Trippy Sounds: Recording Studio Effects of Psychedelic Rock, 1960s and Present

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Trippy Sounds: Recording Studio Effects of Psychedelic Rock, 1960s and Present

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Abstract

The psychedelic rock movement of the 1960s dominated popular music and culture of the decade. The movement was heavily shaped by the consumption of LSD, a mind-altering hallucinogenic drug. Songwriting and lyrics often reflected the drug and the states of mind that it induced, and unique cutting-edge production techniques were used to imitate the effects of LSD use. Artists such as The Beatles used new effects, such as phasing, artificial double tracking, tape loops, and reverse recording.

In the 21st century, music has again been described as psychedelic rock, though the music under that term is much more diverse. Bands such as King Gizzard and the Lizard Wizard, The Apples In Stereo, and Tame Impala can all be described as psychedelic rock. Though they all sound different, sometimes significantly different from 1960s psychedelic rock, they are united by their modern approach to 1960s production techniques.

This paper investigates the common production trends in modern psychedelic rock and how they compare to psychedelic rock production in the 1960s. Topics of investigation include guitar pedals, stereo and multitrack tape machines, stereo panning, artificial double tracking, phasing, rotary cabinets, tape reversal, varispeed, sound effects, and echo. Research has been done through historical texts about music of the 1960s, reading interviews with musicians, and careful listening of selected albums by noteworthy artists.
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Introduction

In the mid 1960s, the counterculture art movement of psychedelia began to take over popular culture. Artists were inspired by the mind-altering effects of LSD, a hallucinogenic drug that had become popular with young adults. Musicians were influenced by both the drug and the psychedelic movement to create unique recordings. Audio engineers used new effects such as guitar pedals, stereo and multitrack tape machines, stereo panning, artificial double tracking, phasing, rotary cabinets, tape reversal, varispeed, sound effects, and echo. In the early 21st century, new artists have been described as or labeled their work as psychedelic rock. These artists can sound very different from one another, and often sound quite different from the classic psych of the late 1960s. The connection between all of these musicians is the modern adoption and adaption of the recording studio techniques created in the 1960s by psych rock musicians, producers, and engineers. Though modern psych rock sounds different in comparison to classic psych rock and varied within modern bands, the adoption and adaptation of 1960s psychedelic rock recording studio techniques by modern psychedelic musicians connects the genre to its roots, while simultaneously allowing freedom of expression and creativity to fuel innovation and new sounds. In this paper, I will investigate the recording studio techniques used in 1960s psych and how they are implemented today to better understand the genre’s roots and the connections between the multitude of artists operating under the umbrella of psychedelic rock. I have prepared a playlist on Spotify containing all of the music referenced in this paper.¹

¹ Link to Spotify playlist: https://open.spotify.com/user/1290215792/playlist/4uK2UXw6SDgbXFg7FPMPq0?si=bn7ugw-BSDOAJ888yH3Jfg
The Psychedelic Sixties

The psychedelic movement of the 1960s would be nothing without the titular substances and their remarkable effects on those who have consumed them. One particular substance, lysergic acid diethylamide, more commonly referred to by the abbreviation LSD, was especially influential during this period. LSD was first synthesized by chemist Albert Hoffman in 1938. After inadvertently consuming it, Hoffman was the first to bear witness to the effects of the compound. His sense of time was contorted, his sense of self was lost to his environment, and his vision was completely altered (Hicks 58). These key effects of LSD are paramount in the psychedelic experience. These effects are referred to as dechronicization, the altering of the perception of time; depersonalization, replacing the sense of self with a connection to the universe; and dynamization, the distortion of perception and visual hallucinations (Ibid 63-64).

After the effects of the drug became known, LSD gained popularity at the end of the 1950s. It was used in therapeutic settings to treat depression and addiction. Artists and musicians began to experiment with LSD, as did the world as a whole (Ibid 59). Popular artists such as The Byrds and The Beatles, for example, fused their garage rock and R&B styles with jazz, classical, and avant-garde experimentations (Borthwick and Moy 42-43). LSD had found its niche in both the therapeutic and artistic worlds, but there was a burgeoning black market developing for recreational use of the drug. After public use started to spiral out of control, the United States banned the substance in late 1965 (Hicks 60). This ban was not enough to stop the masses from continuing to explore the substance and musicians continued to use LSD as a source of inspiration for their art.
1960s Recording and Mixing Techniques

The music created during the psychedelic era owes a lot to the unique effects created and implemented in the recording studio. To recreate the effects of dechronicization, depersonalization, and dynamization, new sounds were implemented. These effects range from guitar effects to new tape machines. Some effects were created simply by using existing technologies in new ways, or for new purposes, such as Leslie rotary cabinets and echo. In any case, the effects created in the recording studio helped to define the music of the psychedelic era.

For the guitar players, two new guitar effect pedals were crucial in the sound of the psychedelic era. The wah pedal, a filter controlled by the guitarist’s foot, added a new expressiveness to playing. Chet Atkin’s “Boo Boo Stick Beat,” one of the earliest recordings with a wah pedal, features the effect on the guitar. The guitar pedal was created from a modified volume pedal, swapping out the volume potentiometer with a tone control (Hicks 70). Fuzz pedals, another crucial effect, took guitar signals and overly compressed them, creating a loud, uncontrollable, and energetic guitar tone, prone to feedback and chaotic noise (Borthwick and Moy 54). Psych guitar players such as Eric Clapton of Cream and Jimi Hendrix popularized the effect within the genre. The intro to Hendrix’s “Voodoo Child (Slight Return)” features a wah guitar riff, and the intro to “Purple Haze” demonstrates the fuzz pedal. The guitar solos on “White Room” by Cream exemplify both effects in tandem.

Many psychedelic effects were only possible because of innovations in tape machine technology. Stereo and multitrack devices were implemented in recording studios starting in the 1950s (Borthwick and Moy 44). This allowed artists to record the main instruments in one pass, then go back and record other instruments on top while still retaining independent control over
the two tracks. Artists were free to experiment in the recording studio, creating things that were impossible to perform live or were otherwise foreign to the listener. Some effects required the use of recording one source to two tracks, which would have been impossible without these new technologies.

Stereo records in the 1950s started to take advantage of two speakers, positioned on the left and ride side, to simulate the live sound of a concert (Hicks 72). Psychedelic musicians such as the Grateful Dead, Jefferson Airplane, the Mothers, and the Jimi Hendrix Experience used the stereo field more as an effect, creating motion in sound that was not representative of reality (Ibid 72-73). Pink Floyd’s “Interstellar Overdrive” showcases a dramatic panning of the entire track during the outro’s recapitulation of the opening section. The entire mix sways from left to right, creating a nauseous effect on the listener.

Some clever audio engineers found ways to use multiple tracks to record one source in slightly different ways in a process known as artificial double tracking, or ADT. Standard double tracking is the process of recording a sound source, often vocals, a second time. This is done by recording it once, then recording a second time to another track. Artificial double tracking is similar, but is done by recording one sound source onto two separate tracks simultaneously. This new process made double tracking easier, as the part only had to be performed once. ADT makes the two tracks out of phase, but does not alter the pitch (Borthwick and Moy 53). However, ADT does change the timbral qualities of the recording, as small fluctuations in speed on the second track make it sound wider and fuller (Hicks 72). ADT causes the sound source to sound slightly hazy or woozy, perfectly suited for the psychedelic sound. John Lennon’s vocals on “I’m Only Sleeping” demonstrate the effect in a more mild manner, typical of early usage.
Phasing is a more dramatic effect created in the same manner as ADT, which became popular after the effect’s first uses in popular music. The characteristic “whooshing” sound of phasing was immediately popular with psychedelic musicians, arguably overused by the end of the genre’s hayday (Borthwick and Moy 53). The Beatles’ “Blue Jay Way” sees an early use of ADT approaching the territory of phasing on George Harrison’s vocals, reflecting the jet-lagged story of the lyrics (MacDonald 270). The Small Faces’ “Itchycoo Park” uses the effect in the vocals of the second verse, as well as on drum fills throughout the song.

Another modulation effect popular in the 1960s, Leslie speaker cabinets are similar to a typical speaker used for guitar amps or any other amplified instrument, except for the fact that the speakers rotate at assignable speeds. This device was designed to be used with organs, but experimental musicians found ways to use it for other sources. John Lennon’s vocal on “Tomorrow Never Knows” was fed through a Leslie cabinet, which was rerecorded to tape. The resulting effect is similar to phasing in that it creates a whooshing sound (Hicks 71).

Diving further into otherworldly sounds, George Martin, producer for The Beatles, created a unique new effect on “Rain”, released in June of 1966. The vocals from the first verse were played backwards over the outro, creating a vocal-like texture that was simultaneously otherworldly. This was done by physically running the tape backwards before rerecording that particular vocal section. The Beatles would go on to use this effect in many of their psychedelic records (MacDonald 196-197). “Are You Experienced” by the Jimi Hendrix Experience begins with a reversed drum part which shows up a few more times in the song. Hendrix’s guitar solo is also reversed, one of the more common uses of the effect.
In addition to playing tapes backwards, engineers began to play with adjusting the speed of their tape machines to alter the sound of recordings. This effect is known as varispeed, and by slowing down or speeding up a tape machine, both the speed and pitch are affected. Once again, “Rain” is a good example of this effect. The song was likely originally recorded in the key of A major, but the resulting song has been slowed down to the key of G major. The resulting product is noticeably dense and emphasizes the low-end frequencies. This effect adds a sense of heaviness, both physically and metaphorically (MacDonald 1967). It is also reminiscent of dechronicization, as this effect is an obvious distortion of time.

Inspired by experimental electronic artists such as Karlheinz Stockhausen and Edgar Varèse, psychedelic artists began to incorporate non-musical elements in their recordings (Borthwick and Moy 44). The Beatles’ “Tomorrow Never Knows,” one of the most important formative works of the genre, showcases many sound effects. The effects were created by tape loops, in which a preexisting recording on tape is cut and spliced into a continuous strip, allowing the recording to cycle indefinitely. The band overdubbed the following five loops over their rhythm section recording:

1. A sped-up loop of Paul McCartney laughing, creating a seagull-like sound
2. An orchestra playing a B-flat chord
3. Flutes performed by a Mellotron, a keyboard which itself plays back pre-recorded tape loops of instruments
4. A string pattern played by a Mellotron
5. Scales played on a sitar, sped up and distorted (MacDonald 190-191)

The Pink Floyd song “Bike,” the conclusion of their overtly psychedelic 1967 debut Piper at the Gates of Dawn, ends with a sound collage. Reflecting the final stanza’s “clockwork” lyric, the
sound effects include mechanical gears, ticking hands, footsteps, and chimes, as well as bells, cymbals, and manipulated voice.

Throughout the decade, natural reverberation had been a part of popular recordings. Whether through recording the sound of a room or by using an echo chamber or plate, reverb had been used in many popular records in the 1950s and early 1960s. In a similar fashion, psychedelic musicians tended to use echo effects to distort the feeling of time. Instead of a smooth, realistic sounding trail for a reverb effect, echos are individual and distinct, following the input signal in a predetermined length of time. Echo times can be either short and fast or long and slow. The ending of vocal phrases in the Lemon Pipers’ “Green Tambourine” are a great example of echo used on vocals to fill space (Hicks 71). Verses end with a sustained chord, the drums drop out, but the echo on the vocal causes the space to be filled in an unnatural but intriguing way.
Modern Psychedelic Rock Revival

In the 21st century, a new generation of musicians have begun to create psychedelic rock. Starting in the mid to late nineties, various bands have released music described as psychedelic rock. However, in the current era, the sound is more diverse. Artists of very different styles are described as members of the genre. Psychedelic musician Pete Kember offers the following:

It has become a far wider term, and it can apply simply to musicians who rewrite the rules, so I would say Aphex Twin is 'psychedelic', as are Hookworms, Wooden Shjips, Vacant Lots, TTotals … The difference between Goat and Clinic is vast but their fans would probably argue that they're both supremely psychedelic. The same goes for Animal Collective and Panda Bear. (Lester)

Wayne Coyne, frontman of The Flaming Lips, agrees with Kember’s sentiment. He proclaims, “Joy Division are psychedelic… My Bloody Valentine are psychedelic! Gustav Mahler is psychedelic! Any musician not playing by the rulebook and going inside their heads is psychedelic,” (Ibid). If this wide range of artists are all psychedelic, then something else must connect them.

The unifying factor is modern psychedelic musicians' usage of the same effects as their 1960s predecessors. Modern bands are using echo and phasing in new and creative ways, adding in sound effects and other tape machine style techniques, either emulated or with the original equipment. The end product can often be very different from how any one effect was used in the 1960s, but the overall feeling created by these effects are preserved in this neo-psychedelic style. In the following section, I will analyze select recordings by modern psychedelic bands and explain how they use the classic effects of the 1960s in the current era.
King Gizzard and the Lizard Wizard

King Gizzard and the Lizard Wizard is a seven-piece Australian psychedelic rock band, known for their variety of styles and sounds. Since their first release in 2012, the band has put out fifteen albums, not to mention the various members’ side projects and management of their own label Flightless. The band is known for their use of tape machines and other old-school analog gear. Stu MacKenzie, frontman and producer for the band, tends to use his Tascam 38 8-track machine for recording the band, paired with outboard preamps, compressors, delays, spring reverb, and other goodies (Davie). This allows the band to experiment in the studio in a similar fashion to 1960s musicians. The following recordings are great examples of the Gizz’s use of well-known psychedelic effects in their own music.

“Satan Speeds Up" - *I’m In Your Mind Fuzz*, 2014

The intro section sounds very muffled and is raised by approximately one semitone relative to the rest of the song. This effect could have been achieved with varispeed or otherwise emulated. One possible way this could have been done would be similar to “Rain”. The intro/chorus may have been recorded in E and the verse in D, then the chorus could have been slowed to match the tempo of the verse, resulting in the part being transposed to Eb. Over in the realm of modulation effects, the rhythm guitars use a wah pedal at a moderate rate during the verses. In contrast to others who tend to use a wah pedal more slowly and expressively, all three guitar players in the band operate the wah pedal at moderate to rapid paces, often to a steady rhythm. This is a pretty unique way to use a wah pedal, even within psychedelic rock.
“Infinite Rise” - *Quarters, 2015*

This song is notable for its use of sound effects throughout, such as a man groaning (2:14), birds chirping (2:18), a cow mooing (2:24), a siren (2:33), a baby crying (3:25), a bell (3:45), metallic clanging (4:25), a rising Shepard tone (5:15, as well as the beginning and ending), laughter (4:45), a groan (6:25), monkeys hollering (6:30), cars screeching to a halt (6:50), a horse neighing (6:59), and a rooster (8:06). These sound effects often reflect the lyrics.

“Tezeta” - *Sketches of Brunswick East (with Mild High Club) - 2017*

The band samples a text-to-speech program during bridges (0:55, 1:46, 3:17). While it is not exactly a sound effect, it achieves the same role in being a non-musical element incorporated within the recording. This robotic voice speaks during breaks, then also doubles the vocal line at the end of each chorus. The song slightly slows down at 2:00 before picking back up at 3:14, which may have been achieved with varispeed. The solo starting at 2:36 is dramatically panned back and forth, like the entirety of the ending of “Interstellar Overdrive”. The sound source is highly altered, but it sounds like it may be a guitar played with both fuzz and wah, effects the band are known to use.

“Sketches of Brunswick East III” - *Sketches of Brunswick East (with Mild High Club)*

This song has very obviously been slowed down after recording. The song starts with the noises from a tape machine before continuing to the song. The emphasis on low-end frequencies and lethargic feeling are indicative of varispeed. Whether or not this album was recorded to tape or digital, the sound of slowed down tape is present here.
“The Last Oasis” - *Gumboot Soup*, 2017

The break of the song (1:56-2:59) has a very intense phasing effect on the entire track. This creates a feeling of being underwater, creating an unnatural space for the track to be in.

There are also some stereo panning effects in this section, with different elements of the track seeming to flow back and forth like waves in water.
The Apples In Stereo

The Apples In Stereo began releasing neo-psychedelic rock earlier than most, with their fourth album *Her Wallpaper Reverie* releasing in 1999. Robert Schneider, frontman and vocalist for the band, has a love for 1960s bands such as The Beach Boys, The Beatles, and Velvet Underground (The Elephant 6 Recording Company). The influence of this music is especially noticeable on *Her Wallpaper Reverie* in the following tracks.

“The Shiney Sea”

Watery bubbling noises are in the background of the song, reflecting the lyrical ideas. This could either be a sound effect, or caused by phasing. The vocals throughout the song definitely sound like they have an ADT effect on them. The guitar solo at 2:39 uses a fuzz. At 2:56, it sounds like the guitar is either fed through a Leslie cabinet or ADT effect, while the bubbling effect ramps up until the solo ends.

“Strawberryfire”

The opening drum break has some echo on certain drum hits, creating a disorienting effect. There are chaotic string samples mixed in the background, noticeable when the band comes in at 0:07. Again, the vocals sound like they have been affected with an ADT. There is a reverse drum effect at 1:22. After another reversed drum fill at 3:14, the sound effects get very crazy at 3:17. The string noises are amplified and a phaser is applied. The guitar solo at 3:31 uses a fuzz, though the tone is more mellow than other examples.
**Tame Impala**

Tame Impala, another Australian psychedelic rock project, is the solo output of Kevin Parker: multi-instrumentalist, songwriter, and producer. His music is a mix between 1960s psychedelic rock and electronic music, and together with mixer/producer Dave Fridmann, Tame Impala’s records are some of the most commercially successful neo-psychedelic albums to date. 2010s *InnerSpeaker* in particular focuses more on the psychedelic rock influence and features many of the essential effects.

**“It Is Not Meant To Be”**

The electric guitar tracks have a phaser on them, starting at the beginning. Once the drums come in, they and the bass are panned to the left side, while the main guitar is on the right. This unorthodox panning technique is reminiscent of early stereo mixes of 1960s bands. The vocals use a short delay with a long feedback when they come in at 1:19. The delay occasionally comes back at the end of phrases. In addition, the vocals sound like they have an ADT. A wah pedal is used on the guitar solo at 2:33, which is then panned back and forth.

**“Alter Ego”**

As the song starts, there is a quiet spoken word sample at the beginning. The electric rhythm guitar begins at 0:09 and has a slow phaser on it. The guitar lead at 0:24 has many effects: fuzz, delay, and some kind of phasing. A reversed cymbal sound occurs at 0:44. Vocals come in at 1:08 with a short delay and ADT, like the previous song. These effects continue throughout the song, with the echo and phaser being especially prominent.
Conclusion

The psychedelic era of the 1960s inspired countless musicians to adopt new techniques in the recording studio to reflect the influence of LSD use and the movement as a whole. The fuzz and wah guitar effect pedals allowed guitar players to add new dimension to their playing. Innovations with tape machines allowed for engineers to create new effects such as multitrack recording, sound effects, stereo panning, varispeed, and ADT. Effects such as phasing, Leslie speaker cabinets, and echo were used in new ways to alter recordings. In the modern day, new bands have used the same effects in new ways to recreate the psychedelic sound. While those sounds are different in many cases, bands like King Gizzard and the Lizard Wizard, The Apples In Stereo, and Tame Impala continue to craft exciting, dynamic, and experimental music, redefining what is possible in the recording studio just like the classic psychedelic rock artists of the 1960s.
Works Cited


Co, https://open.spotify.com/track/64BaolZ7GYctwlqYQcFezl?si=GagVw4l4QcqRb_Ry3mjzZw


Co, https://open.spotify.com/track/67fa01YXMBkL6yvqyQTF2c?si=MPO7i58ZT3ORhY5G8gvXRA


Cream. “White Room.” Wheels of Fire, 1968, Universal International Music B.V. Spotify, https://open.spotify.com/track/3Xls4cNOwy01dtrNXb1inG?si=1G9Bg3mVSm2gC5Ube

werUQ.


king-gizzards-lo-fi-gut-feeling.


King Gizzard and the Lizard Wizard with Mild High Club. “Sketches of Brunswick East III.”

*Sketches of Brunswick East*, 2017, Flightless, https://open.spotify.com/track/4pEJQGDJcL25uROMiqTnyK?si=Ne7kwDo1S6q1GX038FY7vw


Pink Floyd. “Bike.” *Piper at the Gates of Dawn*, 1967, Sony Music Entertainment. Spotify, [https://open.spotify.com/track/4gJRrskkBk1oyooA4qm67a?si=1RjQuBlzQ-q8b6tz8Lzh3g](https://open.spotify.com/track/4gJRrskkBk1oyooA4qm67a?si=1RjQuBlzQ-q8b6tz8Lzh3g).


Tame Impala. “Alter Ego.” *InnerSpeaker*, 2010, Modular Recordings, [https://open.spotify.com/track/2Zy9cf5v1tWFDmXTbahAU8?si=UAe6MuzjTKWAAdGl_MBFhaQ](https://open.spotify.com/track/2Zy9cf5v1tWFDmXTbahAU8?si=UAe6MuzjTKWAAdGl_MBFhaQ).