

### Extended essay cover

Diploma Programme subject in which this extended essay is registered:				
(For an extended essay in the area of languages, state the language and whether it is group 1 or group 2.)				
Title of the extended essay: The Influence of Northern Endown  Classical Indian Percussion in Progressive Metal Music				
Candidate's declaration				
If this declaration is not signed by the candidate the extended essay will not be assessed.				
The extended essay I am submitting is my own work (apart from guidance allowed by the International Baccalaureate).				
I have acknowledged each use of the words, graphics or ideas of another person, whether written, oral or visual.				
I am aware that the word limit for all extended essays is 4000 words and that examiners are not required to read beyond this limit.				
This is the final version of my extended essay.				
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Supervisor's r	eport
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extended essay will not be assessed and may be returned to the school.			
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This student worked on the EE with enthusiasing			
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To the best of my knowledge, the extended essay is the authentic work of the candidate.			
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### Assessment form (for examiner use only)

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	E reasoned argument	2	4	
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Name of first examiner: (CAPITAL letters)	Examiner number:
Name of second examiner:(CAPITAL letters)	Examiner number:

### The Influence of Northern Classical Indian Percussion in Progressive Metal Music





Candidate #

Word Count: 3410

#### Introduction

Northern Classical Indian music and modern progressive metal are rarely thought of as synonymous, and it is hard to imagine that they would ever be brought together in a coherent way. Classical Indian music has a blurred, mysterious history filled with rich religious tradition, and the percussion within this music has had an equally peculiar, unclear history, though it is certain that this percussion music has been through drastic transformations over centuries, leaving us today with a traceable history of numerous styles and techniques used, especially since the early twentieth century (Broughton 209). This contrasts completely with modern progressive metal's history, which can be traced back, step-by-step to specific groups, people, and movements within twentieth and twenty-first century rock music. Nevertheless, each has its own specific place in the world of music today, and each is open to scrutiny and analysis. In this essay I will attempt to show the influence of classical northern Indian percussion in the music of modern progressive metal band, Tool. In order to accomplish this, I will examine the direct use of classical northern Indian percussion within Tool's music.

For the purposes of this essay, I will focus on two of Tool's songs, "The Grudge," and "Right in Two" due to their abundant integration of Classical Northern Indian and other nonwestern percussion. For samples of classical Northern Indian music, particularly the percussion used in it, I will be referring to Indian classical music veteran Ravi Shankar, Classial Flutist Hariprasad Chaurasia, and tabla player Aloke Dutta. Aloke Dutta will be a crucial reference in this investigation because he is the personal tabla instructor to Danny Carey, the percussionist for Tool (Micallef 66). Aloke Dutta began teaching Danny Carey tabla in 1997, four years before "The Grudge" was released, and nine years before "Right in Two" was released in 2006, allowing ample time for serious influence on the percussionist by his tabla instructor to emerge (Camella). Given the complexity of the percussion parts in Tool's compositions, as well as those of Ravi Shankar, Hariprasad Chaurasia, and Aloke Dutta, I will not attempt a critical analysis of the percussion samples used. Rather, this will be an investigation of the largest themes used in both styles, with multiple examples found in the music. For reference of Tool's compositions, I primarily used my own analysis, but as a reference, I referred to scores created in the public domain through the software "Powertab." However, I use this reference sparingly, and I disagree with the visual representation of the music in many cases, and I note this when referencing these scores.

#### Direct use of classical northern Indian percussion in the music of Tool

To the untrained, uneducated listener, such as myself when I began listening to Tool at the age of thirteen, the sounds prevalent throughout Tool's suggest a mystical or occult nature. However, to the listener trained in instrumental music of many cultures, there is no dispute that these mystical sounds are recognizable forms of non-western percussion, the most frequently used being tabla drums, the most common percussion instruments used in Northern Indian classical music.

#### "The Grudge"

In the percussion section, the introduction to "The Grudge," beginning at 0:08, consists of an intense, complex 5/4 pattern played entirely on drumset toms and bass drum, creating a heavy, tribal sound. However, because this piece is primarily in a 5/4 time signature, the pulse and overall feeling associated with traditional African tribal drumming is lost. Intellectually, the listener is able to hear the downbeat of every measure, but unlike tribal music, in which there is an even, constant pulse that is used partially for purposes of dancing, the odd time signature of "The Grudge" disallows that feel or that use of the music. Tool has, instead, taken the concepts and sounds of African tribal music and fused them into a highly modernized setting of vastly more sophisticated percussive equipment and a radically different musical setting of odd time signatures. This will prove to be the same phenomenon that occurs with the use of tabla drums and similar percussive sounds which will be encountered shortly. Whereas in the introduction, modern drumset toms were used to mimic the sounds of a non-western style of music, we will now find non-western percussive sounds whose original style and use have been manipulated and recreated to be used within a western musical setting.

After a short pause at 0:32, this concept of a pseudo-tribal drumming sound continues by introducing tabla-like percussive instruments to take the place of the drumset toms of the introduction. Initially, at 0:35, constant sixteenth notes are played on two tabla-like instruments at piano (p). Then, two sixteenth notes overlap the original sixteenth notes using a low tabla sound at 0:48, then two sixteenth notes using the high tabla sound at 0:50. By consolidating the original pseudo-tribal drumming sound into constant sixteenth notes on one drum, this appears as follows:

High Tabla
Consolidated Track
Low Tabla

Andrew Source

This pattern repeats for a total of four measures. After this, the pattern repeats four more times, but increases drastically in complexity. Instead of the two sixteenth notes on the low, then high tabla drums, a myriad of different percussive sounds overlap the original pseudo-tribal drumming track, including rising and falling tabla drum sounds and sounds comparable to a diembe drum and a metal instrument sounding similar to chain links or tambourine jingles.

The examples of these two patterns raise an integral phenomenon necessary to understand the influence and usage of non-western percussion in Tool's music: In the two songs used for this essay and the vast majority of Tool's songs in which tabla is present, the tabla sounds are entirely synthesized. In Tool's 1996 album, "Aenima," Danny Carey recorded the sparse tabla sounds by playing the instrument himself into a microphone, which is how one imagines percussion to be recorded. However, after becoming an apprentice of Aloke Dutta, Carey recorded a multitude of Dutta's tabla sounds, then converted these into samples which he then used throughout the recordings of the albums "Lateralus" and "10,000 Days" via a highly advanced electronic drum, the Mandala Drum by the Synesthesia Corporation, a picture of which may be found on the cover page (Micallef 59). This is vitally important because the use of electronic reproduction allows Danny Carey an enormous selection of sounds that can be created with ease. Furthermore, in a studio setting, this electronic reproduction, coupled with modern recording technology, allows Carey to create multiple layers of non-western percussion in various combinations, as is seen in the early parts of "The Grudge," from 0:35 to 1:15.

In the next section of this composition, the interjection of tabla drum sounds creates the foundation for the remainder of the song, emphasizing the importance of using tabla drums directly in Tool's music. At 1:26, a low, open tabla sound reenters, playing the following pattern:



Through the versatility of its utilization, this pattern acts as the foundation upon which numerous bricks are laid throughout the composition. While this pattern is played only six times in this section, it will be seen in virtually every section hereafter within "The Grudge." At 1:45, the electric guitar directly imitates this pattern on a low D, changing the dynamics slightly. My representation of this rhythm conflicts with that found in the Powertab score, on measure twenty. My representation appears as follows:



This occurs while the bass guitar and drums are playing modified patterns based on the original tabla rhythm, creating an intricate layering of rhythmic patterns while retaining relatively basic harmonic instrumental relationships.

In the next section of this piece, beginning at 2:10, the guitar part repeats, but the drum and bass patterns change drastically, with the drums shifting to the toms and both instruments further modifying the original tabla rhythm with fewer accents, the bass now playing a rhythm identical to the guitar. The rhythm heard by the drumset is the following:



However, the important aspect to notice is the bass drum, which corresponds to the accents noted above. Since these are the accented parts found in all three instrumental parts, the prominent rhythm and pulse of this section is illustrated below:



Finally, at 2:34, there is an exact refrain of the original tabla pattern played on a ride cymbal before the largest shift in rhythm occurs. The new rhythm played scarcely resembles any of those played up to this point in the composition. This new rhythm, played from 2:40 to 3:17, enforced by all instruments again playing this as their only accented beats together, appears as follows:

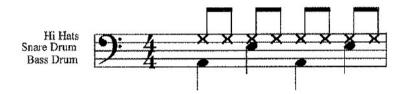


The significant aspect of this new rhythm is that it does not line up exactly with the rhythms previously encountered. The first, third, and fourth beats played in the above pattern correspond with an accented note of the previous sections. However, the second note, a dotted quarter note, does not directly line up with any notes previously played. It is one sixteenth note different from a note which has been accented in all the previous sections. This very obviously creates a different pulse and feel than encountered before. In addition, this section introduces

sparse cymbal work to Carey's tom patterns, which creates further deviation from the previous rhythms.

After twelve measures, the rhythm returns to a pattern similar to the one used between 2:10 and 2:34. Now, instead of simply presenting a rhythmic deviation from the original tabla pattern, then returning to the exact original pattern in a new section, the entire sections deviate in their presentation of the original tabla pattern at all. This variation shows an overall progression and movement of the song, similar to a Classical theme and variations composition.

This theme and variation theory is further supported by the following sections. From this newest section, in which the rhythm returns to heavy tom work similar to the section between 2:10 and 2:34, we find a transitory area in which the 5/4 measure is segmented in a 3/4+1/4+1/4 fashion, after which we again reach a section with a completely new rhythm at 3:52. This section contains the closest resemblance to any standard rock or metal patterns in the percussion section we have seen thus far. It accomplishes this through segmentation of the measure in a 4/4+1/4 fashion, in which the 4/4 segment contains various semblances of a standard drumset rock beat, which appears as follows:



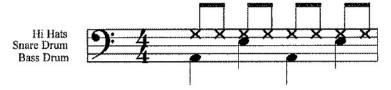
Again we see the variation between a semblance of the original tabla pattern and an entirely new pattern when, at 4:13, this rock pattern transitions into multiple hybrid patterns of both, the standard rock pattern and the previous tom work, first by four measures of tom work with much greater involvement of cymbals, then seven measures of rock beat-styled drumming, except now accenting vastly different beats then before.

This now brings the listener to 4:48. From this point until the end of the song, no new musical concepts are seen, and over 1/3 of the composition, from 4:48 to 8:36, is used as a large recap and thematic increase in tension until the end of the song. Briefly, here is the layout of the remainder of "The Grudge":

5:00- The original tabla rhythm, on a synthesized, electronic drum, repeats for four measures:



5:12- The separate rhythm, originally from 2:40 to 3:17, repeats for twelve measures:



6:00- The original tabla rhythm, again on low drumset toms, repeats for eight measures:



- 6:25- A two-measure interjection, as seen from 1:13 to 1:20, repeats.
- 6:44- A synthesized, layered percussion pattern, similar to those played between 0:35 and 1:15, acts as a thematic buildup for four measures.
- 6:59- The same drumset pattern played in the first section of the composition is repeated, accompanying much more aggressive vocals and guitar parts. While the melody and harmonic relationships vary somewhat, the rhythmic structure remains the same for the remainder of the song, until 8:36.

"The Grudge" proves itself to be a monumental work by standards of modern progressive metal. In 2001, Tool was at the forefront of utilizing non-western musical aspects, especially through percussion, in its genre. However, once one analyzes this piece, it is evident that it is actually relatively simple in compositional and rhythmic structure. However, in Tool's next album, "10,000 Days," the embedding of non-western percussion, especially tabla drums, is done with a much greater sense of professionalism and seamlessness, creating for an intriguing composition.

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#### "Right in Two"

"Right in Two" opens much more subtly than "The Grudge" by beginning with only guitar and bass guitar at a mezzo piano (mp) volume, introducing the rhythmic and melodic structure of the song through repetition of the 11/4 theme six times with only mild variation before vocals enter at 0:35. Between 0:48 and 0:58, the percussion is introduced to the piece, showing its presence in the composition in an intriguing manner. As is the case with most of the uncommon percussion sounds used in Tool's music, Carey synthetically produces the cymbal sounds here. Rhythmically, this is interesting because Carey's percussion pattern is in 10/8, while the instruments already present continue in 11/4. The guitar line appears as follows, which may be found in the Powertab score, in measure one, with few variations and the bass guitar playing only light accompaniment:



And the percussion line, three cymbals without specific pitches, appears as follows:



In "Right in Two," the tabla drum sounds enter at 1:40, acting solely as an accompaniment to the guitar, bass guitar, and vocal lines that have already entered. The time and placement within the composition at which the tabla enters is the first method by which the non-western percussion in "Right in Two" proves to be more authentic to its classical use than it was within "The Grudge."

In classical Northern Classical Indian music, a composition generally begins with a raga, or short progression of a few notes, from which a melody is formed, and this is usually played on a single instrument such as a sitar or flute. After the melody has been securely founded and there is little room for further expansion, the tabla enters. In "Alap" by Ravi Shankar, the tabla enters at 1:46 of a total 23:36; In "Gat I" by Ravi Shankar, it enters at 1:08 of 10:15; In "Raga Bhoopali" by Classical Indian flutist Hariprasad Chaurasia, the tabla enters at 1:39 of 20:12. In "Right in Two" by Tool, the structure of the introduction and the entrance of the tabla are highly similar to those of authentic Northern Classical Indian music. In "Right in Two," we hear the

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electric guitar enter with an 11/4 "raga," in which nine notes are played in a particular progression, allowing room for variation and expansion. This variation occurs by means of adding sparse bass guitar, slight cymbal work, and vocals. Even with the interesting relationship between the cymbals and the guitar, the introduction to this song is relatively simple compared to numerous other compositions of theirs. Thus, with this calm, quiet introduction that listeners of their music are not particularly used to, it is natural that Tool introduces a new element, the tabla, to build the composition. Similarly to Northern Classical Indian music, no drastic changes occur within the piece simply because the tabla is introduced.

The next, and possibly most important aspect to be noted regarding the direct use of tabla drums in "Right in Two" is that during this initial section in which tabla is used, from 1:40 to 2:27, the tabla patterns injected into Tool's music is believable. By this, I am referring to the fact that similar tabla rhythms and patterns found here could be found in Northern Classical Indian music. One way this is achieved is by Carey using only one layer of percussion track. In "the Grudge," the tabla patterns present could not physically be played by even the most experienced tabla player without recording in layers. However, in "Right in Two," the tabla part could be played by one player without layering the recording, thus also making it possible to play in a live setting. Furthermore, the patterns played within each measure sound far less rehearsed than those of "The Grudge." On beats one and eleven of each measure, the notes played repeat, but aside from this, every measure has its own unique feel. In Northern Classical Indian music, there are a myriad of rules and specifications regarding solo performance and accompaniment with tabla drums, and one crucial aspect is improvisation (Dutta 19-22). To me, the eight measures of tabla accompaniment near the beginning of "Right in Two" display this intrinsic characteristic of improvisation.

From 2:50 to 4:00, only drumset percussion is used, and there is a distinctive separation between the feel and power of the music between sections that are virtually identical except for the percussion used. In the section between 2:50 and 3:39, the drumset creates a much more definite pulse, largely because of the size of drums used. A 22" bass drum is unable to compare with a set of tabla drums in influence on the pulse of a composition. Between 3:39 and 4:00, we reach the four-measure refrain of the song, the section which contains most elements of heavy metal and rock music in "Right in Two," primarily through the increased dynamics, heavy distortion in the guitar and bass guitar, and increased presence of cymbal crashes.

Immediately after the refrain, Carey reintroduces the tabla drums, and it becomes extremely evident that this composition is of the metal genre when, at 4:06, a massive, sustained chord is struck on the distorted guitar, interrupting the light tabla work and ambient mood. The tabla slowly become the primary instrument of the section as the distortion fades away, and it remains so until it is eventually overtaken by distorted instruments and heavy drumset sounds. During this time, the tabla solo plays the crucial role of variation between heavy, powerful sections of the song and more musically delicate and intricate sections by playing a solo, accompanied lightly by clean electric guitar. In the tabla playing, this solo is very similar to the

other appearance of tabla from 1:40 to 2:27, except for slightly more intricate patterns than before. We now may conclude another difference between the use of tabla and non-western percussion in "The Grudge" and "Right in Two": In "The Grudge" tabla were used as a foundation and fundamental component in developing the composition, whereas here we find tabla to be used as an instrument of separation between sections of the song, creating a more interesting-sounding piece because of the variety in dynamics and mood.

From the refrain, Tool continues with the heavy feel associated with its genre for the majority of the song's remainder, from 5:25 until 7:53. At this point, the song has passed its climax and begins an extended decline, in which the tabla and other non-western percussion instruments make a final appearance, carrying the composition to its concluding notes. Initially, this section is similar to what we have seen before, from 1:40 to 2:27. Here, however, cymbal sounds similar to those found in the introduction are reintroduced. Eventually, the song concludes with a synthesized sound, a mixture between a bass guitar and a Jew's harp. Again we see the distinction between heavy and lighter, more ambient sections of this composition reinforced by presence of tabla drums and other percussive instruments of non-western origin.

#### Conclusion

My goal of this essay was to analyze and better understand the direct use of Northern Classical Indian music within the music of modern progressive metal band Tool, and my findings are summarized below.

Source:

Findings:

"The Grudge"

Non-western sounds embedded into progressive metal structure create a foundation upon which the song is built.

"Right in Two"

Non-western sounds used in specific sections separate from those with metal characteristics create large variety within the song.

By conducting this research, I attempted to understand the most significant musical purposes and uses of integrating non-western percussion, especially tabla drumming, into Tool's compositions. Inevitably, because Danny Carey, the percussionist for Tool, studies tabla drumming with expert tabla soloist Aloke Dutta, he clearly influenced. Thus, I believe that the effects of this studying and apprenticeship transcend the direct use of tabla drums and other non-western percussion in Tool's music.

In the future I would like to analyze and discuss various fundamental techniques present in original tabla drumming and how they have affected Danny Carey's musicianship and impact on Tool's music within other settings, such as his playing on the drumset. This is a much more complex subject than presented in this essay, and it is worth discussing and researching in greater depth by musicians in the future.

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Ravi Shankar. "Gat I." Pandit Ravi Shankar. Movie Play, 2000.

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#### **Pictures**

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# Appendix 1. Northern Classical Indian samples and Tool's Recordings

Example order On disk:	Song Information:
	/ Not or
1	The Grudge-Tool, Lateralus (Album) (2001)
2	Right in Two-Tool, 10,000 Days (Album) (2006)
3	Alap-Ravi Shankar (rach ()?
4	Gat I- Ravi Shankar (vacte 3) (2000)
5	Raga Bhoopali-Hariprasad Chaurasia (rac (2005)



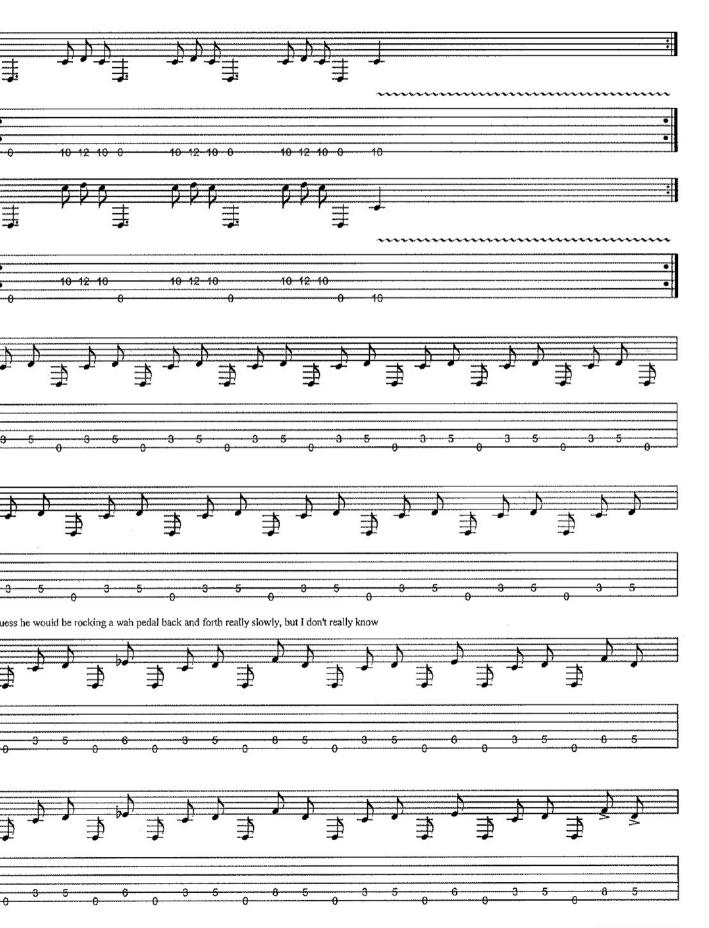




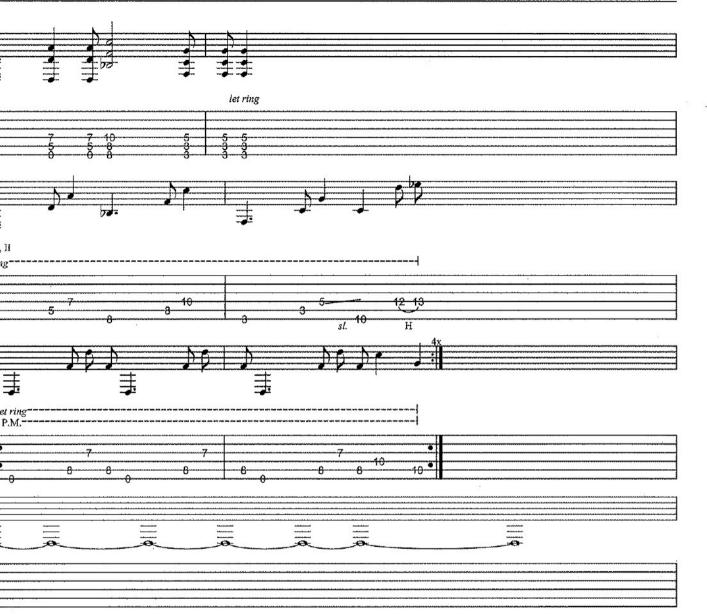
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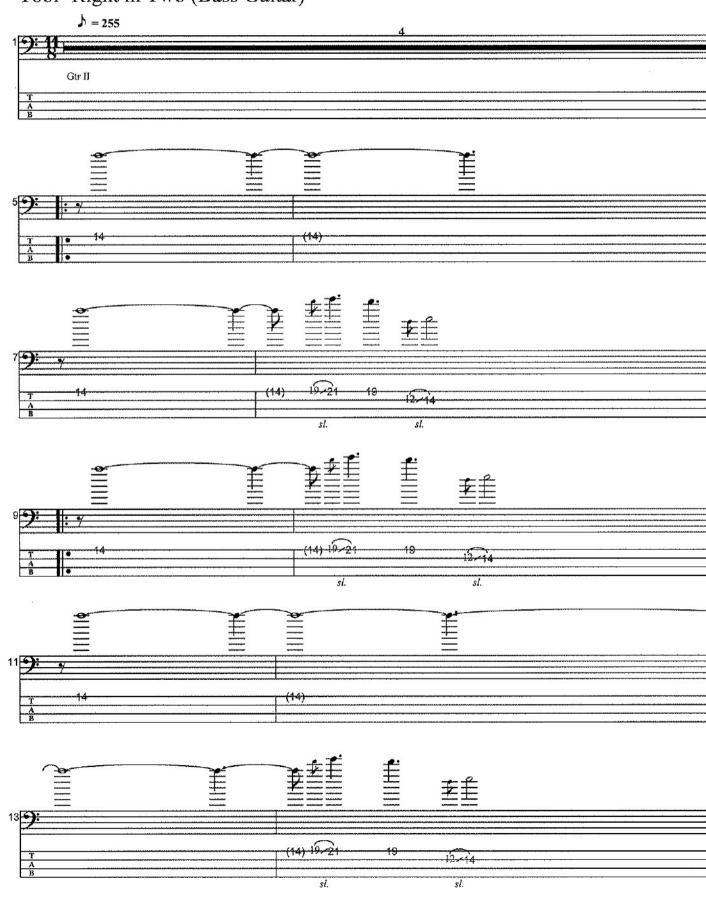






### (Bassline)

### Tool- Right in Two (Bass Guitar)



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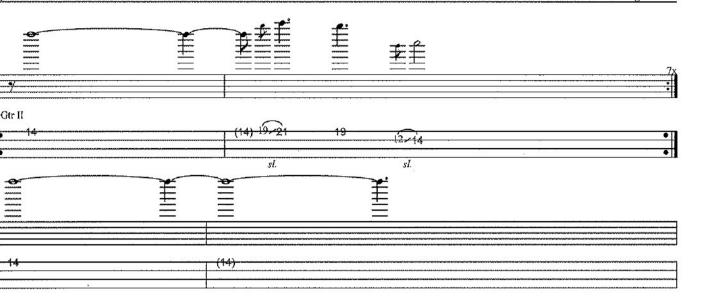




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### THE GRUDGE

# As recorded by Tool (From the 2001 Album LATERALUS)

Transcribed by Tim Chambers and Daniel Macklin

Words and Music b







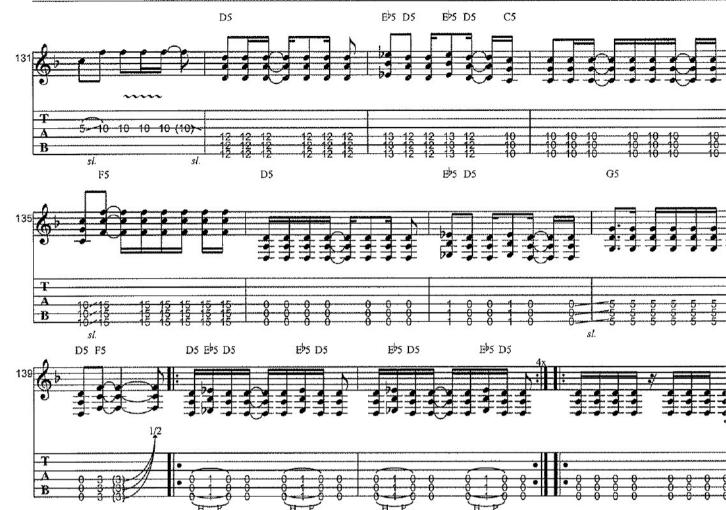












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### THE GRUDGE (Bassline)

## As recorded by Tool (From the 2001 Album LATERALUS)

Transcribed by Tim Chambers and Daniel Macklin

Words and Music b







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