"I LIKE THE SOUND OF THAT," A LISTENER'S LOOK AT THE ART OF RECORD PRODUCTION

By William A. Klatt

1. Tonight, I want to share with you a topic that is related to one my great loves in life–the love of music. When I say I love music, I mean that I really love music. Although I have very modest musical talent, and limited practice time, I play a little piano, guitar, banjo, and a few other instruments. I always tell people that what I lack in talent, I make up for with enthusiasm. I suspect like many of you in this room, I particularly love listening to recorded music. I have loved listening to recorded music, "records," for as long as I can remember. My favorite toy as a child was my little 78 rpm record player that had a stone-like turntable. It played small, mostly red and yellow colored records, that were practically indestructible, even when tossed like frisbees. In fact, I still have most of those records from my early childhood. Again, like many of you in this room, I later had a collection of 45s, albums, cassette tapes, hundreds of CDs and finally recorded music in digital form downloaded to my computer, Iphone, MP3 player, Ipod, and Ipad, which brings me to the topic of my essay. The teaser title is "I Like the Sound of That." The full title is "I Like the Sound of That, a Listener's Look at the Art of Record Production."

2. If asked, I'm sure that most of us could identify our favorite records, either by the song or by the artist. It might be Frank Sinatra's "New York, New York," Elvis's Heartbreak Hotel, The Beatles, "All My Lovin," or Tom Petty's "American Girl." Or perhaps your favorite may be a more contemporary band or artist like

Nora Jones, Snoop Dog, the Decemberists or Adelle. However, other than recognizing that we like an individual song and artist, most of us give very little thought, if any, to what actually went into producing the sound we like on the record. We assume the artist and accompanying musicians simply went into the studio and performed the song and the resulting music is recorded and made into a record. In fact, it is rarely that simple. Although there are multiple people involved in creating the music that you hear on a record, including the performing artist, songwriter, arranger, recording engineers, mixing engineers, and mastering engineers, I want to examine the art of record production through the lens of the music producer. The music producer oversees all the creative and technical components of making a record, and has the ultimate responsibility for the sound that ends up on the record. In fact, in certain genres of music, like pop, R & B and Hip Hop, the producer often has the dominate role in crafting the sound that ends up on the record. In addition, today's digital technology has in many respects eliminated most of the barriers, including vocal and instrumental proficiency, that used to limit what a recording artist and producer could do.

3. Despite being a lifelong avid music listener and amateur musician, I knew very little about the role of the music producer or how technology has come to play such a significant role in the process of creating recorded music. In fact, technology has greatly elevated the role of the music producer in making records. Music producers, who were formally anonymous backroom studio geeks working for modest pay as employees of record companies, are now highly compensated

independent contractors who are often revered like the artists with whom they work.

4. Now, why is knowledge about how records are made and the role of the music producer relevant to you as a listener? Well, it may not be relevant. After all, music is just entertainment. There is no right or wrong way to listen to music. But, there is an opportunity to listen to music in a different way. Perhaps, a better understanding of record making, the role of the music producer, and the technological and artist palette available to the producer, will allow you to be a more engaged listener–a listener who is more able to identify and appreciate why you like or don't like a piece of recorded music. With knowledge, comes engagement and with engagement comes appreciation and perhaps, a deeper enjoyment. Moreover, music presents the listener with the opportunity to open ourselves to feelings and emotions and to reach a part of ourselves not always easily accessed–a part that is deep within our character as human beings. Music is, after all, food for the soul.

5. Now, you can't talk about the art of record production and the role of the music producer without playing some music. I'm going to play a short clip from a song that reached number one on the Billboard Hot One Hundred in 1993. I particularly want you to listen closely to the instrumentation supporting the vocal performance.

- **[Play clip from "Hero" by Mariah Carey]**

- **ranked 53 on the 1990s decade end chart**
- **reflects a 1990s digital production style**

- **remains as one of Carey's most performed songs, some say her signature song**
- **reflects a 1990s production sound**

6. The title of this song is "Hero." Can anyone identify the artist? This song was a hit for Mariah Carey. It became the second single from her album "Musicbox," which was released in 1993. Hero was produced by Walter Afanasieff. It might surprise most of you that Walter Afanasieff not only produced the song, he wrote it and played all the instrumental parts. Describing his production style, Afanasieff stated "I like to do everything. I'll create the rhythm, the drum parts, the baselines, the keyboard parts, the string arrangements, the horn arrangements, and the vocal arrangements." When I say he played all the instrumental parts, I am referring the fact that he "played" everything on a computer, using a keyboard or a mouse as the controller. The computer generated all the instrumental sounds. Mariah Carey is a very talented singer, but it is also distinctly possible that what we hear on the recording was not actually one continuous vocal performance, but rather, a compilation of the best parts of multiple recorded vocal performances, pieced together by the music producer using a computer. If this song were recorded with today's digital technology, any tonal or rhythmic imperfection in either computer-generated or actual instrumental or vocal performances, could be easily "fixed" or altered with a digital audio workstation–a computer. I played this song to illustrate how technology has given the music producer a palette of options that can significantly impact what we hear on the record.

7. So what is a music producer and what do they do. Simply stated, a music producer oversees and usually actively directs the recording or production of a music project. That responsibility can encompass many different roles depending on the nature of the project, the genre of music, the relationship the producer has with the artist, and the demands of the record company. Before the term "music producer" existed, that role was performed by what were known as A & R men– artist and repertoire. A & R men would find and sign the artist, select songs, and manage the recording process to create a record that hopefully had commercial value. Because of the creative impact that music producers can have on a music project, their work can be characterized as an art form, in and of itself. That has certainly been the case since the mid-1950s. Successful music producers have historically had an innate ability to recognize and motivate talent, to select strong songs, and to help the artist arrange, orchestrate, and record a performance that will resonate with the listening public. The effective use of available technology has long been an important part of that creative process. But in the last 15 or 20 years, digital technology has given music producers an even greater array of new performance, recording, editing, and creative possibilities that has significantly impacted the art form.

8. To more fully understand and appreciate the role of the music producer and the art of record making today, it is helpful to briefly examine the history of record production, and particularly the impact that evolving technology has had in elevating the music producer's role in the creative process of making a record.

9. The birth of recorded music was Thomas Edison's invention of the phonograph in 1878. The phonograph was a mechanical device that made an acoustical recording of a live performance directly to a recording medium. A large cone would channel sound waves generated by the sound source towards a diaphragm located at the apex of the cone. A cutting stylist connected to the diaphragm etched grooves in the recording medium corresponding to the sound vibrations from the diaphragm. Edison's phonograph utilized a cylinder covered with an impressionable material such as tin foil or paraffin as the recording medium on which the stylist etched grooves. The depth of the grooves corresponded to changes in the sound waves. The sound was recreated when the stylist retraced the etched grooves and the resulting vibrations were amplified through a mechanical process back through a cone.

- **[Play "Pattison Waltz" 1889]**

- **performed by Effie Stewart Vocals**
- **Theo Wangemann on Piano Recorded on Edison Yellow Paraffin Cylinder at the Edison Labatory, West Orange, New Jersey, February 25, 1889**

10. From a commercial standpoint, Edison's phonograph was greatly improved when Emile Berliner patented the gramophone in 1887. The gramophone imprinted grooves on the flat side of a disc rather than on the outside of a cylinder. Instead of etching grooves of varying depths vertically on a cylinder, the gramophone etched grooves horizontally across the width of the disc. This disc soon became known in the U.S. as a phonograph record. Within 12 years after Edison's invention, commercial recordings would be made available to the public,

marking the beginning of the recording industry. Both phonograph cylinders and gramophone discs were played on mechanical devices that were hand wound with clockwork like mechanisms.

11. Although both phonograph cylinders and gramophones discs were commercially available at the turn of the 20th century, the disc format ultimately won out. Overtime, manufacturing processes improved and records became less expensive. A direct molding process was used to press the grooved image of the master disc onto a plate of shellac, creating the "record." Of course, vinyl would later be used instead of shellac.

12. The process for recording a musical performance was straightforward. The artists would crowd around the wide-end of a cone and play and/or sing into the cone. Balance in the performance was achieved by positioning the performers and by the performers own sense of dynamic balance. The goal of the recording was to capture the natural acoustic balance of the live performance.

13. Much of the early technological focus was on improving the fidelity of the recording medium.

- **["The Girl I Should Have Married Long Ago"]**
- **recorded November 20, 1901**
- **Harry Macdonough, Victor Talking Machine Company**
- **picture the performer standing in front of a big cone with the piano in the background**
- **Although the sound is somewhat clearer, note how little of the low and high sound frequencies are captured in this early recording**

14. The sound quality of recorded music took a big step forward in the mid 1920s with the adoption of electrical recording by the major recording labels. Electrical recording made possible the use of microphones to better capture the sound of a performance. A microphone was used to convert the sound into an electrical signal that was amplified and used to actuate the recording stylist. This innovation eliminated the horn sound resonances characteristic of the acoustical process and produced cleaner and more full bodied recordings by greatly extending the range of audio frequencies. Electrical recording also allowed previously unrecordable softer sounds to be captured. However, a live performance was still cut directly to a master disc. Therefore, if a performer made a serious mistake, the recording was ruined.

15. [Play "In the Mood"]

- **Glen Miller recorded August 1, 1939 in New York City, RCA Victor, Bluebird Division**
- **take note the sonic picture created by the performance**
- **attitude of the solo performances**
- **natural band sound**
- **changing dynamics**
- **greatly improved sound quality**
- **standing in front of the bandstand**

16. In the Mood topped the charts in 1940 and one year later was featured in the movie Sun Valley Serenade. It also made NPR's list of the 100 most important American musical works of the 20th century. In the Mood is just a great song.

17. It is important to remember that up until the early 1950s, the recording process itself focused on generating a representative recording of a live performance with the best fidelity possible. A performer, or performers, would

gather in one room and together, in real time, perform a well-rehearsed pre-existing song. The role of the music producer, at that time the A & R man, was to select the artist and song to be recorded, and to assume responsibility for the conduct the recording session. This would include the selection of the recording studio for its acoustic attributes, the selection and placement of microphones in the studio and the selection of the best recorded performances, assuming multiple complete performances were in fact recorded. However, the A & R man's artistic impact on the final recording was rather limited. Except for the substantial improvement in the fidelity of the recording, the role of the A & R man was not that much different from what it had been since the early 1900s. However, that began to change with the introduction of magnetic tape as the recording medium.

18. Magnetic tape, which was pioneered by the Germans in World War II, was the technology that expanded the artistic possibilities for recording music for both the performing artist, and the music producer. In fact, the use of magnetic tape as the recording medium was the real beginning of record production as we know it today, because it permitted what was first called "sound on sound" recording–now known as overdubbing Overdubbing made it possible to record one part of a performance and then play that recording back with another live performance to create a final integrated recording. The pioneer of this technique was Lester Pulfus–a man far better known today as Les Paul.

19. Les Paul was a highly gifted guitarist who provided guitar backing for many popular performing artists in the late 1940s and 1950s like Bing Crosby and Nat

King Cole. Les also had a high aptitude for sound engineering. In 1949 he designed the legendry Les Paul Gibson guitar, a model that is still made today and still bears his name. Les also made a huge contribution to recording technology when he modified an Apex 300 series tape recorder given to him by Bing Crosby to create a real capacity for multi-track recording. Thanks to Les, it was now possible to separately record different parts of a performance, at different times, and then play back the separate parts in one integrated performance as if they had been played all at the same time. For the first time, music recording could go beyond just the faithful recreation of a live performance.

20. Les Paul became a well-known performing artist in his own right, and he recorded a number of hits with his partner and future wife, Mary Ford, using this new overdubbing technique. He also invented a studio effect known as "tape delay," which created an echo effect that would thicken a vocal performance. Les utilized both overdubbing and tape delay in recording "How High the Moon" which occupied the number one position on American charts for 9 weeks in the spring of 1951.

- **[Play How High the Moon]**
- **notice that Les Paul is playing both the rhythm guitar and the guitar lead licks in the recording**
- **notice how the tape delay effect gave Mary Ford's voice a chorus-like effect.**

21. Les Paul also used overdubbing in recording vocals. On their hit "Tennessee Waltz," Mary Ford sang both the melody and harmony parts. When other recording companies acquired the necessary recording equipment and began using

overdubbing, they at first attributed artistic credit rather oddly. For example, on the record "Confess," a hit for Patti Page, where she sang both the melody and harmony parts, Mercury Records listed the song as performed by Patti Page and Patti Page.

22. Along with overdubbing and tape delay, there soon came an array of new analog effects, a wide variety of amplifiers and electronic gear that gave artists and music producers a much wider palette for creating and recording sound. Relatively quickly, 4-track and then 8-track recording decks became available along with ever increasing sound generation, and sound modification, capabilities. By the mid-1960s, the recording studio had become a vehicle for artistic expression in and of itself–rather than just the vehicle for capturing the sound generated by a live performance. For example, the last 3 or 4 albums recorded by the Beatles could not be played live because so much of the sound on the records could only be produced in the studio. This was quite revolutionary for the time. In addition, a number of songs were actually written by John, Paul or George in the studio, as they were being recorded. With the explosion of studio technology, the music producer assumed a much larger role in the creative process of making a record. This technology also coincided with the birth of the baby boom generation and a following economic boom that generated great commercial opportunity. It began what many have called the golden age of record production.

23. A good early example of a music producer who had a huge artistic impact on the final product is Phil Spector. Spector is in a category of producers that Richard

Burgess in his book, The Art of Music Production, Theory and Practice, described as an "auteur producer." Auteur is the French word for author. An auteur producer is a producer who infuses his unique personal identity into the record production and who exercises a high degree of control over all aspects of the creative process and the final product. The auteur producer is the one with the artistic vision for the record. For these producers, the artist is the front person for the production. Putting aside his infamous notoriety due to his conviction for second degree murder in 2003, Spector is perhaps best known for his work from the early and mid 1960s with several so-called "girl groups," including the Ronettes and the Crystals. Spector also produced songs for Ike and Tina Turner, the Ramones, and the Righteous Brothers to name a few. He produced 25 top 40 hits from 1960 to 1965, writing or co-writing many of them. Rolling Stone magazine listed him as number 63 on its list of the 100 greatest musical artists of all time.

24. Spector is known for his use of a production technique that became known as the "wall of sound." Good examples of this production technique are the 1963 hits "Be My Baby" by the Ronettes and "Da Doo Ron Ron" by the Crystals. I'm going to play a clip from both songs and I want you to focus on the sound behind the vocals.

- **[Play clips from Be My Baby and Da Doo Ron Ron]**

25. You can understand why this background sound is described as a wall of sound. It reflects a layered, dense, almost symphonic sound that re-produced well on AM radio and juke boxes of the time. Spector's production technique was to

hire a select core group of top flight session musicians (later known as the "wrecking crew") who were often playing instruments not generally used for ensemble playing, including electric and acoustic guitars, playing orchestrated parts, often doubling or tripling many of the same parts, all playing in unison. Sometimes a pair of strings or horns would be double-tracked multiple times to sound like an entire string or horn section. Spector could gather as many as 35 musicians in a small recording studio at the same time, as he did in the recording of the Da Do Ron Ron, mic their joint live performance and route the amplified sound to an echo chamber. He would then mike the sound in the echo chamber and then route that sound back to the recording deck in the control room. Spector called this a "wagnerian" approach to rock and roll. Sometimes, the background sound would be so dense that is difficult to distinguish the instruments being played. Again, this is an artistic characteristic of Phil Spector records–a characteristic that other artists and producers have imitated including Brian Wilson of the Beach Boys in their renowned album Pet Sounds, and Bruce Springsteen in his Born to Run album.

26. In creating the Motown sound of the 1960s and 1970s, Barry Gordy is another good example of an auteur producer because of his identifiable production style, song writing, and artistic control over the final product. Like Spector, Gordy also used a select group of session players on most of the Motown recordings. Today, auteur producers create the majority of the hit songs in the pop, R & B, and Hip Hop genres of music. Moreover, many times, the only thing an auteur

producer requires of the artist is to sing or rap. The producer takes care of everything else.

27. But not all music producers see themselves as the dominant artistic influence on the record. Many see their role as facilitative or collaborative. These producers guide, influence, or bring clarity to the vision of the recording artists. They then employ production techniques that help bring that vision into fruition.

28. One of the best known and most admired music producers who employed a collaborated approach to his work is Sir George Martin. Martin produced the bulk of the Beatles recorded music. Often described as the "fifth Beatle," Martin made many artistic contributions to the Beatles arrangements and recorded music. In addition to the Beatles, Martin produced Jerry and the Pacemakers, America, and Jeff Beck. But, unlike a producer like Spector or Gordy, Martin did not impose his artistic vision on the artist.

29. Martin was a trained musician and arranger and was on staff at EMI when he signed the Beatles to a contract in the early 1960s. He was also at that time well aware of the potential for using the studio as a sonic workshop–a potential that became a realty for the Beatles by at least 1966. The Beatles were incredibly inquisitive about the recording process and its potential for creating unusual sounds. They were particularly interested in applying techniques in the studio that had not been previously used. The Beatles, with Martin's considerable assistance, were also one of the first rock and roll groups to introduce elements of popular standards and classical music into their rock and roll style. None of the Beatles

were trained musicians and they could not read or write music notation. Given his training and background, Martin played a crucial role in facilitating this fusion between rock and roll and elements of pop standards and classical music, which was quite novel in the mid-1960s. A good example of the merger of rock and roll and classical elements, as well as the application of studio effects, is the song "In My Life." In My Life is essentially a pop ballad. John Lennon had completed the song, but Martin felt it needed a 12-bar instrumental bridge between the verses. John suggested something that sounded like "Bach." Martin then wrote and played a baroque sounding passage on a harpsichord that became a key element of the record.

- **[Play "In My Life"]**
- **also notice the flange effect used to thicken John's voice**

30. There is something else interesting about this little instrumental passage. A couple of months ago, I was asked to play on a few songs with a friend's band who was performing a Beatles tribute night at the Refectory to celebrate the 50th anniversary of the Beatles first appearance on the Ed Sullivan Show. They wanted me to play the harpsichord break for In My Life on my keyboard. Although I play some keyboard, I am not a trained keyboardist. I was able to figure out how to play the part fairly quickly, but despite considerable effort on my part, I was not able to play the harpsichord part fast and smooth enough to keep with the tempo of the song. I then found out that George Martin couldn't play it that fast either. That

part was recorded at half speed, then sped up in the studio to match the tempo of the song.

31. Studio effects are not just limited to vocal and instrumental parts of a song. They are often used on bass and percussion. As casual listeners, we often do not fully appreciate how important the rhythm section is to the overall presentation of a song on a record. A great example of the creative use of percussion is the song "In The Air Tonight" by Phil Collins, which was produced by Hugh Padgham. Padgham had a big impact on pop music when he introduced the compressed, gated, reverb drum sound effect in "In The Air Tonight." This drum sound has been imitated by many artists and producers since Padgham first used it on that song and it remains widely used today in pop music. As I play the song, listen to the drum sound as well as the use of the harmonizer effect that layered Collins' voice.

- **[Play "In The Air Tonight"]**
- **note effective use of synthesizers and digital effects**

32. Although I have focused on pop, or rock and roll music so far, as we all know, record production covers all musical genres. The music producer plays an important role in every one, from jazz to classical to folk to traditional music. Again, the role of the music producer is to present the song in a manner that will appeal to the targeted audience. Sometimes, a music producer wants to hide any indication of "production" so that the music comes across in its most natural form. Music producer, T-Bone Burnett, produced the award winning soundtrack to the

movie "Oh Brother, Where Art Thou," creating a "polished naturalism sound" that introduced bluegrass and traditional "old time" music to a wider audience. Burnett also used some the same production techniques in producing the soundtrack to the recent Oscar nominated movie "Inside Llewin Davis." This movie is about a folk songwriter and performer in Greenwich Village during the early 1960s. Burnett focuses on bringing out a natural, but polished sound that emphasizes the emotional impact of the vocal performance. Listen to this polished naturalism sound in the song "Fare Thee Well," an old traditional song that is the theme song from the movie and has recently received wide radio play.

33. The song is also a good example of breaking a general rule of music. There is a general rule in music that you should not cross the harmony voicing with the melody voicing. In other words, if the vocal harmony starts above or below the melody, it should stay above or below the melody. The thinking is that the listener will be confused if the melodic and harmonic lines cross. But, of course, in music, the rules can always be broken if it works. In addition to the polished naturalism sound, listen to how the vocal harmony starts below the melody in the first line and then jumps above the melody in the second line–a violation of the general rule–but I think it works.

- **[Play–Fare Thee Well]**

34. The last musical example I'd like to play for you was one of my own. In writing my essay, I realized that I previously performed the role of a music producer without even realizing it. I also made use of digital technology and

effects. Ten or twelve years ago, I purchased a Roland 18-track digital recorder. This is a relatively inexpensive digital recorder with an internal hard drive and built-in digital effects for the home recording hobbyist. To learn how to use its basic functions, I recorded myself playing guitar and singing an old time country/ bluegrass tune called "Turn Your Radio On" down in my basement. Several years later, when my bandmates were over at my house for practice one night, I got them to add some vocal harmonies to the recording just for the fun of it. Several years after that, our band recorded a demo CD so that we would have a decent recording of our live sound that we could give to anyone who might be thinking about having us play at their event. We recorded about 20 songs over two days, one right after the other, in a home studio much as might have been done in a real studio in the 1950s or early 1960s–except that a real artist would never record so many songs in such a short period of time. We were all in the same room at the same time, and although we were separately miked and tracked, we simply played our sets without any overdubbing. We recorded all covers, most of which are acoustic rock and roll songs or songs from the Americana genre. The title of the CD is "Radio Hour"'–a reference to the bygone days of AM radio. After recording all of the songs, I had the idea of taking my old recording of Turn Your Radio On and adding some effects so that it sounded like an old record. My plan was to then gradually remove the effects to take the listener from the days of old time AM radio to the present day and the rest of our CD. I went out and bought an old tube radio from an antique shop and recorded the station tuning whistling sounds that you could only get from

a tube radio. I then added a short clip of my mother singing from an old live radio recording I had from the late 1940s along with some radio voices I recorded early one Sunday morning. Lastly, I removed most of the lower end frequencies from my original recording and added an effect to simulate an old time record sound. I mixed all these elements together and then gradually removed the effects, hopefully to bring the listener from the days of old time radio to the present day. We then made that song the first song on the CD. I did all this without realizing that this is exactly how music producers and real musicians use the studio as a form of artistic expression.

- **[Play–Turn Your Radio On]**

35. So what does all this mean to the casual listener? It need not mean anything. After all, music is entertainment and you are either entertained or you are not. But as I said before, there is an opportunity to listen to music in a way that can enhance the experience and deepen the enjoyment. Music also offers us a way to connect with one another at a deeply emotional and intuitive level. But the listener must be open to allow that connection to take place. For many of us, records give us a nostalgic connection with our youth or with some past period in our lives. That connection with the past can be a wonderful feeling. I can't help but think of my college years and smile every time I hear a Jackson Browne song. But, are we open to recorded music today in the same way we were when we were younger? Do we seek out artists who are trying to reach us? Certainly, in some respects, recorded music is different today, and as we have seen, production

technology has come a long way–some would say to the detriment of the music. But artists, whether performers or producers, then and now, using available technology, seek to touch a nerve in our collective consciousness–to invoke an emotion, whether that be love, outrage, loneliness, or simply joy and the urge to dance. My point is, open yourself to recorded music. Listen closely to the melody. If it's a vocal performance, listen to the lyrics. Can you relate to the lyrics? Does the singer have a distinctive character to his or her voice and does he or she communicate emotion? Is there an effect on the vocals and does it work? Listen for the vocal or instrumental harmonies. Listen to the rhythm and bass. In your judgment, does the record's production characteristics fit the song and genre of music. Is it a natural or unnatural sound and does that sound fit the song? In a sense, every listener is a music producer because the listener is the ultimate judge of whether a record has presented a song in a way that resonates. So when you drive home tonight, turn up your audio system, tune to your favorite radio station, or put in a CD, listen closely and ask yourself–do I like the sound of that?