurs the lines between what a commercial recording studio and home recording studio are.

Including a personal guitar of virtuoso Steve Vai with a personal note written to David Coverdale on the back of it.

to make the room a more optimal acoustic environment. Given this information, I believe this space to truly be the apex form of potential for home studios, showing the importance of a lax informal atmosphere and spatial control to manipulate the environment. Coverdale could have created the space with little regard to aesthetics and still achieved optimal audio quality, but instead from every corner of every room emanates inspiration through its aesthetic glory. From bedroom shredders with one microphone, to world renown rock-stars with two of every piece of gear, I believe this shows that spatial intimacy and control are positive contributors to the creative process. Nowhere does one have more control over vibe than the home. For example, on the day of our interview the rest of the Whitesnake crew[64] – myself included – had transformed the living room of the studio into a fully-fledged movie-quality video set for Coverdale to have a video interview. Luckily, because of this, I was able to catch David in a rather chatty mood coming out of the extremely equipped video interview for mine. However, instead of being captured on a $20,000 camera, the interview was being captured using iPhone Voice Memo. The first question I asked David was, other than high-quality music production, what do you look for in a studio environment? One of the first points of that David spoke of was the importance of comfort between production crew and artists, creating a familial-like work environment. Specifically, David talked about vibe not just being about lighting or

[64] David Coverdale refers to the crew working at Hook City as the “Hook City Hooligans”.

visual aesthetics, but largely the social relationships between band members and engineers stating:

> "Purple[65] created their own vibe and we were really fortunate to have a very cool engineer called Martin Birch, who has sadly passed. But Martin was like the sixth member of Deep Purple, great, socially great, fun, and entirely capable and just willing to work 24/7. Those days we were up all night" (Coverdale, 2023).[66]

Under this framing of the importance of relationships between artist and engineer directly by Coverdale, and the spatial control described in turning the office into a video set, one can see vibe is not just décor. Rather it is a product of the friends one makes along the way. Given that David Coverdale, who could work in any recording studio in the world chooses to build and work in his own professional home studio, this supports the claim that there is little question now of the capability and potential for home studios.

Ultimately what I believe the technical superstitions held by some artists and engineers that Ray describes, and the concept of vibe within the industry which David Coverdale has provided a foreground on, show is that atmosphere and trust between engineer and client are most important as long as there is a baseline of engineering fluency and quality to the product. Because of this, vibe is created through strong relationships and trust, not just elaborate décor (although that doesn't hurt to have as well). Additionally, from a technical standpoint, as described by Ray, depending on the job that needs to be done, advancements in digital recording technology have made it much more

[65] Referring to the band Deep Purple.

[66] Coverdale, Interview.

accessible for people to produce commercially viable music from home.[67] This work uses two particular attributes of the home environment which the autoethnographic examples in Chapters 2 and 3 serve to highlight. Those attributes being spatial intimacy and spatial control which I believe are potential reasons for why engineers and artists choose to create and work in these spaces spurring their continued emergence. I use spatial intimacy to refer to the informal and lax atmosphere a home environment carries with it. Compared to public/commercial spaces with expected sets of professional behavior, the atmosphere of a home provides a veil of privacy which nourishes and encourages the strengthening of relationships, which my career experience has shown significantly contributes to the quality of the project and how the artist feels about it as a representation of themselves. I use spatial control – in relation to "flow" – to refer to the level of enhanced control of the environment an engineer has working within their own home. This attribute of the home environment allows the engineer to manipulate the space to meet the needs of any client, providing an optimal atmosphere for creation. Additionally, the level of spatial control is amplified by the engineer, usually living in the space and knowing it like the back of their hand. Because of this, when any technical issues arise, a quick work around can be made or the technical issue can be leaned into to impart a unique quality to the project as a whole. For these reasons, I believe the home to be an ideal environment for creating music as it is not only purely

[67] Silva, Interview.

controllable and augmentable by the engineer to fit any need. Additionally, its lax atmosphere encourages relational growth between artist and engineer.

I would like to also address the importance of the home as a symbol. As stated in Samuel D. Gosling, Lindsay T. Grahm, and Christophor K. Travis' work The Psychology of Home Environments: A Call for Research on Residential Space", the home is often regarded as a sacred place where one has a sense of privacy and intimacy, where expectations of proper public behavior are null and void, spawning cheesy wall décor with phrases such as "home is where the heart is"; however, as silly and cliché as that phrase is it holds merit when considering that the home creates a veil of privacy or sense of shelter for creative endeavors (2015).[68] This emphasis on differentiating the domestic private space and public space can also be seen described in David Crouch's work *Leisure/tourism Geographies, Practices, and Geographical Knowledge* (2007).[69] For instance, where would pop-culture have society believe non-musicians feel comfortable singing, in the shower, while cleaning around the house, or in the car driving, all places covered with the veil of domestic privacy to some degree. For professional creatives this is even more so; where do musicians and composers practice and work the bugs out before performing/premiering in front of audiences? It is usually in the privacy of their home. The conceptual safety society has associated with the home gives it a special element for creating, and

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[68] Lindsay T. Graham, Samuel D. Gosling, and Christopher K. Travis. "The Psychology of Home Environments." *Perspectives on Psychological Science* 10, no. 3 (2015), 346-50.

[69] David Crouch, *Leisure/Tourism Geographies: Practices and Geographical Knowledge* (London: Routledge, 2007), 1-4.

in turn, recording music. An instance of this special sauce for creative production can be seen when I have a client show up in pajamas with snacks in hand for an overnight session. Rather than going to a scheduled formal event at a dedicated business, the atmosphere is closer to that of a grown-up slumber party that is equipped to record and produce industry-quality music. As the autoethnographic examples of my home recording studio will show, I believe that these two attributes of the home environment can be seen clearly when highlighted with themes from the aforementioned theoretical framework. Ultimately showing why the home environment so profoundly excels as a space for creating and producing music.

While I have spared no breath talking up the home as an ideal atmosphere for creating music, I feel that I must again return for a moment to my conversation with Ray on the topic, in order to play devil's advocate. Home studios, for the most part, have limitations (as David Coverdale's studio Hook City shows). My home studio for example, with all of its extremely high-end gear stuffed inside, has to make many compromises that would not have to be made at either Imirage Sound Lab or Hook City. On the surface level, I have to deal with the potential for noisy neighbors, traffic, volume limitations, and noise curfews; from the ground it was built to be an apartment. The space is trying its hardest to be a recording studio, but through having two jobs to do it makes sacrifices to both. In stark comparison Imirage Sound Lab is built from the ground up to be a recording studio, and only a recording studio. Additional internal walls are built to diminish sound penetration and increase isolation, the acoustics of

the rooms are tailored to favor musical performance, and even the electrical wiring within the studio is setup specifically for the task. I am making light of this as I am not pitting home recording studios against commercial ones, rather from my own engineering experience, backed up by that of Ray Silva and David Coverdale's, I argue that both serve important but different roles and that it is the artist's idiosyncratic needs that dictate the best course of action.

Chapter 2: Friendgineer

One part of the autoethnographic vignette in the intro of this work is atypical, and that is that I am not usually awake before my first client of the day arrives. More commonly, as many of my clients are now used to, they are the ones that awaken their engineer to get the day started, feeling comfortable enough to bang on my front door or just walk in if I fell asleep with the door unlocked. This chapter primarily uses a relational focus to highlight the importance of spatial intimacy, particularly the informality inherent to the environment of a home recording studio by using autoethnographic vignettes from a recording session in my own professional home recording studio. Additionally, I unpack the autoethnographic examples as they relate to both the importance of spatial intimacy in a home recording studio environment, and how it affects these spaces' continued emergent within the music industry. In this chapter the autoethnographic examples have been collected from a single session with a singer-songwriter client of mine named Adriana.

Awaken The Engineer

The shrill bark of my miniature dachshund MoMo shook me out of bed as my first Sunday client at my professional home studio banged on the door to wake me up and begin our session around 1pm in the afternoon. Once I stumbled over to the front door in my PJ's I cracked it open to the beaming smile of a ukulele and guitar wielding singer-songwriter named Adriana, who had also brought in tow ingredients to show me how to cook a dish after our session. As has become customary in my home studio, we did not begin with work, but rather a casual hang session over coffee, Sponge Bob references, and clips on YouTube while we gossip about what had transpired over the week since we last saw each other. Since it is my space we are working in, I choose what I want to charge for and what I don't. In this case I don't charge for investing in friendship, which I have seen in my work to be a cornerstone of optimum creative juice flow and musical performance.

Putting this moment under a microscope in regards to brown's notion of "emergent strategy", a key point can be quickly identified: the importance of small investments in relationships on the micro level compounding to positively affect the project as a whole on the macro level. While brown draws on "emergent strategy" to speak of the potential of building strong, human-centered connections in the realm of activism, I find her approach resonant in the realm of music production, a human centered and also goal-oriented pursuit. In this case,

that pursuit is a musical product such as an album, EP, or even a single.[70] First, one could interpret small talk and not getting straight to work as wasting time; however, it is moments like this that I have found to significantly deepen relationships with clients, particularly an enhanced depth of trust. This is further supported by the works of Neville Holmes (2009) and Phillip Miles (2020).[71] Specifically, Holmes states in his work *Music, Sociality, and Digital Technology* that music acts as a sort of "social glue" and that "Perhaps the most significant aspect of music, though, is its sociality. For cultures without radio, television, and the like, music is thoroughly social. Groups of people bond through singing, dancing, and playing music together".[72]

I would argue that this emotional bonding through music which Holmes speaks of creates a heightened level of trust which translates into comfortability with expression and transparency of expectations and current feelings. Additionally, I believe this example and theory, which highlight how the attribute of informality and separation from the public sphere in a home environment is further supported by Sandy G. Smith in her work *The Essential Qualities of a Home* (1994),[73] in that it creates a veil of domestic privacy which is one of the

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[70] EP stands for Extended Press.

A song released as a standalone unit; usually in anticipation of an album or longer work.

[71] Neville Holmes, "Sociality, and Digital Technology," *Computer* 42, no. 9 (2009), 103–4.

Phillip Miles, *Midlife Creativity and Identity: Life into Art* (Bingley: Emerald Group, 2020), 67.

[72] Ibid, 102

[73] Sandy G. Smith, "The Essential Qualities of a Home," *Journal of Environmental Psychology* 14, no. 1 (1994), 32-34.

driving factors for why artists and engineers choose to both create and work in these spaces. Specifically, Smith addresses the home space's potential for relationship building stating, "Optimally, the home provides such a place of privacy for its users, and this ability to achieve optimum levels of interaction with others is an important characteristic of the home environment, permitting feelings of ease and relaxation".[74] Under this logic, not only does the space encourage the deepening of these working relationships, but it also carries a level of privacy that can be used as a safe place for artists to work out sensitive topics related to the development and expression of identity such as abuse, racial injustice, gender, or sexuality.[75] Combining this with the technological developments in recording gear that I discussed in Chapter 1 which have allowed for engineers to use even an apartment as a top of the line recording space, the result is an overall product that is both high quality in regards to audio, and high fidelity to the identity of the artist. In the example with Adriana, a series of these moments (several months weekly at this point) had led to the comfortability and loose nature of friendship which yielded new creative ideas to be implemented on her record.

Additionally, I believe the home atmosphere can be seen as an example of how "emergent strategy's" focus on relational development also works in other aspects of human sociality and interaction beyond just professional work exchanges to further highlight the importance of informality within the space. I

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[74] Ibid, 32.

[75] Ibid, 33.

jokingly tell my clients that I am one of the most expensive friends they could make, and while this is a joke, the friendship is not. In order to further explain how this concept functions in the prior example I would like to look at a moment in in brown's own work. Early in her book *Emergent Strategy* (2017), brown lays out the importance of relationships and the sharing of information for organizational success; specifically, brown uses the phrase "honoring the very small things that create the largest shifts in the world".[76] I believe this idea of honoring small moments, such as the amp distortion gag with Adriana, is exponentially valuable when considering that superficially small informal moments like these compound into a solid relational foundation from which to grow from. I would also argue that through the home environment which allowed for my sessions with Adriana to have a playful relaxed nature, that this example again shows how the spatial intimacy and informality of a home environment is a significantly positive attribute to consider in understanding why these spaces continue to grow in popularity within the industry. [77]

This humanist focus from brown's framing of "emergent strategy" can also be seen in comparing Adriana's example to that of one from Louise Meintjes' work *Sound of Africa: Making Music Zulu in a South African Studio* (2013).[78] In

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[76] brown, *Emergent Strategy*, 16.

[77] This increase in popularity of home recording studios within the recording industry can be seen in Richard Bloomer's article ""The Home Recording Studios of the Stars".

Richard, Bloomer "The Home Recording Studios of the Stars", *Play Music Today* (2015). https://www.pmtonline.co.uk/blog/2015/08/17/the-home-recording-studios-of-the-stars/.

[78] Louise Meintjes, *Sound of Africa!: Making Music Zulu in a South African Studio* (Durham: Duke University Press Books, 2013), 1-5.

this book, Meintjes provides an autoethnographic account of her time working in a recording studio in South Africa. First, as an engineer I greatly appreciate that Meintjes provides a technically heavy background in her work establishing the importance of not only the technology, but also other forms of studio knowledge. These include intimate knowledge of studio processes and mannerisms, such as naming various pieces and processes within the studio and their function. Specifically, processes such as:

> "setting up mics, getting sounds, programming rhythm tracks on the drum machine, laying down guide vocals and basic backing racks, rechecking a song on the demo tape, double- or triple-tracking vocals, overdubbing percussion, keyboards, flutes, accordion, slipping in a solo, cutting out a break, copying a chorus, retuning the guitar, bumming cigarettes, changing the lyrics, rehearsing on the spot, experimenting." (Meintjes, 2013).[79]

However, it is the way in which she platforms the importance of how the studio environment fosters interactions and relationships between engineers and artists by being a neutral space that I find paramount to my argument. It is for these reasons I argue for the importance of a humanist focus in brown's emergent strategy for not just this example with Adriana, but when considering home recording studios as a whole.

Speaking directly to this notion in *Sound of Africa*, Meintjes states:

> "The space of the studio is a seemingly neutral political ground, in which the primary endeavor is the production of aesthetic and exchange value, not of political positions. Any investment in shaping the proceedings is usually a heightened personal one for the participants, for they are making their art, building their professional reputations, and generating their principal incomes. Given this, the studio practice intrinsically brings

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[79] Ibid, 3.

> national political debates into immediate contact with aesthetic ones in a situation in which artists-citizens are actively engaged and deeply invested. In contrast to many South African spaces that are acutely racialized and overtly politicized, the studio reveals how South Africa's ruthless politics are infused with feeling and embedded in the struggles of daily living and in expressive forms that on the surface appear to have little to do with race" (Meintjes, 2013).[80]

While Adriana's music is not political, the studio similarly brings in and reflects aspects of the outside world into the spatial intimacy and safety of a home environment where Adriana and I strengthen our relationship through unpacking them together and imparting the result onto the art. I believe in both cases the album or final product is dependent upon the compounding and strengthening of interpersonal relationships which are themselves facilitated by unpacking and filtering this societal reflection within the privacy and informality of the environment. Through this process, not only are social networks widened, but also the scope of reach for the final product is greatly intensified through each additional network.

In an interview with the owner of the commercial studio which I engineer at Imirage Sound Lab Dr. Lawrence Davis, he spoke of this importance of trust between artist, engineer, and producer with a concept he calls A-P-E,[81] which is essentially a balancing act where the skillsets of the artist, producer, and engineer complement each other's. Specifically, Dr. Davis stated that:

> "This A-P-E relationship is a tool for great recordings because there can be weak and strong bonds of communication between artist, producer,

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[80] Ibid, 9.

[81] Lawrence Davis is the longest running studio owner in the state of Nevada.

Dr. Davis' A-P-E concept stands for the relationship between Artist, Producer, and Engineer.

> and engineer. Sometimes the producer may be weak and the artist and engineer need to step up. This can be the case for any of the three in the triangle relationship. Optimally the producer must have a solid relationship with the artist and engineer; the artist with the producer and engineer; and the engineer with both the artist and producer" (Davis, 2023).[82]

Translating this concept into the context of the professional home studio, where engineers often have to simultaneously wear both the engineering and producer hats, this triangle of trust which Dr. Davis speaks of in his A-P-E concept becomes less of an equilateral triangle with three equal sides, and more of an isosceles triangle with two equal sides of trust.[83] Through trust and strong relationships a vibe can be created and a unique product can be formed.

Small Talk

As we filled ourselves on espresso and the latest gossip in our small music community, we began to formulate an exact game plan for the day. Since Adriana had cut a new demo in her basic home studio, we decided to dive into that and get it up to speed, workshopping the parts and replacing scratch parts with more high-fidelity permanent recordings and getting the core of the song in place. As I imported Adriana's stems[84] into the recording software Pro Tools she started talking about the inspiration for this song titled "I Don't Dance", which happened to be about a nasty breakup she had recently gone through. Rather

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[82] Lawrence Davis, Interview, Private Residence, Reno (2023).

[83] Often in home recording scenarios the engineer also acts as a producer performing task beyond just recording like giving musical input, organizing release details, and coordinating musicians to play on the record.

Ibid.

[84] Stems refer to the exported wave files of the recorded audio.

than just hurry through the process of setting up, I stopped the clock and we took a moment to talk about the experience. I did this to not only strengthen our working relationship, but also give me a more intimate knowledge of the identity of an artist and what specifically I am helping them to express.

From this example, one can begin to clearly see not only a continuance of the home environment and how it works to enhance and expediate the process of relationship building. Further, it is apparent how important those relationships and networks that are formed from them are. On a very fundamental level – again using the humanist approach of brown's concept of emergent strategy as a lens of analysis – the small interactions between Adriana and myself, while often not directly music related, work to create a stronger lever of trust between engineer and artist. For example, Adriana's comfort with accounting the story behind the song, her recent breakup, is something that I believe should not be quickly overlooked. Not only did it inform the engineer, myself, in better understanding the song and the artist themselves and how to better interact with them in the future, but I would argue a step further that it greatly benefits the project as a whole, with this level of trust between artist and engineer leads to more transparency about how the record is sounding throughout the process. This leads to a record that the artist feels is an accurate representation of what they are trying to convey and the way in which they are trying to emerge with their respective identity into a public domain, in my professional experience. Again returning to Phillip Miles' work, he addresses this emergence of identity through collaborative music in his work stating:

> "However, music is – of course – something that is communicative and is further promulgated in band rehearsals (and what are known as "jam sessions") involving musicians often playing with ideas, writing and rewriting song structures and ostensibly "warming up" for such tasks via a "run through" and "sound checking.". More widely, music is additionally (and more conventionally) externally communicated via product and public performance, a veritable "triad of responsibility" being formed that summarizes the responsibilities of "being in a band": writing, recording, and gigging, emerging from those shadows and into the light of both day and the stage." (Miles, 2020).[85]

Similarly, Adriana and I used the home environment to spend considerable time rehearsing, writing, and recording in order to craft the identity being expressed by the music to emerge into the public sphere.

Another direct example from brown's work that I would like to bring to the forefront is the stress she puts on the importance of the sharing of information for organizational success. And what is creating an album with an artist if not an organizational effort? Specifically, brown references author Margaret Wheatly, stating that both brown herself and her mentor Grace Lee Boggs aligned with Wheatly's idea that critical connections were actually more important than the size of the final product; more specifically, "relationships are everything".[86] I believe this perspective is an effective tool for understanding, from this autoethnographic example, why the spatial intimacy of a home environment acts as such a phenomenal platform for recording/creating music. Because of the home environment's lax environment, and because I have total control of the space (which is the theme of Chapter 3), Adriana and I take the time to share

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[85] Miles, *Midlife, Creativity, and Identity*, 26.

[86] brown. *Emergent Strategy*, 16.

information both musical and non-musical. This includes her breakup inspiring the song or a passing SpongeBob reference. These conversations informed me, as the engineer, of how to better serve the artist's vision. This focus on relational importance and its positive effects on art created in a collaborative manner can also be seen in Thomas Turino's work *Music as Social Life* (2008).[87] In this work, Turino discusses the dynamics of collaborative music practices and the benefits of engaging with music creation in a social manner as opposed to a solitary activity.[88]

Another element this autoethnographic example highlights that I believe to be worth noting is the scaling and diversity of different home studio setups, which I discussed in Chapter 1. Specifically, it shows the differentiation between a fully professional space like my own home studio, or the more common bedroom studio such as Adriana's. While my home studio is equipped similarly in regards to gear to a commercial studio, many home studios like Adriana's personal one are more focused towards recording demos, having only several inputs, a limited microphone locker, and only broad stroke knowhow of tracking and mixing procedures such as compression and bandwidth allocation (EQ).[89] A similar

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[87] Thomas Turino, *Music as Social Life: The Politics of Participation*, (Chicago: University of Chicago Press, 2008), 1-4.

[88] Ibid, 1-4.

[89] Demos are usually preproduction drafts of songs; proof of concept.

Inputs refer to where microphones are plugged in.

Bandwidth allocation/EQ refers to allocating space within the sonic bandwidth for each instrument to speak clearly.

example of this more basic kind of bedroom demo studio can be seen in Mathew Homer's work *Beyond the Studio: The Impact of Home Recording Technologies on Music Creation and Consumption* (2009).[90] In no way am I discrediting more basic home studios, in fact what I believe is especially important through this data is the scaling relationship between the different forms of home studios. This further reinforces my argument that they are not pitted against each other, but instead pick up where one space lacks in a specific moment. For instance, while my home studio provides a level of domestic privacy that Imirage Sound Lab does not as a public business, for a client it still isn't their home, it's a friend's home at best. However, Adriana's home demo studio is another level of privacy entirely. This allows her to assemble her ideas to the point she is comfortable enough to bring them over to show a "friendgineer" and eventually be released to the public. Often all three spaces will be used on a single project, demos cut in the artist's home studio, final acoustic drums being recorded at Imirage Sound Lab, and the rest of the production done from my professional home studio. Doing this, each entity serves its purpose and happily hands off the baton once its technical limit has been reached or another space offers more benefits to the artist's work. Additionally, as described earlier in this work, David Coverdale's private studio for his band Whitesnake further pushes the boundaries of what a home studio can be. For instance, the compromises which I have spoken of in operating my apartment-based home recording studio are null and void for Hook

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[90] Mathew Homer, *Beyond the Studio: The Impact of Home Recording Technologies on Music Creation and Consumption* (Nebula, 2009), 1-3.

City as a privately owned freestanding domicile where destructive renovation for the sake of acoustic treatment and function is a viable option. If a wall needs to be removed and replaced with a sliding glass door so there is a clean line of sight yet strong sound isolation between artist and engineer, for example, it can happen.

A Place to Act Silly

First came the experimenting with electronic drum sounds and the groove of the song itself. This is a very important first step in producing/engineering a song that will have drums of some type because it provides a grounding on which to build everything off of. In this case, Adriana wanted to implement a Bossanova-esque groove modernized by thick and hard-hitting electronic drum samples modified from those of the hallowed Roland 808 and 909. Once the basic idea was laid out on a keyboard as a team activity (me running the kick and snare pattern keys while Adriana hammered out the quarter note pulse on the high hat key), Adriana stood up and announced that this was now an electric guitar song as the acoustic guitar no longer seemed “bitey” enough to show the angry attitude she wanted. Disregarding the light setup I had done in anticipation of recording acoustic guitar, I went and grabbed a 1960s Gibson Les Paul gold top and a modern sea-foam green Fender Mustang from my collection and fired on my amplifier modeling unit called a Kemper Profiling Amp (a high-end guitar/bass amplifier simulating device). Begrudgingly putting MoMo on the ground from his semi-permanent position on her lap and taking the guitars, Adriana shook her head and said “they’re not Gretchen”

(her beloved Gretch semi-hollow body), but they would do since she didn't feel like driving across town or waiting another week to record the guitars. To mess with her and distract from the melancholy situation or vibe killer, as I have done with other clients from time to time, I opened the amp modeler up on the most heavy metal distorted patch I could find to greet her first chord. With a jump, a laugh, and a playful glare from Adriana, I quickly jumped over to a classic Fender Twin Reverb[91] patch, which is a favorite amp of many clients to start dialing in a sound. After we punched (recording in small sections) through the main take and the double to stereo pan, it was time to record vocals. Since we were just going to pipe the existing midi data, Adriana laid down at home for the bass through my Moog Matriarch analog synthesizer to produce the final tone.

Firstly, I would like to briefly put this example under the lens of Csikszentmihalyi's notion of "flow" and how the situation is being amplified by the comfort and relaxed nature of a home environment. Csikszentmihalyi describes "flow" as a "process of total involvement".[92] Due to literally living in my studio, working within it is to the point of muscle memory, I believe this to be a process that I would also define as total involvement. Csikszentmihalyi also puts significance on a sub-concept within flow he calls "optimal experience".[93] What this ultimately translates to is that through dedication and perseverance, experiences both good and bad, compound to give a sense of mastery in a

[91] An iconic guitar amplifier; first produced by Fender in 1963.

[92] Csikszentmihalyi, *Flow*, 205.

[93] Ibid, 3.

particular domain. This yields the ability to better control situations and manipulate them to be optimal experiences. Because of this, I am able to quickly shift gears in response to technical issues and in the case of working through Adriana's discontent for not having her guitar "Gretchen", utilize the gear in the studio to keep a fun and positive workflow present. Through the familiarity and comfort of working in my own home, I believe I was more easily able to enter a flow state and instantly adapt in response to Adriana's disheartened and longing state for her own guitar. This stress on the importance of a state of "flow" and its ability to positively impact resilience in musical performance can also be seen highlighted in the work of Alice Chirico, Silvia Serino, Pietro Cipresso, Andrea Gaggioli, and Giuseppe Riva titled "When Music 'Flows': State and Trait in Musical Performance, Composition and Listening: A Systematic Review." (2015).[94] From this "flow" state I was able to utilize the informal aspect of the environment and spatial control, also harnessing Beagle's philosophy of "hijinx" to draw in an unexpected outside element.[95] In this case the crazy distorted metal guitar tone made my client laugh and drew attention away from the point of contention on the micro level and back to the project as a whole on the macro level.

An example from Beagle's own work that I believe corroborates my argument for the utility of an approach rooted in "hijinx" is from the skateboard

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[94] Alice Chirico, et al., "When Music 'Flows': State and Trait in Musical Performance, Composition and Listening: A Systematic Review," *Frontiers in Psychology* 6 (2015), 906.

[95] Csikszentmihalyi, *Flow*, 205.

film *Baker has a Deathwish* from 2008.[96] In this film there are a multitude of examples of Beagle pulling in elements from the periphery of the frame other than the primary point of focus to enhance the overall atmosphere of the moment. In one case, this involves the editing of transition shots before pro skater Dustin Dollin's part.[97] During this roughly one minute of the film there is little to no skateboarding on display; but rather, a montage of weird and outlandish moments caught on film. These moments include, the skaters acting silly, random people on the street drinking and acting rowdy, all timed to a lo-fi chopped and screwed[98] hip hop beat. In fact, the only skateboarding in this section at all is a random person skateboarding down the shoulder of a highway, flipping off everyone in traffic. I argue that moments like this in the film are equally important to the skateboard tricks that are displayed, in that they both contribute to the overall aesthetic and again, vibe of the project as a whole. More importantly, I believe this grounds my argument in that similar to the example of messing with Adriana with the metal guitar tone. Through the friend like informality of the home environment moments like this that subvert the focus of performance not only enhance the project, they also carry the potential to take pressure off of the performer, even if only for a moment and strengthen bonds through platonic intimacy. A similar argument for the importance of this type of

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[96] Baker Skateboards, *Baker has a Deathwish* (2008). https://www.youtube.com/watch?v=y-pBLQjMAoE&t=2046s

[97] Dustin Dolin's part: 27:49-28:44.

[98] A hip hop beat that is slowed down and rhythmically edited from original; origins in Huston, Texas.

collaborative relationship building is put forth by Jill Perry-Smith's in her work "Social Yet Creative" (2006).[99] In this work, Perry-Smith addresses the potential benefits of relationships on an artist's own sense of individual creativity.[100] Applying this notion to the relationship between Adriana and myself, our collaborative sessions would similarly lead to Adriana to return her bedroom demo studio with fresh inspiration to artistically unpack individually.

Since Adriana is a classically trained singer who likes her vocals to shine on top of her songs in regards to clarity, it is imperative to find a microphone setup that makes her feel like what she is hearing sounds how she wants her voice to be represented. As an engineer, this concept of sounding like one's self can be hard to unpack, as it can refer to musical qualities such as timbre or pitch. It can also be in reference to metaphysical characteristics such as the artist's own idea of how their identity should be represented through sound. I believe this is where all of the relational legwork, such as hanging out with Adriana off the clock in my home pays off. These moments in this environment provide a safe and judgement-free atmosphere, and in turn, a platform for which to experiment and better understand themselves what the statement "sounds like me" means. While I can and do establish relationships with clients solely working in a commercial studio environment, it is through my numerous experiences at home that I have observed that the process is greatly expedited by the lax nature or

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[99] Jill E. Perry-Smith, "Social Yet Creative: The Role of Social Relationships in Facilitating Individual Creativity," *Academy of Management Journal* 49, no. 1 (2006), 86-101.

[100] Ibid, 86-89.

spatial intimacy of the environment. For instance, the first two autoethnographic examples were not on the clock or charged to the client as I, as the owner of the space, chose to invest my time into getting to better know the artist I am working with. Conversely, at Imirage Sound Labs I have to charge from the moment the client's guitar headstock pokes through the doorway till the moment the bridge slips back out. Not to say that this is a bad thing whatsoever, rather I believe it hammers in that the atmosphere – being a public business – carries with it all of the criteria societally associated to what is acceptable public behavior. What I argue instead, is the associated domestic privacy makes the experience of working in this environment closer to going over to a friend's house to hang out than working at a business.

Having finished our weekly musical mission, I stopped the clock and pressed play on our work so far. As we listened to the track that no one but us had heard, the recording session transitioned into a cooking lesson I would enjoyably struggle to understand. At 6pm Adriana and I bumped knuckles and parted ways till the next week. Not only had there been significant progress on Adriana's album, but with every session, every espresso, and through every laugh, the project was enhanced in a less tangible manner than audio. Ultimately I believe the home with its societally associated privacy provides a heightened level of implicated platonic intimacy (as opposed to public settings) which is ideal for music creation. The result of this inherent informality the home provides is a special vibe which is not only a unique project/album, but going further I believe that vibe can be interpreted as a strong working

relationship between artist and client as in the case of Adriana and myself. Additionally, this relational momentum will often carry significantly further than the scope of the original project leading to more work, more connections, and overall bigger professional networks for which to operate in. This is also implied by Corinna Peifer and Stefan Engeser's work *Advances in Flow Research* (2021), where the authors expand upon Csikszentmihalyi's notion of flow stating:

> "One main question that remains to be answered is whether flow in groups is merely the sum of flow experiences of the group members, because every member has aroused motives and individual flow experience crosses over from one to the other, or whether it is a collective phenomenon that is even greater than the sum of flow experiences, and which has different required structures for the situation itself." (Engeser and Peifer, 2021).[101]

This is the case with Adriana, as we are still in regular contact and supporting each other's careers whenever possible. To close this chapter, I am again not saying that there is any sort of superiority to home recording over recording in a commercial studio or vice versa, as these types of relationships are possible in both spaces. Rather, I hope that I have highlighted that they are two different entities with different attributes that have equal potential for the artists that choose to use them. Further, as chapter one highlighted with Ray Silva's interview, I believe the deciding factor comes down to the artist's idiosyncratic needs, often resulting in the overlapping use of both spaces on one project.[102]

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[101] Corinna Peifer and Stefan Engeser, *Advances in Flow Research* (Springer, 2021), 120.

[102] Silva, Interview.

Chapter 3 - Pure Imagination: A Liminal Space for Safe Expression

For clients/artists who are dealing with sensitive issues in their music, unpacking and working these concepts out in public can be a daunting line to cross. Where the examples in the first chapter served to highlight the benefits of spatial intimacy and informality when working in a home environment, this chapter uses its autoethnographic vignettes to highlight the benefits of the engineer's spatial control over their home environment. Specifically, what my research and time as an audio engineer has shown, is that through greater control of the happenings within one's home, and by proxy the professional home studio, the engineer has the ability to create a sort of liminal space between the thresholds of society and solitude. As this set of autoethnographic vignettes show, the home studio carries the ability through the engineer's control and subsequent decisions, to suspend reality and the outside world to navigate around situations both technical and social.

This resonates with both Mientjes work on the social possibilities of the studio within the highly racialized context of South Africa and in Alex E. Chavez's book *Sounds of Crossing: Music, Migration, and the Aural Poetics of Huapango* (2017).[103] In this work Chavez addresses the pressure felt by many immigrants to the United States to not express their born cultural heritage and trade it for Americanness when presenting themselves in public. However, it is in these immigrants' homes and communities that they are able to utilize spatial control to

[103] Alex E. Chávez, *Sounds of Crossing: Music, Migration, and the Aural Poetics of Huapango Arribeño*. (Durham: Duke University Press, 2017), 1-6.

create a similar liminal space in between their born identity and the foreign one that is being pressured on them.[104] I argue that in these liminal spaces, where there is enhanced privacy and safety (in comparison to public spaces), professional relationships and friendships can quickly develop and the potential for concrete work and progress is amplified.

Working Through It

Trying not to tear up, I chimed in over the talk-back microphone to politely ask my client, Aren, if we could get one more pass punching through[105] the last lead vocal in one of his songs. The reason for my emotional reaction – apart from it being a very sad song in general – was due to having sat with Aren recording/building the song and as he figured out how to properly address the topic of this piece with his lyrics and voice. Not only had I heard him develop an introspective and emotional exploration of past family trauma developed into a cohesive and direct expression, but I had gone on that exploration with him. Through this experience and others throughout the album, Aren and I not only went from new acquaintances to great friends (to the point where he got me ordained to marry him and his girlfriend), but also significantly expanded each

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[104] Ibid, 25.

[105] A microphone used by the engineer to talk with musicians recording in other rooms for isolation purposes.

Punching refers to recording a bigger piece of music in small sections, as opposed to doing larger takes through the whole song.

other's professional networks. His social circle was now hiring me for projects, and my client circle was hiring Aren to play on their projects.

What I believe this example highlights is that through utilizing spatial control over the home environment, the engineer is able to mobilize the space as a tool to amplify or expediate bonding between artist and engineer, which I believe works in tandem with the spatial intimacy described in chapter one. First, as Aren and I sat together in my living room on the couch listening on a loop to the bones[106] of the song we had recorded, the level of reciprocity and collaboration on the project deepened. In Sandra Garrido, Felicity A. Baker, Jane W. Davidson, Grace Moore, and Steve Wasserman's article "Music and Trauma" (2015),[107] the authors argue for the positive effects of using music as a way to unpack and work through trauma similar to the lyrical themes Aren was addressing. Specifically the authors state "As noted in the studies cited above and others, music, and music therapy researchers argue that the benefits of musical activities include: mood improvement, self-expression, catharsis, community building, stress reduction, and more. As with compositional forms of music therapy, those involved in writing groups have reported that the process of writing about their trauma allows them to regain their agency, to tell their own

[106] A loop refers to a section of audio being played repeatedly.

The bones of a track refer to the core instruments, usually a rhythm section; drums, bass, and sometimes guitar or piano.

[107] Sandra Garrido, et al., "Music and Trauma: The Relationship between Music, Personality, and Coping Style," *Frontiers in Psychology* 6 (2015), 1-3.

stories".[108] An example of this can be seen with Aren bouncing lyrics off of me, instead of being written in stone and Aren just asking me to record them. Aren instead wanted my opinion on them and welcomed any suggestions I might have on them. The two-way street that Aren paved by asking for my input on shaping his art, pulverized any sort of wall of creative obstruction that might have been there before. Further, I believe this to be made possible by the home engineer's spatial control within their home studio to augment and shape the environment to encourage and nourish relational growth. This can be seen similarly in brown's stance on the importance of relationship building and creating a strong social network for which to operate in.[109] However, instead of using those relationships/networks to champion an avenue of activism, Aren and I were mobilizing it to enhance the album on a macro level from the micro level.

Another moment from brown's own work that I believe substantiates this analysis is her creation of the phrase "work soulmateship".[110] This phrase resonated with me as an engineer reflecting on clients like Aren and Adriana. While the album is the short-term point of focus, the amount of emotional growth that happens throughout and the network that is strengthened through the creation process carries much more momentum beyond the album. This translates into one another looking out for each other and going out of the way to advance each other's careers. An instance of this can be seen from Aren in that

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[108] Ibid, 2.

[109] brown, *Emergent Strategy*, 17.

[110] Ibid, 17.

– at the time of writing – he got me hired as the associate music director for the University of Nevada, Reno's production of the musical Cabaret. This has nothing to do with the home studio environment directly; however, the reason it was a possibility at all is from the relationship that was born and fostered working in this environment. Similarly, brown describes her professional network as family-like which has been created through the sharing of resources and simply having conversations as collective learning happens, describing herself as "a nomad who also feels rooted here because of this network".[111] As an engineer whose clients are everything to them both professionally and personally, I must concur with brown in that statement.

So Many Singers, So Little Space

Recording a vocal quintet in a small commercial studio such as Imirage Sound Lab where I also work, can be a tricky feat due to the need for isolation, and also keeping a natural sense for singers used to singing in an ensemble in the same room. However, doing it in a one bedroom apartment with high energy musical theatre singers is – as Aren's album taught me – a much more difficult affair. One singer in the bathroom, one singer in the bedroom, one singer in the hallway, and one in the kitchen; everybody in headphones, including Aren and I as to not bleed into microphones monitoring the session across my open floor planned living room and kitchen area. At the surface, this is a hindrance of the

[111] Ibid, 17.

limitation of the space in which my home studio is built. Additionally, through having total spatial control I am able to manipulate the environment and surroundings to work through the limitation and around the technical hindrance.

Getting through situations as described in this example with the singers and keeping a good work-flow can be hard, especially when having to fix one bug[112] after another. The engineer is often putting out technical fires like someone not getting sound to one side of a headphone, a weird crackle in one of my mic signals, or a neighbor seemingly dropping bowling balls upstairs. Doing all this while keeping the morale of the performers up to give good performances can, at times, seem impossible. However, I believe using Csikszentmihalyi's concept of entering a "flow" state to unpack this example reveals that the home environment amplifies an engineer's control of their home environment to manipulate the space to their favor. Additionally – with the group of singers that are also enduring this session in mind – Keith Sawyers' takes Csikszentmihalyi's concept a step further by introducing it as a social state of flow rather than a singular affair as originally presented in his work *Group Genius: The Creative Power of Collaboration* (2017).[113] In this work Sowers discusses the potential for a group to collectively enter a flow state similar to the group of singers, Aren, and myself in the example he states:

> "My research has shown that only certain kinds of collaboration work in the real world – improvisations that are guided and planned, but in a way that doesn't kill the power of improvisation to generate unexpected

[112] A bug is a technical mishap within a system.

[113] Keith R. Sawyer, *Group Genius: The Creative Power of Collaboration*. (New York: Basic Books, 2017), 114.

> insights. Fortunately, today's research tells us how to foster that kind of teamwork. For example, I show that improved innovation is more likely to work when a group experiences group flow – the group equivalent of Mihaly Csikszentmihalyi's famous "flow" state, when we perform at our peak and lose track of time" (Sawyer, 2017).[114]

Not only did everyone on the session have to individually improvise around the technical bugs, I would argue that the improvisation of one builds upon that of another to create a collective sense of "flow". This notion of collective potential of collaborative groups can also be seen highlighted in the work of Donald Glowinski, Fabrizio Bracco, Carlo Chiorri, and Didier Grandjean titled *Music Ensemble as a Resilient System* (2016).[115] In this work, the authors also highlight that the resiliency of an ensemble can be strengthened through embracing the unexpected, a perspective that resonates with how Beagle mobilizes the notion of "hijinx". Additionally, the home space with its informality – as discussed in Chapter 1 – provides a very comfortable and relaxed environment to allow for the flow state to be more easily entered as opposed to a more formal public space. For example, while I feel quite confident in my workflow at Imirage Sound Labs, as in the example with Adriana's guitar, there is a deeper level of muscle memory and mastery to process working at home as the space is where I sleep, I eat, and spend much of my free time existing in. In a sense, it is a total submersion within the environment. I believe this distinction is a major contributor to the home space encouraging the entry of a state of "flow" for an engineer working in this

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[114] Ibid, 114.

[115] Donald Glowinski, et al., "Music Ensemble as a Resilient System: Managing the Unexpected through Group Interaction," *Frontiers in Psychology* 7 (2016), 1548.

environment. Moreover, when Sowers speaks of "unexpected insights"[116] being a significant result of entering a "flow" state, I believe this to be highly similar to how I have framed "hijinx" in this work, just under another name. For instance, looking at how my primary theories are interlinked, I believe the state of flow and ability to improvise producing these unexpected insights is no different than Beagle's adapting of peripheral elements to create a unique element to the project. This data illuminates my argument of the theoretical overlap in these examples and clearly illustrates the transfer from flow to "hijinx" in the example. A similar focus on the importance of environmental elements such as spatial intimacy and control can be seen addressed in *Robert Gifford's* work *Environmental Psychology Matters* (2014).[117] For example, in this work Gifford states, "Environmental psychologists continue to investigate fundamental psychological processes such as environmental perception, spatial cognition, social space, human development, and personality as they filter and structure interactions with the environment.".[118] Additionally, when analyzed under these criteria, an understanding for why the home serves as a phenomenal platform for recording and producing music and why engineers and artists might choose to work in these spaces becomes visible.

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[116] Sawyers, *Group Genius*, 114.

[117] Robert Gifford, "Environmental Psychology Matters," *Annual Review of Psychology* 65 (2014), 541-579.

[118] Ibid, 545

I would like to again return to my interview with Ray Silva to make a connection, particularly to where he discussed that in home studios compromises must be made, as I believe this to be an important point of this autoethnographic example. Particularly, I want to address the bonding of everyone involved on the session by working through these compromises. As described, the process of recording the aforementioned vocal ensemble would still be tricky at even a small commercial studio like Imirage Sound Lab. However, at least everything in the building is built to work in the engineer's favor, overall being a less technically daunting task than doing it in a one-bedroom apartment. While this is the case, I have shown how the benefits of spatial control in a home environment which allow the engineer to manipulate the environment to atmosphere can outweigh compromises that have to be made.[119] Not only did my comfort working in the environment allow me as an engineer through spatial control to utilize flow to work through any technical problems as described, it also aided in my ability to use the space to mold the somewhat chaotic setup into an exciting ambiance for the performers. For example, I was able to utilize my smart lights to color the apartment more along the lines of a nightclub, let the performers interact with my miniature dachshund MoMo, and ultimately disguise a recording session as a party. Technical compromises were being out-shown due to the home engineer having complete control over their space and being able to just flow.

[119] Silva, Interview.

Ultimately, through total control of the space to make the performers have an optimal and memorable experience, this also shows that this example interfaces with themes from both “emergent strategy” and “hijinx”. Additionally, I believe the theories can be used to interpret the examples in an overlapping fashion with brown’s focus on relational importance being a big safety net that runs throughout the examples. For example, the comfort of the engineer in their home turf allows them to more easily enter a flow state and work through adversity. The environmental control “flow” highlights in being able to work through adversity can then be interpreted as ‘hijinx”, which fixates on moments separate from the primary point of focus that when leaned into carry the potential to create a unique quality enhancing the final product as a whole. Throughout all of this, brown’s notion of “emergent strategy” acts as a cushy ball pit for “flow” and “hijinx” to land in, as relationships were deepened through the collective experience of the process as a whole. For example, having shown the singers and Aren that I had a professional level of engineering chops[120] to work through the bugs, the bugs became less of a headache-inducing nuisance for everyone and more of a quirky instance that could be harnessed or exploited to bring everyone in the room closer together through having collectively experienced it. A similar concept of embracing and reinterpreting positivity in imperfection is also highlighted in Robert Walser’s work “Out of Notes’: Signification, Interpretation, and the Problem of Miles Davis” (1993).[121] In this work, Walser proposes that

[120] Chops refer to technical ability in a given musical area.

Mile's imperfections in playing such as missed notes can be instead interpreted as signifying his artistic freedom.[122] I argue this notion of positive interpretation of imperfection not only resonates with the session between Aren, the singers, and myself, but is another method for further understanding why artists and engineers choose to work in these spaces even when having to make compromises to do so.

Steam Snare

The snare from the drum machine wasn't vibing to either Aren or myself. We'd tried using a myriad of different drum machines, real snares, and various cymbals, but nothing really seemed to fit over the sweeping synthesizers, Aren's soft yet stern vocal delivery, and dark lyrical content mixed with vocal samples from home recordings of Aren's childhood. The song needed a pillowy sustain that no drum or cymbal I had heard up till that point make; however, I did have an idea based on Aren's description of wanting something like a fluffy cloud. Instead of a cloud, I would use steam. Leaping up I proceeded to set up one of my large diaphragm Neumann U87 condenser microphones in my kitchen (weirdly not the first, second, or third, time I had done that for this album), and began getting an old frying pan screaming hot. Dropping Protools into record with an oven mitt on, I ran back to the kitchen, wrenched the pan from the stove, plunged it under a stream of cold water, and quickly pulled it back, letting the water sizzle around

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[121] Robert Walser, "Out of Notes': Signification, Interpretation, and the Problem of Miles Davis," *Jazz Among the Discourses* 77, no. 2 (1993), 343-365.

[122] Ibid, 357.

the pan as I maneuvered it around the microphone for different timbres while carefully avoiding any direct contact between the steam and the microphone's diaphragm.

Using themes from Beagle's notion of "hijinx" to unpack this studio example with Aren, clearly highlights the benefits of spatial control. This is due to the way in which both myself and Beagle mobilize the elements within the peripheries of the environment. In this case, the spatial control being the ability to influence small outside-of-the-box moments where the point of focus is subverted to capture and impart a unique characteristic that greatly adds to the project as a whole. Rather than just accepting a snare that sounded passable, I as an engineer (like Beagle), searched the peripheries of point of focus to utilize and control the space to work in a positive manner. In this example, I was able to pull in just the right pizzazz or "hijinx" to tie the point of focus together and impart a unique quality to it. Taking this example a step further, it represents another case of the home excelling as a space for creating music via its domestic attributes. For example, the kitchen is not something present at Imirage Sound Labs. There is a microwave and mini fridge, but no stove, no pots/pans, and it would be risky to use the studio's gear that isn't my own. The latter of those criteria also being a unique quality of the home in that I have total discretion over what the rules of the space are. While putting the steam next to the microphone with Imirage Sound Lab's gear is very much a big no, at home, I can take that risk and treat the space as its own plane of operating. The space is not quite a business and not quite a home, but something in between, even if for just the short period of the

session. These benefits of having full control of the space have even further positive attributes, as I can adapt the space's rules to the individual artist in any given moment if need be..

Similarly this use of spatial control to create subject divergence through utilizing elements within the environment can be seen in Beagle's work on skateboard company Shakejunt's *Chicken Bone Nowison* skate video.[123] While there are extremely impressive skateboard tricks in this film – like in the previously mentioned video *Baker Has a Deathwish* – it is the moments between the tricks that make the film stand out from others. Take for example, the first 5 minutes of the film before professional skateboarder Neen Williams' official part[124] begins. There are clips edited in with Beagle and the team partying, landing incredible tricks, cooking chicken in a kitchen, and just generally acting goofy. This spontaneous and entertaining filler of sorts is what I believe to be the essence of Beagle's "hijinx", functioning to add a further nuanced depth to the overall work. In this case, it highlights the strong familial-like bonds between the skaters on the team. Similarly, through the capturing of steam to be used as a snare on Aren's album, not only did the spontaneity add a level of complexity to the timbral depth of the piece, but it also – like the Baker team – strengthened my musical relationship with Aren, moving forward through the rest of the project. I believe this idea is also supported by the research of Josh Mcdermott and Marc

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[123] Shakejunt, *Chicken Bone Nowison*, (2011). https://www.youtube.com/watch?v=hAteEDBrKM8

[124] A part is a section of a video dedicated to highlighting a specific skater; usually each member on a team will get a full part

Hauser in their article “The Origins of Music: Innateness, Uniqueness, and Evolution*”* (2005).[125] In this article, the authors speak to the importance of reflection of society and “general purpose mechanisms”[126] that create a uniqueness to music which is similar to the uniqueness brought in by similar peripheral elements in both Beagle’s work and in the example with Aren. One of the ways in which the authors show this is through highlighting that different cultural factors have informed different systems of music theory and different ideas of tonic. In a sense not only do these peripheral or secondary cultural factors impart a uniqueness to music created within their boundaries, but they also carry the potential to create a uniqueness of different respective fundamental building blocks within music. Specifically, the authors state, “Tonal hierarchies are culture-specific in that different cultures use different scales (sets of pitches/intervals chosen within an octave) but have been demonstrated in Western and non-Western cultures alike. The formation of tonal hierarchies likely involves the acquisition of culture-specific musical parameters, perhaps modulating innate principles as is thought to occur in language acquisition”.[127] Considering this, I believe this imparting of a unique vibe as a product to be further evidence for why the home is chosen as a desired environment for music production by both engineers and artists.

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[125] Marc Hauser and Josh McDermott, “The Origins of Music: Innateness, Uniqueness, and Evolution,” *Music Perception: An Interdisciplinary Journal* 23, no. 1 (2005), 29-59

[126] Ibid, 29.

[127] Ibid, 38.

This type of musical "hijinx" can also be seen employed by renowned audio engineer Sylvia Massey, who has worked with a multitude of top industry artists such as Tool, System of a Down, Red Hot Chili Peppers, and Johnny Cash. Massey discusses an instance of this in her book *Recording Unhinged: Creative and Unconventional Music Recording Techniques* (2016).[128] If a vocalist she is recording is having a problem with getting a particular line and getting flustered Massey will ask the singer to perform a myriad of other tasks besides the vocal like standing on one leg or pretending to drive a vehicle and then have to simultaneously sing the line. Ultimately, Massey employs this technique to break the singer's block by an out-of-left-field distraction and they can perform the line.[129] Massey also presents the story of singer Peter Gabriel not being able to perform a particular take with the proper intensity and in turn was duck taped upside down high up on a beam in the studio and then sang the line from there.[130] What I believe Massey and other outside-of-the-box engineers' tactics do (similarly to the steam snare on Aren's album and Beagle's notion of "hijinx"), is capitalize on peripheral elements around the point of focus to impart a unique quality to the project through subject diversion. Additionally, the home uniquely served as a platform to greatly improve not just the song through outside of the

[128] Sylvia Massy and Chris Johnson, *Recording Unhinged: Creative and Unconventional Music Recording Techniques* (Milwaukee: Hal Leonard Books, 2016), 1-2.

[129] Ibid, 59.

[130] Ibid, 61.

box thinking, but also to deepen my trust and working relationship with Aren through the experience.

Throughout all of the examples with Aren in this chapter each stream of theoretical unpacking shows how beneficial the heightened level of total spatial control that the engineer has can be for both the project and artist/engineer relationships. Combining this with their familiarity through being able to literally live within the space, allows the engineer to create an atmosphere that is meticulously suited for both the artist and the engineer. The level to which this spatial control caps also has no real limit in certain cases, as is seen with David Coverdale's professional home studio for Whitesnake, Hook City. And while I can't participate in destructive renovation like punching a hole in the wall between my living room and bedroom to make an observation window, I would argue that my examples show that any little taste of this total spatial control pays in dividends to the experience of both the artist and engineer, and ultimately the quality of the art being produced.

Conclusion

As I begin to wrap this work up, I would like to further drive home and highlight the interconnectivity throughout Chapter 1, 2, and 3. I would argue that these vignettes which I have presented have a constant theoretical stream running throughout. This stream is a key concept of brown's theory which is the importance of relationships, and in the case of this work, how highly effective the

home as a platform for creating music is at fostering and strengthening those relationships at any given moment. As brown states herself, “there are examples of emergence everywhere”.[131] This concept of ever-present potential for growth via social interaction is even further supported by the work of Martin Clayton, Richard Middleton, Trevor Herbert, and Georgina Born titled, *What's Going On Music* (2012).[132] Each example I have presented through chapters two and three exemplify the importance of investing into professional relationships and creating strong collaborative bonds. While I use other examples to use other avenues of theoretical approach to highlight a positive characteristic of the home environment, it is this fixation on person-to-person connection that I believe give the clearest and most accurate view into why the home truly excels as a platform for recording music, and further why so many artists and engineers choose to work in these environments, contributing to their continued growth in popularity. The result at the end of this equation of these compounding positive attributes to the home environment is the ability to create a unique vibe on the project and the growth of a mutually supportive professional network/community. For the artist and engineer, a bond of trust and mutual respect has been forged along the way, being encouraged in every step of the journey by the home environment. Additionally, with developments in audio technology allowing for high-quality recording to be done relatively accessibly, I ultimately argue that “vibe” rises

[131] brown. *Emergent Strategy*, 10.

[132] Clayton, et al. *What's Going On Music, Psychology, and Ecological Theory* (New York: Routledge Taylor & Francis Group, 2012), 333-42.

above all in home recording studios. The primary job of recording audio becomes secondary to uniqueness. In a sense, as long as the art is going to sound good because of a baseline of technology and skill, it is the “vibe” which is created through a collection of peripheral moments and collective experiences. The lax familial home environment nourishes this “vibe”, and can make the project unique.

Throughout this work, I have presented technical background as an answer to “how” professional home recording studios have seen a rise in emergence in recent years, and autoethnographic accounts and interviews covering real studio interactions which exemplify the home environment’s positive attributes. These include the cultivation of platonic intimacy through domestic privacy and the total environmental control that the home studio’s operator has, contributing to the growth in popularity of such spaces by both engineers and artists alike. The importance of relationships and forming a productive ecosystem of trust in the studio has been a constant narrative throughout both the vignettes I have presented, but also in the words of top industry professionals in my interviews and the academic support from the scholars whose work I have referenced. Additionally, I have also shown throughout the work that through the level of control creating a studio in one’s own home yields, an engineer can manipulate the environment to not only work around the home’s limitations and compromises but go a step further, leaning into them to create a unique vibe to the project as a whole. It is because of this

that I, as both a researcher and operator of professional home recording studios, am excited to see how these unique spaces continue to evolve and gain respect from both engineers and artists within the landscape of the music industry.

Overall, the widespread emergence of professional home recording studios in the industry landscape shows these domestically based operations are here to stay. Not only that, as my research and career thus far have shown, they are also more than capable of producing high-quality music while having an edge through spatial intimacy and spatial control that most engineers working in commercial recording studios may not as easily attain by default. However, I would like to close by addressing the benefits of having access to both spaces and would argue that the relationship between the two is not an either-or scenario, but rather each space has respective differing benefits for different musical situations and recording applications to the benefit of engineer and artist.

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