Building From Within: A Harmonic Self-Help Guide For Guitar Chord Voicings, Their Densities, and Applications

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BUILDING FROM WITHIN: A HARMONIC SELF-HELP GUIDE FOR GUITAR CHORD VOICINGS, THEIR DENSITIES, AND APPLICATIONS

By

Samuel Leslie Dickinson

A DOCTORAL ESSAY

Submitted to the Faculty
of the University of Miami
in partial fulfillment of the requirements for
the degree of Doctor of Musical Arts

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BUILDING FROM WITHIN: A HARMONIC SELF-HELP GUIDE FOR GUITAR
CHORD VOICINGS, THEIR DENSITIES, AND APPLICATIONS

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Throughout the history of jazz, the guitar has competed with its chordal counterpart, the piano, in providing the harmonic foundation for both small and large jazz ensembles. Initially a rhythm instrument assigned to fill the role previously occupied by the banjo in Dixieland, the jazz guitar evolved into an instrument capable of providing everything from a sparse and rhythmic harmonic palette to lush chord voicings that rival its eighty-eight key brethren. This paper explores a method of studying harmony on the jazz guitar by building chords from the inside out, beginning with two note dyads, and working up to six note voicings. The respective density of these chords will be discussed, and how this affects their suitability for musical settings including solo guitar, small ensembles, big bands, and orchestras.
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CHAPTER 1
INTRODUCTION

Creating and executing chord voicings on the jazz guitar is a broad task, approached by guitarists in many different ways. The purpose of this study is to show a framework for creating voicings that begin with their core notes, the third and seventh scale degrees, and to organize the sounds we create by their density. There has been much written on the subject of chord voicings, but nothing that clearly outlines chords starting from the third and seventh dyad within the voicing. Properly done, this can expand to create voicings varying in density from three to six notes.

The three note chords created can be dyads with a bass note, dyads with an extension above, or triads containing the root, third, and seventh of a chord. The study of triad harmony has many applications from interesting voice-leading exercises, to providing upper-structures to existing chords. By being more open sounding and less tonally specific than their four-note seventh-chord equivalents, they are easier to manipulate when practicing. Adding notes to these in the same manner as with the dyads, we can create four-note seventh-chords, or four-note rootless voicings containing extensions. By placing different roots under these triads, we can also create many of the “slash chords” often found in jazz. Slash chords are voicings that consist of a triad, over a bass note not found in that triad. While this may sound formulaic, careful attention to timbre and range must be paid to effectively voice these on the guitar.

The use of open strings will be explored as well, since this can help a guitarist overcome the logistical hurdles of playing closer intervals. When fretted, closer intervals
are difficult to play as they often involve difficult spread fingerings. Each fret on the guitar provides a semitone variance in pitch, so in order to play a minor-second on adjacent strings one must stretch three to four frets. With the use of open strings, these stretches can be eliminated, as there is one less fretted note required. Because of this phenomenon, open strings help guitarists more closely approximate the denser harmonic vocabulary of the piano.

I would like to present my information in a manner that leaves the reader with both practical applications such as preconceived chord shapes, as well as a conceptual framework to create with. Examples of this will include the exhibition of bass notes below the third and seventh dyad and chord extensions above. As bass notes and/or upper extensions are manipulated, chord qualities can change significantly.

The practical application of the chords I will discuss begins with the dyad, a two-note voicing which, for the purposes of this study, will represent the third and the seventh of a chord. The dyad is not a fully defined chord until a bass note is added. However, if that bass note is provided by another instrument in the ensemble the guitarist does not always have to play it. Some of the most masterful uses of third and seventh structures to this day were by guitarist Freddie Green, heard on such iconic albums as Count Basie Live at the Sands. Once a guitarist begins working with three to five note voicings, the chords created tend to lend themselves to trio and quartet settings where the guitar provides most of the harmonic accompaniment. Miami based guitarist and educator Tim Jago addresses this responsibility in his 2015 doctoral essay “The Role of the Jazz

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1 Frank Sinatra with the Count Basie Orchestra, Sinatra at the Sands, Reprise 1019, (1966), CD: Fly Me to The Moon.
Guitarist in Adapting to the Jazz Trio, the Jazz Quartet, and the Jazz Quintet"², mentioning the harmonic demands that are placed on a guitarist in the trio setting. Six note voicings are generally most applicable to solo guitar playing, though there are many exceptions to this rule. The immense musical freedom and sonic space solo guitar gives the performer allows both the timbral room and harmonic liberty necessary to play a dense six-note voicing. One must look no farther than the solo guitar work of Lenny Breau,³ a fingerstyle guitarist noted for his pianistic harmonies and approach, to hear these harmonic liberties.

**Relevance of the Study**

This study of guitar voicings is important in that it takes a novel approach to the creation of harmony that eschews the typical manner of learning rote chord fingerings, in exchange for a method that provides a greater understanding of functional harmony and voice leading. This method will be pertinent to advanced musicians as well as less experienced musicians. Detailed information will be offered with practical applications for those with less playing experience, while also offering ways to elaborate on this basic framework that will keep even the most advanced guitarists creating new sounds. The study will also be pertinent to non-guitarists, composers/arrangers, bandleaders, and band directors looking for a greater understanding of the function of the guitar as a solo and/or accompanying instrument in a variety of ensemble settings.

² Jago, Tim F., "The Role of the Jazz Guitarist in Adapting to the Jazz Trio, the Jazz Quartet, and the Jazz Quintet" (2015). Open Access Dissertations. 1401: 22-23.
Research Questions

There are many questions I have asked myself and my colleagues repeatedly while playing and teaching jazz guitar, and several of these questions are paramount in forming the breadth of my essay.

- How does one play through traditional jazz chord progressions on the guitar while avoiding stock or cliched harmonic devices?
  
  - How can a guitarist incorporate pianistic close intervals and cluster-like sounds into their harmonic palate, given the logistical concerns of playing seconds on the guitar?
  
  - Given the different sounds a chord symbol can imply, how does one best determine the density of chord voicing they wish to employ, and how does ensemble instrumentation and musical context affect these decisions?

  The first question is pertinent to guitar practice and performance. Avoiding common guitar chord shapes when creating harmonic accompaniment to a Tin Pan Alley standard or other jazz progression can lead to interesting new discoveries in the practice room. A system centered around additions to the third and seventh of major, minor, and dominant chord types can give one the freedom to explore this. The abovementioned concept helps a player develop the ability to voice lead through common jazz chord progressions in an improvisatory manner. This allows more flexibility in chord-melody playing with bass and drum accompaniment, as well as providing supplementary options when accompanying a horn or vocalist.

  The second question focuses on harmonies typically used by pianists, and how guitarists can achieve these sounds without the benefit of ten fingers and eighty-eight
keys. Strategies to achieve these pianistic voicings will center around the use of open strings, and the techniques with which to organize them.

My final question is pertinent to musicians, educators, and band directors who may not fully understand the sonic possibilities that the guitar occupies within their ensembles. Based on the relative densities of chords created in this study, I will offer suggestions towards the different contexts and instrumentations where their use may be best suited.
CHAPTER 2

LITERATURE REVIEW

To illustrate the importance of my proposed approach towards jazz guitar harmony, sources from varying mediums will be used. Print media from magazines such as Downbeat will be explored, that contain interviews with veteran jazz guitarists who describe their processes of synthesizing harmony and the challenges they face doing so. I will also demonstrate how countless well-known method books focus on a fingering-centric approach, rather than the inside-out method my study will provide. Many of these method books are wonderful and expansive resources, but their scope is often limited by the pervasiveness of stock fingerings and chord shapes. Finally, my review would not be complete without numerous recorded examples that demonstrate the importance of expanding one’s harmonic palette.

In its introduction, Mick Goodrick’s Almanac of Guitar Voice-Leading Volume One⁴ discusses what is “missing” from the rest of the book, namely fingerings and traditional musical notation. Goodrick goes on to say “The less that is explained, the more you have to do. (Get to do!) What you learn, and what that will lead to, is your own business, your own discovery, your own musical vision, your own musical direction, (and) your own musical individuality.” He maintains a similar tact in his Almanac of Guitar Voice-Leading Volume Two⁵, which focuses on more on clusters and shapes as opposed to the functional seventh chords and triads of Volume one. His quote about a

musician’s own musical discovery, and the way his information is portrayed and organized, both stand out as having a pertinence to my study. However, the information presented by Goodrick is different from mine and does not include some of the practical applications I plan to portray in this essay.

Both of Goodrick’s aforementioned tomes include disclaimers in which he warns against over-practicing some of his chordal passages, for the safety of the player’s hands. Some of the passages contain close intervals, which involve a stretch of the hands, and the intervals are varied from one chord to the next, so the ever-changing fingerings pose a similar risk when overdone. In an interview with Downbeat Magazine, jazz and fusion guitarist Allan Holdsworth describes a similar issue, of accommodating the closer intervals of piano chords on the guitar. Goodrick’s disclaimer and Holdsworth’s interview comments both point toward the issue of playing pianistic chords on the guitar, which I will address with my research.

Guitarist and pedagogue Ted Greene’s renowned 1971 book Chord Chemistry provides a unique look into his methods of chord creation, while also showing a number of practical applications of these. Veteran jazz guitarist George Van Eps published a 1980s series of method books titled Harmonic Mechanisms for Guitar, and they provide similar chordal techniques. While Van Eps’ three volumes are more extensive in their scope and undoubtedly ahead of their time, they show slightly fewer practical examples than Greene’s book. These are all wells of knowledge, but don’t begin with the core of a

voicing and build outward. By following my proposed plan of study, I aim to fill in gaps that are present in these books as well as many others.

The aspiration to create piano influenced cluster voicings are mentioned in several works. Two of them that focus on open strings are *Open-String Chord Voicings for Guitar* by Floyd Turner, and Mick Goodrick’s *The Advancing Guitarist*. In Turner’s book, a dictionary-like approach is taken by charting many chord types in every possible permutation that allows for use of an open string. This is an extensive read; however, it is limited in that no attention is payed to how each voicing sounds timbrally, range-wise, and/or density-wise when played. Goodrick’s book is more detailed in its mention of applications, but it is not as thorough in its scope with how to create the aforementioned voicings.

Of all the literature reviewed so far, nothing has addressed the issue of how a guitarist’s chords are influenced by the musical setting he or she finds themselves in. Tim Jago’s 2015 doctoral essay is a great resource in this regard, as he discusses the intricacies of playing guitar in four different musical settings. Jago does not specifically discuss the use of chord voicings in relation to these musical settings, choosing instead to focus on the more general elements of timbre, dynamics, texture, and communication/interaction. It is nonetheless helpful to my study though, as it illuminates differences between musical settings and what they require.

My literature review would be remiss not to mention musical examples and recordings that have exhibited the need for my study, as well as inspiring practicing and

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11 Jago, Tim F., "The Role of the Jazz Guitarist in Adapting to the Jazz Trio, the Jazz Quartet, and the Jazz Quintet" (2015). Open Access Dissertations. 1401.
thought on my topic. The solo playing of Joe Pass\textsuperscript{12} was critically acclaimed throughout his career by musicians and fans alike, and provides examples of a bridge between the older guitar traditions and todays modern masters. Lenny Breau and Ted Greene, both mentioned previously, were innovators in this style as well. They took the influence of pianists such as Bill Evans\textsuperscript{13} and applied those concepts to the guitar, creating unique and lush harmonies.

As the paper begins to examine duo and trio playing, the harmonic contributions of Jim Hall\textsuperscript{14} and Ed Bickert\textsuperscript{15} must be noted. Also influenced by pianists, they have become synonymous with subtle but intricate voice-leading and interactive trio/duo playing. Bickert’s use of a solid bodied Fender Telecaster guitar drew much attention throughout his career, and the sustain gained from playing this instrument is often attributed with being the one of the factors responsible for his pianistic touch.

Many other examples of quartet and quintet playing are provided in the methodology chapter of this paper, but the musical concept of Kurt Rosenwinkel\textsuperscript{16,17}, an acclaimed American modern jazz guitarist now residing in Germany, provides insight into approaching both quartet and quintet playing in a modern manner. For a more classic example of these instrumentations with the guitar taking more the roll of a horn player, the late jazz icon Wes Montgomery’s albums \textit{Full House}\textsuperscript{18}, and \textit{Smokin’ at the Half Note}\textsuperscript{19} provide excellent reference.

\begin{itemize}
\item \textsuperscript{12} Joe Pass, \textit{Unforgettable}, Pablo, (1998), CD.
\item \textsuperscript{13} Bill Evans, \textit{The Solo Sessions}, Milestone, (1989), CD.
\item \textsuperscript{14} Jim Hall, Jim Hall Live, Horizon, (1975), CD.
\item \textsuperscript{15} Ed Bickert, \textit{At the Garden Party}, Sackville, (2004), CD.
\item \textsuperscript{16} Kurt Rosenwinkel, \textit{Deep Song}, Verve, (2005), CD.
\item \textsuperscript{17} Kurt Rosenwinkel, \textit{The Remedy}, WOMMUSIC, (2008), CD.
\item \textsuperscript{18} Wes Montgomery, \textit{Full House}, Riverside, (1962), CD.
\item \textsuperscript{19} Wes Montgomery, \textit{Smokin’ at the Halfnote}, (1965), CD.
\end{itemize}
For references of how guitar fits into my final two example settings; big band and big band with strings, Freddie Green\textsuperscript{20} and John Abercrombie\textsuperscript{21} both provide exemplary work from opposite eras. Green was known for his work with the Count Basie Orchestra, playing sparse but rhythmic accompaniment. Abercrombie (outside of his own projects spanning his decades long career) has been featured with the likes of Vince Mendoza, and the esteemed Metropole Orchestra, two of the better-known examples of this instrumentation. The abovementioned musical and literary examples aim to influence a well-balanced study and should also provide the reader with further study in regard to my topic.

\textsuperscript{20} Frank Sinatra with the Count Basie Orchestra, \textit{Sinatra at the Sands}, Reprise 1019, (1966), CD: \textit{Come Fly With Me}.

\textsuperscript{21} Vince Mendoza, \textit{Epiphany}, EMI, (1999), CD.
CHAPTER 3

METHODOLOGY

In order to effectively answer my proposed research questions, I will spend much of the breadth of my essay building chord voicings by adding notes below and above the dyadic core of my intended chord. The chapters dedicated to this will provide chords I have built ranging from two to six notes, as well as information that allows the reader to synthesize their own voicings. Some discussion of jazz theory is necessary as well, particularly when we create slash chords that will consist of triads voiced over a bass note.

Open strings will be added to both our triad and dyad based chord voicings, to allow for the creation of richer harmonies that might not have otherwise been playable given the limitations of the guitar fingerboard. The main non-sonic difference between closed position voicings, and those which contain open strings, is that the latter are non-transposable. In a guitar’s standard tuning, the open strings retain the same pitch no matter what is played in conjunction with them. This differs from closed position voicings which will all transpose symmetrically across the neck.

My final chapters will discuss how the size of a chord effects its density. With this knowledge I will offer recommendations how a guitarist can apply the voicings they learn to a variety of different musical settings, and support these suggestions with some of the recorded examples mentioned in chapter two. I will define density as the perceived lushness and complexity of a voicing to a listener. This will be pertinent throughout my study, as the many ways and places to play identical pitches on the
guitar make its chords timbrally deceptive. The addition of chordal guitar playing to other instruments becomes far easier to comprehend once density has been studied.

The main scope of my study will begin in chapter four where I examine two note dyads on the guitar, and what they can imply. To begin I will discuss thirds and sevenths to three chord types- G major seventh, G minor seventh, and G dominant seven. The key of G is a logical place to begin, as it sits in the middle range of the guitar and allows for the addition of notes below and above the initial dyads as we proceed. What these thirds and sevenths imply will be examined in relationship to their root (G), but their many implications as rootless two note voicings will be discussed as well, such as in the comping of Freddie Green\(^{22}\)

The addition of two notes will follow in chapter five, creating four note voicings with predominantly roots below the dyads, and extensions above. This will create more full sounding complete chords akin to the “drop two” voicings played by underrated historic innovator Chuck Wayne\(^{23}\), among others, and used commonly in jazz arranging\(^{24}\). Through a general addition of notes above and below the third and seventh, we should also discover intervalllic shapes such as the four-part fourths described in Mick Goodrick’s *The Advancing Guitarist*\(^{25}\). With the addition of open strings, we should be able to create closer interval clusters surrounding the initial dyad. I will conclude the fifth chapter by introducing perceived densities of voicings,


\(^{24}\) Lindsay, Gary. *Jazz Arranging Techniques: From Quartet to Big Band*. Miami, FL: Staff Art Publishing, 2005.

as it will become evident at this point that certain four note chords sound denser than others containing the same number of notes.

The sixth chapter will introduce two more notes to our four note chords and delve further into the respective densities of these chords. There are many six note chord voicings commonly played on the guitar, but my writing will help illuminate why a triadic six note chord taught to beginner students can sound substantially less dense than a five to six note voicing found in jazz. To create five and six note voicings I will be predominantly adding one or two notes to chapter five’s four note voicings, while still understanding the relationship these larger chords have with the dyad that lies at their core. Due to the logistics of the guitar fretboard, these chords more than most others will rely on the use of open strings to achieve higher densities and fewer doubled notes. Guitarists such as Ben Monder and Tom Lippincott both demonstrate beautiful use of six note open-string voicings on their recordings At Night and Painting the Slow Train Brown. Studying larger voicings, their densities, and the effects created by the use of open strings, will provide a logical and seamless transition into my final chapter pertaining to practical applications of these chords.

To demonstrate viable applications of our new breadth of voicings, chapter seven will study their uses in a variety of musical contexts, presented below with their instrumentations. When referenced, “horn” can be taken to mean trumpet, trombone, or reed. For the purpose of this study, there are few differences between accompanying the various horns typically found in a jazz combo. Distinguishing

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26 Ben Monder and Theo Bleckmann, *At Night*, Songlines, (2007), CD: *Late by Myself*
between big-band and big-band with strings (orchestra) is of little difference to us in this paper, however the range of styles from traditional to contemporary will be taken into account.

SOLO – guitar unaccompanied.

DUO – guitar and bass/horn/voice/piano.

TRIO – guitar, acoustic bass, and drum set.

QUARTET – guitar, piano/horn, bass, and drums.

QUINTET – guitar, horn, piano, bass, and drums.

BIG-BAND/ORCHESTRA – guitar, piano/horn, bass, and drums, with the addition of trumpet, trombone, and saxophone sections. Optional string section.

Due to the lack of external harmonic influences from other musicians, solo guitar playing can utilise the most of what was discussed in the previous chapters. A guitarist left without the presence of bass, rhythmic, or harmonic accompaniment is free to occupy as much sonic space as he or she desires, heard in the solo playing of Ted Greene\textsuperscript{28}. John Abercrombie’s iconic recording of the jazz standard \textit{Alice in Wonderland}\textsuperscript{29} features an unaccompanied intro which employs a far more minimalistic approach than Greene’s.

Chordal guitar playing in a duo setting also offers much freedom, in varying degrees depending on instrumentation. When joined by a bassist, the guitarist is offered as much harmonic freedom as in a trio setting with bass and drums. However, the added rhythmic responsibility that comes with the lack of a drummer means chordal accompaniment may have to be sparser and more percussive. With a horn player or

\textsuperscript{28} Ted Greene, Solo Guitar, Art of Life, (1977), CD.
\textsuperscript{29} John Abercrombie, Current Events, ECM, (1986), CD: Alice in Wonderland.
vocalist, the guitar assumes more of an accompanying role and the chords chosen must reflect this. Even more, vocal accompaniment often requires harmonic choices to be slightly more conservative, depending on the preference and style of the singer and repertoire. Joe Pass and Ella Fitzgerald\(^{30}\) were a well-known guitar-vocal duo, and Pass provided accompaniment that was melodic enough to be supportive while still being creative and unique.

Trio is one of the most classic formats to feature a guitarist, and his or her harmonic palette can be demonstrated in countless ways. Earlier recordings by the likes of iconic American guitarists Kenny Burrell\(^{31}\) and Barney Kessel\(^{32}\) both provide great examples of sparser accompaniment, as well as occasional “shout chorus” style block chord playing, surrounding mainly single line bebop ideas. My study will show insight into this style of comping, and the way various other players have approached the trio between the 1960s and today.

Quartet and quintet deal with issues of sonic space, for which my study of voicing density will be of the utmost importance. These issues arise when there is a piano present, as guitar and piano often occupy a similar harmonic area. This is not an issue in quartet if there is no piano, as the guitar can then provide harmonic accompaniment for the horn. If piano is present in quartet or quintet it can also play a more horn-like roll, and voicings can be truncated to suit this. Guitar and piano comping at the same time is a unique and supportive sound, and when done correctly creates an attractive texture. The special


\(^{32}\) Barney Kessel, *The Poll Winners*, (1959), CD.
considerations needed for this technique are displayed constantly on Canadian guitarist Ted Quinlan’s debut album “As If”\textsuperscript{33}.

Big band music is one of the oldest continuing styles of jazz. From its roots in the swing era, it continues to employ a similar instrumentation today. I make note of the big band with orchestra, as this is another common iteration of the big band that has spanned most of the history of jazz. Guitar can play an integral role in both of these settings, but less experienced guitarists often have trouble knowing what chord voicings to play in the rhythm section, or what kinds of sounds and phrasings to use behind a string orchestra. Reference to the greats in both of these styles can be found in chapter two, and I will discuss techniques and examples for these textures in the main body of my work.

The densities of various chords, and how they apply to the aforementioned six musical settings, will be the conclusion to my study. However, I will augment it with my own recapitulations and findings. My experiences teaching and playing jazz guitar are what prompted the need for this study, and after it is complete I will prove its validity by sharing any further points I have learned.

\textsuperscript{33} Ted Quinlan, As If, Unity, (1998), CD.
CHAPTER 4

“THE DYAD”, TWO NOTE VOICINGS

As I start to discuss chordal harmony on the guitar, I will begin this essay with two notes, a chord structure I will refer to as a dyad. A dyad is defined as a group of any two musical tones. Depending on the pitches and context of these tones, they can give the sound of a particular chord in a particular key. The logical place to begin categorizing dyads as they would be played in a jazz guitar setting is by discussing the perfect fourth, and tritone (augmented fourth or diminished fifth) intervals. The perfect fourth can provide the sound of a major seventh or minor seventh chord, and the tritone can outline either of two dominant seventh chords, depending on the “root” or bass note heard beneath these dyads. The tritone can have diminished implications as well, but this will be addressed further along in my writing. For context and rationale behind the relationship of dyads and bass notes, I will begin with a brief introduction to basic jazz theory and harmony.

The simplest way to play a chord in jazz harmony while retaining the full sound of the chord is with a root, third, and seventh. Our aforementioned fourth and tritone dyads played on the guitar are only effective if the root of the desired voicing is heard elsewhere, likely played by a bassist/lower note instrument. This is because both the perfect fourth and tritone intervals can outline two separate chord types each. Take the fourth of F and Bb as an example: heard above a G concert bass note, this is the harmonic information of a G minor-seventh chord, F being the flat seventh, and Bb being the minor

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third. When the bass note is lowered to Gb however, these two notes assume different roles. A Gb major-seventh chord is formed with F becoming the major seventh and Bb assuming the role of the major third. In the case of the tritone dyad F and B natural, this outlines a G dominant-seventh chord when G is played beneath. The F is the flat seventh, and the B is the major third. When the bass note is shifted to a concert Db the dyad assumes its second possible application: a Db dominant-seventh chord, with the F providing the major third and the B natural (C flat) providing the flat seventh. This distinction has to be made early on in my writing, as the “2 note” chords we discuss at first will technically require a 3rd note to provide context.

To temporarily eliminate the aforementioned issues of context between dyads, I will discuss all of our initial few chord voicings in one key. Because of its central setting on the guitar and pleasant timbre this provides, G is a logical key to begin with. With the hypothetical bass note of G, perfect fourths give us the sound of a major-seventh chord (F# and B natural) or a minor-seventh chord (F natural and Bb). A tritone beginning on F natural will provide a G dominant-seventh chord. Major-seventh, minor-seventh, and dominant-seventh chords are the only chord types playable with just two notes and their root. Other chord types such as minor-seventh flat-five require a third note, the fifth, to be outlined fully. A G diminished sound can be implied with the tritone E natural and Bb, but this isn’t a true G diminished chord, as it could also imply a G minor-sixth chord. As a result of this, the E natural and Bb dyad heard over a G bass note requires either the seventh (F# in the case of the diminished-seventh chord and F natural in the case of the minor-sixth) or the fifth (Db in the case of the diminished-seventh chord and D natural in the case of the minor-sixth) to determine what chord it truly is. For a more in depth look
into the jazz scale-theory behind this, Mark Levine’s *The Jazz Theory Book* is an invaluable resource to less experienced musicians, and professionals alike\(^{36}\).

The dominant-seventh, major-seventh, and minor-seventh dyads we have created in the previous paragraph can all be played on the middle two strings (D and G) between the third and fourth frets. This also allows the player to reach a G bass note on the third fret of the low E string if desired. If we wish to invert our three dyads, while maintaining the pleasant timbre and consistent fingerings that the D and G strings provide, we must move further up the neck of the guitar to the area between the eighth and eleventh frets.

An inversion of a chord or interval implies the lowest note becomes a higher voice\(^{37}\). If we are to continue thinking intervalically, this means that our fourths become fifths, and our tritones remain tritones when inverted.

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CHAPTER 5
THE CREATION OF THREE AND FOUR NOTE VOICINGS

In the same way that the context of an added bass note below our two note chords significantly changes their chord type, additional notes above the dyad can change the chord type further, adding “extensions” to the chord. Extensions expand upon the triad or simple seventh-chord. They can be diatonic, i.e. 9ths, 11ths, and 13ths, or altered notes such as b9 or #11. By adding one to two notes to our dyads we will be able to create exponentially more voicings than discussed in the previous chapter, including our “missing” chords—namely the diminished seventh and minor seven b5 chords we were unable to fully outline with two notes. We will also be able to form conventional four note seventh chords which, feature the root, 3rd, 5th, and 7th (along with their inversions, such as “drop 2” style voicings) of a given chord. To tie these concepts together and conclude the chapter, introductions will be given to both open-strings and their implications, as well as how we perceive the densities of these new three and four note voicings.

Since they lack a bass note, the three and four note voicings we create will function as upper structures atop a hypothetical bass note or root. To maintain continuity with our previously discussed two note dyads, the root of all these chords will be a concert G natural. The context of when we would play a bass note and why will be explored later in this paper, but for now we can imagine the bass note as being played by a hypothetical other instrument, or as being played below the voicing on the low E string.

The remainder of this chapter will focus on manufacturing new voicings by adding one note at a time to our dyads from Chapter Four, but special attention will be
paid when we create chord types that are applicable to basic jazz progressions. Along with the aforementioned diatonic extensions that can be added to chords, alterations to the dominant seventh chord are some of the most common variations in jazz harmony. It is also a logical place to begin since its dyad is a unique tritone, not a perfect-fourth like that of our other dyads. The most practical dominant-seventh sounds, as well as their variations, appear when we place notes above the third (B) of our shell voicing and root. In keeping with the theme of varying a G7 shell, all of these additional notes will be placed above F, and B, creating a three-note chord.

The subsequent note of the chromatic scale after B is C, so it will be the first to be placed atop our shell voicing, giving us F, B, and C. This voicing gives us the 4th scale degree (C) atop our G7, which provides a suspended-fourth sound. Since the chord contains both the 4th and 3rd, it differs from the traditional suspended-fourth sound that commonly resolves to a dominant-seventh chord. The voicing we have synthesized contains more of a modal characteristic, born from the mixolydian scale, similar to that heard in the opening measure of Tim Miller’s piece “Flying”\textsuperscript{38}. Further contexts for each of our four note voicings will be provided and explored at the end of this chapter.

If we resume the addition of chromatic notes to our basic G7, the next available tone is C# or Db. This is the b5th scale degree of G, and since it is voiced more than an octave above the root, we can refer to it as the #11th. This shape (G, F, B, C#) is a common way to voice a G7(#11) chord on the guitar, which appears frequently in popular jazz standards. The G lydian-dominant (mixolydian #4) scale fits this chord perfectly, but it could technically be an altered or diminished-dominant sound as well due to its lack of

\textsuperscript{38} Tim Miller, Trio Volume Two, Avenir, (2008), CD: Flying.
upper extensions. The concept of multiple chord-scales fitting over one particular voicing will be delved into in more detail in the coming chapters, but this is a perfect example in which the addition of a b13, natural 13, and/or #9 could drastically alter the sound of our now seemingly vague voicing.

Raising our Db/C# to a D natural gives us an outwardly bland but nonetheless important stock G7 chord consisting of G, F, B, and D. This chord fits the mixolydian chord scale and is one of the plainer iterations of a G7 chord. That being said, it contains the 1, 7, 3, and 5, of the chord, making it a perfect introduction to a basic method of chord building that has been used on the guitar, piano, and in jazz arranging, for many decades. This method of stacking thirds (1, 3, 5, 7) is the basis of most jazz harmonic theory, and it can provide a breadth of voicings for the guitar when the order of the notes is scrambled. I will discuss this phenomenon later in the chapter and illuminate how it relates to our inner 3rd and 7th dyads.

A concert Eb/D# is the next note we can add to our ever changing G7 chord, and it brings a more specific twist than most of our previous notes. Though Eb is the flat-sixth scale degree, I will refer to it as the sharp-five since this is the more common nomenclature and the extension is once again voiced above the root. The illustration of extensions in jazz chord nomenclature generally follows the scale degrees verbatim, for example G7(#5). A notable exception to this rule is when extensions are described as degrees greater than an octave (i.e. G7b9) in order to explain that one would not voice them directly above the root of the chord. Two scales can commonly be played over our G7(#5) sound in a jazz setting: the altered scale, which is the seventh mode of Ab melodic minor, and whole tone scale. Both of these scales imply different extensions that
would be added to our current voicing, the main difference between the two being the 9. The altered scale contains an Ab or the b9 of G7. A whole tone scale starting on G would contain a natural 2\textsuperscript{nd} (A) or natural 9, giving us the codifying tritone and major 2\textsuperscript{nd} sound of the whole tone scale system.

A more consonant sounding chord, yet one that can be embellished to varying levels of dissonance, is the G7(13) sound we create when we add an E natural to our dyad and root. Since E is the natural 6\textsuperscript{th} or 13\textsuperscript{th} of a G dominant-seventh chord it lends itself to the mixolydian mode, making it diatonic to C major. This means many other chord tones of G7 can be added such as the 9\textsuperscript{th} to maintain its dominant-seventh sound, or even the 11\textsuperscript{th} to create a suspended-fourth sounding chord. If we want to stray from the key center of C major however, the addition of a #4 or #11 (depending on where the extension is voiced) will bring us back to the lydian-dominant sound discussed earlier on in this chapter. If the b9 or #9 are added to our G7(13) chord, we are presented with voicings that outline a “diminished-dominant” sound. This unique chord, and the scale that accompanies it, are well explained by Mark Levine\textsuperscript{39} when he discusses diminished scale harmony. When a b9 and/or #9 are present, the natural 13 that we’ve added to G7 is the codifying difference between an altered-dominant chord and a diminished-dominant chord. This altered-dominant versus diminished-dominant distinction will be addressed several more times in the conclusion of our G7 discussion, as it is a subtle yet important variance to be aware of in jazz accompaniment.

The three chromatic notes that follow the natural 13\textsuperscript{th} of G7 are of little use to us in this discourse, as they are either redundant (F is the 7\textsuperscript{th} and G is the root, both already

present in the voicing) or create a dissonance that is unwelcome in common jazz harmony (F# would give us two consecutive minor-second intervals). To hear the bland nature of the doubled notes, or to realize the dissonance created by the additional F#, one needs only to play these shapes for themselves on the guitar or piano. For now, I will move on to the addition of an A natural above our dyad and root, temporarily skipping the Ab which will be discussed in the conclusion to four note dominant chord creation. Concert A gives us the 2nd scale degree or 9th of the chord, and similar to the addition of the 13th, it fits within the consonant G mixolydian scale as well as several other more harmonically varied palates. Using only the most basic G, F, B, A, voicing, we have a chord that is subtly varied from our initial shell and root but contains no new harmonic material. This sound, especially when voiced in one of its inversions with the root on the 10th fret of the guitar, is utilised constantly in blues and R&B music as well as being heard in jazz. In one of his rare more featured moments, Freddie Green plays this exact voicing in the opening of The Count Basie Orchestra’s “Lil Darlin”\(^{40}\), albeit with the addition of a D below and an E above.

The alterations that can utilise a natural 9th while straying away from the mixolydian mode are the aforementioned lydian-dominant, and whole-tone sounds. An A natural fits within the mixolydian #4 scale discussed earlier in the chapter, as well as fitting within the whole tone scale I mentioned while examining the b13 of G7. The extensions b9, natural 9, and #9, are similar enough that jazz arranger Gary Lindsay categorizes them all as suitable substitutions for the root in the context of voicing a four-

\(^{40}\) Count Basie, Atomic Basie, Roulette, (1958), CD: Lil’ Darlin.
note chord above a bass note\textsuperscript{41}. Lindsay is quick to point out that this is highly dependent on chord function and context however, and for this reason I am saving the remaining two extensions for the following paragraph.

Directly above and below the previous addition of the natural 9\textsuperscript{th}, sit the b9 and #9 extensions. I am dealing with these in the same paragraph, as the ways in which they effect a G7 shell voicing are the same, at least in functionality. The second of these extensions is referred to as the sharp nine instead of a #2/b3 not only because it is voiced more than an octave above the root, but also because it can exist above a natural third, as is shown in the following context. Voicing these notes above our dyad gives us F, (3\textsuperscript{rd} fret) B, and Ab (4\textsuperscript{th} fret) or Bb (6\textsuperscript{th} fret). This is a functional way to voice the chord that also leaves space on the A and B strings to add additional chord tones and/or extensions, which is something we will delve into deeper when we turn these voicings into five and six note chords later in my writing. Our flat-nine and sharp-nine extensions now imply either an altered-dominant sound or a diminished-dominant sound, and the determining factor between which of the two sounds one hears is the presence of a flat-thirteenth or a natural-thirteenth. Our voicings, which currently omit the thirteenth, avoid this issue entirely and could accompany melodic material from both the altered and diminished scales. The somewhat ambiguous nature of our two voicings can be made a useful tool for broader accompaniment when one is not sure what kind of thirteenth will be heard melodically. We will transform this voicing into both an altered-dominant and a diminished-dominant chord later in my writing, but for now be aware of the benefits that accompany a broad in scope yet full sounding G7(b9)(#9).

\textsuperscript{41} Lindsay, Gary. Jazz Arranging Techniques: From Quartet to Big Band. Miami, FL: Staff Art Publishing, 2005: 85.
Examining the addition of notes to our major-seventh and minor-seventh dyads and root will be a quicker process than that of our dominant 7th explorations, as the number of available extensions in conventional jazz harmony are fewer when applied to these chord types. Adding a C natural to our Gmaj7 shape creates an uncommon but nonetheless noteworthy voicing, over which one could play melodies in the G Ionian mode. This sound is more pertinent to original compositions or personal practicing than to classic jazz repertoire, but if we raise the C to a C# or Db then we create a stock voicing for Gmaj7(#11). This chord; G, F#, B, C#, also contains the 1, 3, b5, and 7th of G major, so it can be applied to the same stacked thirds concept I mentioned previously and will revisit when we culminate this study of four note voicings.

Raising C# to D creates a generic yet full sounding Gmaj7, containing the 1, 3, 5, and 7, of the chord. Though providing few interesting extensions, this voicing too will be revisited in further discussions of stacked thirds and their inversions. When the D natural is raised to a D#, we hear the #5 of Gmaj7. The upper structure F#, B, and D#, can accompany both the G lydian-augmented scale (E melodic minor) or the G harmonic major scale, among other melodic systems. Our “3 note chord”, or dyad plus extension, F#, B, and D#, is a 2nd inversion B major triad, which provides a glimpse into creating “slash chords” (triads over alternate bass notes) through our unique lens of building from within.

Continuing to ascend chromatically, D# becomes E natural, and we have the natural 13th above our dyad and bass note. This provides colour to our initial voicing, without changing its harmonic information. Melodic information from both G ionian and G lydian remains acceptable over this voicing. The next two potential pitch additions
would be F, F#, and G natural. F# and G are redundant with the initial content of our dyad and root, and F natural would create a dissonance unwelcome in most traditional jazz harmony. The following pitch G# or Ab is the b9 of G major, and though this would often be an unwelcome dissonance, it is worth noting for its presence in some modern jazz and original compositions. Far more consonant is the natural 9 of the chord, A. This, much like the 13\textsuperscript{th}, provides color without changing any harmonic information present in the initial voicing.

The #9 or A#/Bb is less commonly heard on a major seventh sound, but when applied to our dyad and root it could suggest a Maj7(#9) sound coming from B harmonic-minor scale, or a diminished major-seventh sound from the G whole-half diminished scale. These are the extensions applicable to our Gmaj7 dyad, and the following paragraphs will explore the addition of notes to a G minor-seventh dyad using the same methodology.

The first voicings we will synthesize using the minor-seventh dyad will be the minor-seven b5 chord and the fully diminished-seventh chord, both of which we were unable to create using dyads alone in the previous chapter. The natural 5\textsuperscript{th} on the G minor-seventh chord we created in Chapter 4 would be a D natural, and to place it logically above our dyad we could play it on the 3\textsuperscript{rd} fret of the B string. To flatten or lower this pitch to the desired b5 of a minor-seven b5 chord, we simply bring it down a semitone to a Db (the second fret on the B string) and have created our voicing. The descriptive yet cumbersome designation “minor-seven b5” is often abandoned in favor of the term “half-diminished”, since the chord in question contains a diminished triad (G, Bb, and Db). Though they share a diminished triad, the diminished-seventh and half-
diminished chords differ in their seventh. In lieu of the F natural contained in the G-7b5 chord (a flat seventh), a G diminished-seventh chord would contain an Fb or E natural (a double flat seventh) giving it the notes G, E, Bb, and Db. The context in which the two chords are used is another way in which they differ. While a fully diminished chord commonly functions as a delayed resolution to the tonic or as a passing chord, a half-diminished chord generally functions as a minor II in the context of a II-V-I progression.

Practical applications of all the chords we create will be addressed further in my writing, but it should be noted that by using this chapter’s half-diminished and diminished-seventh voicings alongside the minor-seventh, major-seventh, and dominant-seventh voicings we created in Chapter Four, we are now able to play the accompanying progressions to most jazz standards in the Great American Songbook.

The hierarchy of which notes provide interesting and lush upper extensions, versus which are less sonically desirable, differs from major-seventh to minor-seventh chords. A key example of this is the addition of C natural, giving us the voicing G, F, Bb, and C. While the 11th (C) created a less practical voicing when added to Gmaj7, it gives us a lavish chord when played above Gmin7, that could be used to accompany the G Dorian, aeolian, or Locrian, scales. It is an open enough sound to fit into modal and modern jazz contexts, yet also fails to stray far enough from conventional chord building to limit its use in a 2-5-1 or other standard progression.

Though it strays from the minor sounds this section focuses on, I would be remiss not to address the addition of a B natural atop our dyad. This new ambiguous chord contains both minor and major thirds, therefore fitting both the diminished-dominant and altered-dominant scales. The subsequent addition after C, a Db, we have already covered
earlier in the chapter by creating a Gmin7(b5) sound, so I will move on now and wait until further in this writing to readdress that sound.

In examining the differences between a C and a D natural atop our dyad, it is worth mentioning that I categorize diatonic “color tones” as the seventh, ninth, eleventh, and thirteenth, of a chord. These are the notes that can give greater density to a chord, change its sound when altered, and also differentiate a more complex chord from a more basic triadic chord. In regards to that definition, a concert D natural atop our dyad provides a less colorful voicing than the Gmin7(11) chord we previously created, but it is also one of the already discussed voicings consisting of the 1, 3, 5, and 7, of the chord, so it will prove relevant later on when discussing these stacked-thirds style voicings. The addition of an Eb creates a chord that could fit into several differing musical contexts. Played beneath melodic information from the G aeolian scale, the chord would assume the sound of G-7(b6), heard often in the compositions of Kenny Wheeler\(^{42}\), among others.

Hearing our dyad alongside an Eb once again, this voicing could accompany two alternate melodic systems as well, G Locrian, with or without a natural 9\(^{th}\), and G Phrygian. Though it does not provide all of the harmonic information necessary to fully outline a G-7(b5) chord, there are many situations in which it would be suitable to voice this chord G, F, Bb, Eb, namely if the melody we are accompanying contains the b13 of the chord, Eb. Since there is not a 9\(^{th}/2^{nd}\) present in the voicing, this iteration of G-7(b5) can complement either a G Locrian scale, from the Ab major scale, or a G Locrian natural 9 scale, hailing from Bb melodic minor. The G Phrygian application of this chord turns it into a unique voicing for Eb/G. This chord can be voiced as a first inversion Eb triad, but

\(^{42}\) Kenny Wheeler, Music For Large and Small Ensembles, ECM, (1990), CD: Part VI, Consolation.
our chord contains identical harmonic information as well as the addition of an F natural amidst the triad. This provides color to the chord, without clashing with the triadic harmonic nature of the Eb/G sound, often heard in classical and pop musical lexicons.

When our G-7 shell voicing is presented with the addition of an E natural, we create a sound that is both colorful and useful, despite being limited to only two possible melodic systems. The most natural sounding and practical of these systems is G Dorian. The F proves we are not in the key of G melodic minor, the Bb gives us the minor 3rd, and the E we have added guarantees we are within the G Dorian melodic system rather than the Aeolian sound we heard with the addition of Eb. The only possible other application of this G, F, Bb, and E, voicing would be as a G7 diminished-dominant sound. This would imply a B natural as well, since the G half-whole diminished scale contains a minor and a major third. The B would presumably be voiced under our current voicing, so as to avoid a b9 interval clash between the Bb and B natural.

Continuing to ascend the chromatic scale from E natural, we are presented solely with redundant notes until we reach Ab or G#. This addition is not practical from the standpoint of our dyad providing a minor-seventh sound, but if we were to imagine this voicing as a dominant-seventh sound without the third scale degree, then our Ab or G# provides a practical and colorful addition to both the altered and diminished-dominant harmonic systems. The final tone we can add to our F and Bb dyad is an A natural voiced a major 7th above the Bb. This gives us the 2nd scale degree, or 9th of both G Dorian and G Aeolian. The key difference between these scales is whether the 6th scale degree is natural (E) or flatted (Eb), and our dyad plus A natural entertains either of these possibilities.
A two-note chord exists that is a hybrid between our major-seventh and minor-seventh dyads, and it is F# and Bb. Over our G root I will refer to this as a minor-major-seventh dyad, though it can imply several other less common chords and scales as well. A concert G melodic minor scale fits this dyad, offering us many of the remaining chordal sounds we have not yet covered in the preceding chapters. The three other scales that this dyad can accompany are G harmonic-minor, G whole-half diminished scale, and the G “augmented scale”. The G augmented-scale, which consists of alternating minor-thirds and minor-seconds, will be discussed in further detail once it’s relation to the minor-major-seventh dyad is examined. Rather than add notes to this dyad chromatically as we did with our dominant-seventh, major-seventh, and minor-seventh chords, I will instead explore the addition of various notes to it and how they outline the aforementioned four scale systems.

Examining non-redundant notes of the G melodic-minor scale atop our G minor-major-seventh dyad, we are presented with the tones C, D, E, and A. Both D and A natural provide welcome extensions above our dyad, giving the chord its fifth and ninth respectively. They are both unobtrusive, as the D is a non-color-tone, and the A is voiced high enough above the dyad’s Bb to avoid an unwelcome clash. While C and E are both part of the G melodic-minor scale and technically fit over our dyad, they give a more ambiguous and uncharacteristic sound when voiced in the range we have been discussing. This is a result of them both being a tritone above the notes of the dyad, and thus creating an “unstable” sound. Ways to carefully add these colorful notes to a G minor-maj7th chord will be addressed later in this writing when the topic turns to larger chords and their applications.
If the E natural present in G minor-maj7 is lowered to an Eb, we are presented with a voicing that exhibits the codifying difference between the G melodic and harmonic minor scales. Though the addition of Eb establishes our chord is no longer part of G melodic minor, the voicing it creates is not the most effective chord to represent G harmonic minor, since it could lend itself to the remaining two chord types that fit with our dyad as well. More chordal information needs to be added to fully outline a G harmonic-minor sound, and this will be discussed in further detail in the following chapter.

The notes of our dyad are all contained within a G whole-half diminished scale, and this sound proves drastically different than G minor-maj7 when outlined correctly. The non-redundant additions available to our dyad from this scale are C, Db, Eb, E, and A. A concert Db added to our dyad gives us the most descriptive voicing for this harmonic system, as Db is not present in any of the other scales that can fit the dyad. We now have the notes Gb (F#), Bb, and Db, which gives us a root position Gb triad over our G root, creating one of the “slash chords” discussed earlier in my writing. This unique sound can complement only two scales in the context of jazz, the abovementioned G diminished scale, and the sixth mode of B harmonic minor. These scales imply the chords G diminished-major7, and Gmaj7(#9)(#11) respectively.

The final potential application of our G minor-major-seventh dyad is its use accompanying chords from the G augmented scale system. Referring to this application as a “scale system” is apt for our purposes, as there is no single voicing that can imply the G augmented scale sound. Instead, several upper structures can help denote this harmonic system. The augmented scale is a six-note symmetrical scale created by alternating
minor-thirds and minor-seCONDS. in the key of G the notes would be G, Bb, B, D, Eb, and F#, which gives us our dyad and three color tones. of these color tones, Eb and D can both be found in other scales, but the B natural atop our dyad is unique to the augmented scale. Its ambiguity in sounding both major and minor at once gives our dyad a sound that best defines augmented harmony.

i will conclude the chord creation portion of this chapter with a series of practical four note voicings that we have already touched upon in previous paragraphs. These are the “1, 3, 5, 7” style chords and their inversions, which have entered our dialogue organically each time we have placed a fifth above and root below our dyads. Because of the “building from within” nature of this paper, the chords we previously created have been inversions of the 1, 3, 5, and 7 needed to fully outline a seventh-chord. When D (the fifth) and G (the 1, or root) were added to our G7 dyad, the full voicing became G, F, B, and D, or the 1, 7th, 3rd, and 5th, of the chord. The 1, 7, 3, and 5, pattern can be found when discussing all of our potential chord types, and though these voicings do not always contain the most color tones, they sit in a pleasant register on the guitar and are a helpful place to begin when playing through basic jazz progressions. To extrapolate on this concept fully, the inversions of each of these chords give us three more voicings containing the same harmonic information. in the case of Gmaj7, voiced G, F#, B, and D, the next inversion would be B, G, D, and F#. This pattern repeats itself two more times, giving us the following four chords.
It should be noted that the examples above are in the common “caged” format for guitar voicing diagrams. When a number appears to the left, it pertains to the fret at which this particular voicing will be played at.

Since all of the above chords contain the 1, 3, 5, and 7, they provide a practical application for jazz chord-theory that is seldom taught on the guitar. Similar to our basic dyads, we can see how flatting the seventh (F#) to an F would give us G7, and lowering the third to a Bb would turn this voicing into a G-7. This can be applied to any of the chords in the above diagram, and by altering the fifth we can create numerous other voicings as well. A final extrapolation of this concept is that there are twenty-four permutations of 1, 3, 5, and 7.

\[
\begin{align*}
1,3,5,7 & \quad 3,5,7,1 & \quad 5,7,1,3 & \quad 7,1,3,5 \\
1,5,7,3 & \quad 3,7,1,5 & \quad 5,1,3,7 & \quad 7,3,5,1 \\
1,7,3,5 & \quad 3,1,5,7 & \quad 5,3,7,1 & \quad 7,5,1,3 \\
1,5,3,7 & \quad 3,7,5,1 & \quad 5,1,7,3 & \quad 7,3,1,5 \\
1,3,7,5 & \quad 3,5,1,7 & \quad 5,7,3,1 & \quad 7,1,5,3 \\
1,7,5,3 & \quad 3,1,7,5 & \quad 5,3,1,7 & \quad 7,5,3,1
\end{align*}
\]

I have described these in the simplest terms in order to make them as customizable as possible. They could be played in any key to create 24 major-seventh chords, and by applying basic jazz theory we can see how to turn these into dominant, minor-seventh,
half-diminished, and diminished-seventh chords. I will revisit a number of these four note voicings further along in this writing, when discussing the creation of larger chords and the contexts in which to use them.

All of our previously discussed dyads are playable as fretted notes, meaning they do not require open strings to execute properly. Though almost all of our aforementioned extensions can be fretted as well, many of the notes discussed previously could benefit from being played with an open string. More information about the use of open strings will be provided further in my writing, but we can already begin to see in these examples how playing a note as an open string can make space available in which to add an additional tone. If our original G7 dyad is played with F on the D-string but with B as an open string, skipping the G-string, then the entirety of the G-string is freed up allowing any of our abovementioned extensions to be voiced in the middle of the chord instead of above it. This will be of the utmost importance when we begin creating five note chord voicings, as with the addition of notes the limits of the fretboard seemingly increase. A prime example of this phenomenon is the first row of 1, 3, 5, 7 style voicings mentioned in the previous paragraph. The execution of closer intervals such as seconds is made far easier with the use of open strings, as these intervals require larger finger stretches ordinarily. The topic of open strings will be readdressed in more detail throughout the remainder of this writing, but it is important to introduce now due to its vitality in the discussion of densities.

The concept of density in this paper will be kept purposefully broad, so as to address both the listeners’ and the players’ perception of harmonic denseness. Our discussion and definition of color tones earlier in this chapter provide a glimpse into the
framework of which notes make a voicing sound more or less dense, and this will be readdressed throughout remainder of my writing. The color tones, intervals, and tension within a voicing can influence both how it is perceived by the listener, and how it affects other musicians in varying musical contexts.
In order to create five and six note chords, I will focus primarily on adding notes to many of the voicings created in the previous chapter. Some will retain their chord-qualities but benefit from the addition of colorful extensions, while others such as our previously discussed diminished-dominant and altered-dominant will take on newer and more specific functions with the addition of extra notes. The logistics of creating larger voicings will require the use of open strings, and this will be addressed as well. With these larger chords, a discussion of density and timbre will be crucial, as well as how this relates to the context in which they are used.

Following the order in which we expanded upon our two note chords, we will begin with dominant-seventh chords, and our F, B, dyad. Our initial addition to the dominant-seventh dyad in chapter five was a C natural. This is a logical place to begin this chapter as well, since it brings us to the addition of diatonic tones in G mixolydian. Within the context of jazz music, the most distinct chord created using this scale is a G7sus sound, which contains the aforementioned C natural. I differentiate G7sus from other mixolydian dominant sounds, because the clash between the notes B and C produces a denser and more colorful voicing. A “pure” G7 sound worth noting is the voicing G, F, B, and D, which contains the 1, 7, 3, and 5 of the chord. I mention it because it can be applied to the twenty-four permutations mentioned last chapter, and because it could be apropos for musical settings such as pop, rock, or blues, where more lush sounding extensions are not always desired. To turn it into a five-note chord, I will
use the same methodology that will prevail throughout this chapter and see which notes can be added above our highest note, D natural. Which notes to add vary depending on musical context, but two options that stand out immediately are the open E string, or an A natural a perfect-fourth above this.

The open E string introduced in the previous paragraph illuminates a different use of open strings than just to help us play closer intervals; open strings can also be used to make room for the addition of other diatonic tones that would have been impossible to finger otherwise. If we take the B atop our dyad and play it with the open B string rather than on the fourth fret of the G string, we have the entire reachable range of the G string available to insert additional notes.

As shown above, playing our dyad using the open B string makes room for the addition of an A natural and open E to create a colorful G7 with the 9th and 13th extensions. In the final diagram I have raised the B to a C to create a G7sus sound, while retaining the colorful 13th extension above. It is worth noting that the upper structure we create in the last diagram is identical to an Fmaj7 chord. If the C in the final diagram were to be played on the G string lieu of A, it makes room for the open B to be added, giving us one of the abovementioned G7sus voicings that contains a lush clash between B and C.

The introduction of additional notes to our four note chords created in the previous chapter does not only have to occur on the B and E strings. Additions on the A
string can provide a unique timbre due to their proximity to the root. If we are focusing on a three-note chord or just a dyad, then the A string can change the root of a chord as well. The phenomenon of changing the root holds particular importance when discussing dominant-seventh chords, since their dyad is a tritone. This means that each dominant-seventh dyad technically has two potential root notes a tritone apart, because they share identical harmonic material at their core. This occurrence is responsible for the “tritone substitution” in jazz and is why it works. A tritone substitution is when a dominant chord in a progression is replaced with a different dominant chord a tritone away, for example D-7 Db7 Cmaj7, instead of D-7 G7 Cmaj7. Any of our three note G7 chords from the previous chapter can be heard over a bass note of Db7, however the extensions on chords other than our initial dyad will drastically change. An example of this is our G7 altered sound F, B, and Eb, which when played atop a Db becomes a simpler Db7 (9) chord. The Eb that was the colorful flat thirteenth of G7 assumes a plainer diatonic role above Db.

With additions to our four-note chords on the A string and high E string we arrive at our six-note voicings. Since these chords can contain up to half of the available pitches in the chromatic scale, they have the potential to be very specific. Take these four voicings as examples: the first is a dominant-seventh sound matching the mixolydian scale, and the second is unique to the whole-tone scale. The third is diminished-dominant coming from G half-whole diminished scale, and the fourth can only be G7 altered, hailing from Ab melodic-minor.
The final three chords displayed above are perfect examples of the level of specificity we can achieve with larger voicings, since they each have only one potential scale choice that fits over them. Whether or not we desire this level of specificity depends on musical context and personal preference, and these choices will be addressed in greater detail during my final chapter.

The same principal of adding notes to the A and high E string can be applied to our three and four note major-seventh sounds as well. Similar to the mixolydian and diminished-dominant voicings mentioned above, the open B and E strings can be utilised in many Gmaj7 voicings as well. The B string is the 3rd of Gmaj7, so if we use it when voicing our dyad then the G string is freed up to add any extensions we can reach. An unobtrusive but colorful example of this that uses the open E as well is G, F#, A, B, and E. This chord could accompany both G Ionian and G lydian scales. To create a more lydian specific voicing, we can leave our dyad on the middle two strings and add the #11 (C#) above this as we did in chapter five. To turn this into a five note chord we can add the open E above, and to add a sixth note we can play a concert D below this on the A string. If the C# in this voicing is raised to a D# (Eb), we have a dense way of playing Gmaj7(#5), though in this instance the D natural should be omitted to avoid an unpleasant sounding b9 interval within the voicing.
Returning briefly to our simple Gmaj7(#11) chord consisting of G, F#, B, and C#, we can see that flatting the third (B) gives an upper structure identical to a Gb major triad. This Gb triad atop a G root was discussed in Chapter Five and can be either a diminished major-seventh chord coming from G whole-half diminished scale, or a Gmaj7(#9)(#11) hailing from B harmonic minor. By adding other notes to our upper structure and root, we can avoid this ambiguity altogether and create full voicings that demonstrate either of these sounds specifically. The key difference between the two sounds is that Gmaj7(#9)(#11) contains a major third (B) alongside the Bb found in the G diminished major-seventh chord. We can voice this note on the A string between the root G and the F# of the upper structure, giving us G, B, F#, Bb, Db. A second way to play this chord is to voice the minor third atop our abovementioned Gmaj7(#11) chord, giving us the notes G, F#, B, C#, and Bb.

Continuing in the same order we followed in Chapter Five, the next and final chord quality to build are our minor chords. Based on considerations of density and color, the most practical minor-seventh voicings in this particular key will often omit the A string, and skip straight to additions above our dyad on the B and E strings.

These are four practical and diverse ways to voice G minor-seventh, that retain the dyad at their core. The exception to this is the fourth voicing, which places the seventh (F) as the highest voice on the E string. The first two voicings above are minor-ninth chords,
and the second chord contains the natural sixth of G Dorian. This natural sixth is present in the third voicing as well, however it is realized as an open string in this particular example to allow for the 11th (C) to be added. The second and fourth examples above can be subtly changed to accommodate G Aeolian, if the flat sixth is added. In example two this would mean flattening the E natural on the B string, and in example four it would mean playing an Eb on the D string instead of the open D. Before moving on to harmonic and melodic minor voicings, this paper would be remiss not to discuss at least one example that utilizes the A string. If we voice the third (Bb) below the seventh of our dyad on the A string, then we can add the 9th and 11th on the G and B strings respectively, giving us an F major triad upper structure above our G and Bb. This is a colorful and practical iteration of G-7(9)(11) which can suit many musical situations, modern or traditional.

To expand upon our minor-major-seventh dyad further than in the previous chapter, we can create many five and six note minor voicings that are similar to some in previous paragraphs but suit G melodic and harmonic minor instead of the G Dorian scale. In the fifth chapter of this writing, chords relating to G harmonic minor were discussed. A four-note voicing of G, F#, Bb, and Eb, was addressed, but it was noted that this is not an ideal sounding chord. A more colorful sounding way to voice this to place the Bb of our dyad on the E string and fill in the chord with stronger note choices.
This voicing has a diminished sound as a result of its core notes F#, C, and Eb, however the G natural and Bb that enclose these notes assure the listener that we are in the G harmonic minor scale system.

The G melodic minor scale system is a broader sound that allows for more extensions and variations within the voicings. The first two iterations of G-7 which feature the 9\textsuperscript{th} atop our dyad and fifth can be altered to accompany the G melodic minor scale, by simply raising the seventh to an F#. These voicings both sound colorful and equally dense when the fifth (D) is added on the A string as well, creating a six-note chord.

The previous chords created in this chapter can all be utilised when playing both modern and traditional jazz, and are produced by adding scale tones to chords we have already created. When interpreted in a slightly more conceptual manner, this process of adding notes to pre-existing voicings can also be a useful tool in composition. My 2015 piece entitled “The Bones” began as a chord progression, consisting of arpeggiated five and six note voicings accompanying a legato melody. All of these chords were chosen for the melodies they create when arpeggiated, and therefore they are not always easy to identify or assign a chord name to. This way of writing also made for a sequence of chords that stray from those of a traditional jazz progression. Below are six bars of the
accompaniment from my composition, and those are followed by chord diagrams to show where these voicings sit on the neck of the instrument.

It should be noted that the chord diagrams above include a fourth voicing that isn’t present in the musical excerpt. This is the final chord of an earlier section of the piece, which demonstrates the chord creation techniques we are examining, so for this reason I have included it. It is also a fitting example of how open strings change the texture of a chord, since it shares the same three-note upper structure as the first two examples but sounds dramatically different. If the root is moved from the open E to a G# on the fourth fret, we recreate our first chord a major third lower.

Though I initially sought to write something through-composed, rather than a progression that can be reduced to chord symbols, each of the four chords above could
indeed accompany a particular scale system. It was through this logic that the highest note of each of these chords was added on the E string, since in their initial introduction at the beginning of the piece they begin as five note voicings. The first voicing does not possess the sound or function of a C7 altered chord, but all of the notes do fall within a Db melodic-minor scale, so the addition of an Ab (G#) on the E string was a fitting one. The upper structures of the first, second, and fourth voicings above are identical, but relate differently to their roots. As a result of the guitar being tuned in perfect fourths, that particular interval is easier to grasp under the fingers since the notes are adjacent. The open strings in the last chord allow the upper structure to remain the same, while giving the player a physical respite since they are now playing the same structure with two fretted notes instead of four. Each of the highest notes of these chords were realized through two considerations; their relation to the harmonic information of the initial five note chord, and where they lie under the fingers. These are essentially the same two considerations we followed when creating more functional five and six note chords, yet the abovementioned examples show just how far this concept can be taken. It is now time to examine practical uses and applications of all of the concepts discussed in these previous chapters.
CHAPTER 7

CHORDS VERSUS CONTEXT, WHAT TO PLAY AND WHEN

To best categorize the applications of the various chords created in this paper I will discuss their uses in a number of musical contexts and provide several musical examples of each of these. Organizing the chapter in this manner will serve several functions. First of all, it provides a means for guitarists to determine where and why they might use a particular new voicing. A related use for this information would be for a bandleader or music teacher, who is faced with the often-ambiguous task of synthesizing a role for the jazz guitar in his or her group. Thirdly, a reader who fits into neither of the aforementioned groups may still be curious to hear practical examples of the types of chords we have created in this paper.

The logical place to begin discussing practical applications of our new chord voicing vocabulary is unaccompanied solo guitar. It is in this setting that a guitarist has the most freedom to use larger voicings without occupying another musician’s sonic space, while retaining the ability to play single lines and smaller chords as desired. When several smaller chords such as our dyads are played in a row, the listener is required to imagine any missing harmonic information on their own. The intimate nature of solo guitar makes this phenomenon a useful way to draw the audience into the performance, while also varying sonic texture and density. The fact that these voicings are easier to play allows for greater improvisational freedom when compared to creating a chord solo on the spot using larger voicings.

Though it is no easy feat to improvise using the five and six note chords created in chapter six, they are a welcome addition to many solo guitar arrangements, as there
are no other musicians for their density to potentially clash with. A good example of this is the dense chordal intro modern jazz guitarist Ben Monder plays on the track “Hematophagy”, from his 2015 release Amorphae. This album is not entirely comprised of solo guitar works, but there are several solo tracks, and several tracks performed duo with drums. These duets with drummers Andrew Cyrille and Paul Motian allow for much of the same harmonic freedom as solo guitar playing, but require slightly different considerations since there is more sonic space occupied.

An example of solo playing that features dense larger chords, as well as many smaller voicings and single lines mentioned earlier in this chapter, is New York guitarist Peter Bernstein’s treatment of the jazz standard “I Love You”. Bernstein uses open strings, dyad-type chords, and varying densities of voicings, while also addressing details such as dynamics and timbre, to create a unique arrangement of a song that has been recorded many times throughout history.

Chordal jazz guitar playing in a duo setting varies greatly depending on the instrumentation present, so we will briefly examine four instruments commonly heard alongside the guitar in order to explore all possible applications of our voicings. The closest duo configuration to the solo playing discussed in the previous paragraph would be the guitar alongside a horn player or vocalist. Accompanying either of these unique sounds require different considerations, namely the more supportive role a guitarist must assume when playing with a vocalist. This is not to say that a guitarist can be less supportive with a horn player, or that all vocalists require special care

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44 Peter Bernstein, Live at Smalls, SmallsLIVE, (2013), CD, I Love You.
when being accompanied. Rather, the intimate nature of the voice as an instrument 
brings attention to several things such as providing melodic support, accommodating 
lyrics, and dynamic considerations. Often these considerations are less obvious when 
accompanying a saxophone, trumpet, or trombone. Nuances in the lyrics of a jazz 
standard, original song, or any other form of music with words, can easily be 
trounced by overactive accompaniment. A different album to feature Ben Monder, 
Theo Bleckmann’s 1996 release *No Boat*\textsuperscript{45} exemplifies very effective guitar 
accompaniment of a vocalist. The first A section of their duo treatment of Cole 
Porter’s “*Every Time We Say Goodbye*” uses guitar voicings that are lush but do not 
get in Bleckmann’s way, while the B section features simpler, more supportive chords 
that place the vocal melody note at their apex, bringing attention to the lyric. This is 
different than the way John Scofield accompanies Dave Liebman on the ballad 
*Autumn in New York* from Liebman’s release *If They Only Knew*\textsuperscript{46}. Scofield’s 
accompaniment is still supportive, but many of the ways he voices the chords to 
Liebman’s dense reharmonization of the standard feature dissonant notes below the 
melody that could potentially throw even the most qualified vocalist off track.

Two remaining duo formats to examine are the very common bass/guitar duet, 
and piano/guitar duet. An album that is a rich resource for examples of creative and 
interesting guitar/bass duo playing is the 1978 release *Live at the Garden Party*\textsuperscript{47} by 
Ed Bickert and Don Thompson. Bickert’s playing illuminates many aspects of 
successful duo playing, namely the seamless transitions between larger and smaller

\textsuperscript{47} Ed Bickert & Don Thompson, *At The Garden Party*, Sackville, (1978), CD.
chords, as well as between rootless voicings and those with a bass note. Guitar and bass duets give a guitarist the opportunity to play larger chords with a bass note when accompanying a bass solo, and sparser rootless voicings when playing the melody or soloing. The main difference between this configuration as opposed to a guitar/bass/drums trio is that a guitarist may occasionally have to sacrifice a larger more interesting chord in favor of a smaller chord to provide a more rhythmic accompaniment.

A timeless example of piano and guitar playing duo is the iconic *Undercurrent* album by Bill Evans and Jim Hall⁴⁸. This 1962 release contains many creative and interesting examples of the interplay between the two instruments, and the special care this requires given their timbral similarities. Hall illuminates an interesting way of maintaining sonic space between himself and Evans, using chords of a medium to high density, but with a brighter tone and an acoustic quality which separates the guitar and piano timbrally. This is achieved by strumming his electrified archtop guitar with a plectrum, similar to the way one would strum an acoustic guitar.

The traditional guitar trio is established by adding the drum set to the aforementioned guitar bass duo. This does not technically change anything harmonically, but it does influence our chords by changing the soundscape of the bandstand. The guitarist is afforded tremendous harmonic liberty due to the absence of another chordal instrument, but must do his or her best to not crowd the bassist. This can be achieved by being very aware of when to play voicings with the root and when not to.

⁴⁸ Bill Evans and Jim Hall, *Undercurrent*, United Artists, (1962), CD.
By adding a horn to the guitar trio, we create a drastically different setting, albeit only augmented by one more musician. The guitarist now must divide his or her time between being at the forefront of the band, and accompanying the horn player or vocalist. If they are to assume a more rhythmic role with their accompaniment, then the sparser dyads and three-note chords from chapter five suit this role perfectly. However, if they wish to throw harmonic curveballs in the direction of those they are accompanying, then there is no one stopping them, as is shown in the playing of veteran Canadian guitarist Lorne Lofsky with saxophonist Kirk MacDonald’s quartet\(^49\). One of the first piano-less quartets to feature guitar was that of jazz legend Sonny Rollins, and his album *The Bridge*\(^50\) has many extraordinary examples of Jim Hall making the most of the sonic space afforded to him due to the lack of piano accompaniment. On this album he plays many smaller dyad-type shapes, which take on a larger-than-life sound due to their rhythmic placement. Hall also often augments these smaller shapes with open strings, which create clusters that sound pianistic in nature.

The addition of piano to the guitar quartet creates freedom and challenges simultaneously. Guitarists share the same sonic space as the piano and must not interfere harmonically, yet their role becomes in a sense easier with many of the chordal responsibilities lifted. There are several roles the guitarist can assume, notably becoming akin to a second horn and adjusting their tone to suit this more single-note oriented position, or, finding a harmonic niche in which to fit alongside

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\(^{49}\) Kirk MacDonald, The Atlantic Sessions, Koch, (1997), CD.

\(^{50}\) Sonny Rollins, The Bridge, RCA Victor, (2015), CD.
the pianist. Wes Montgomery alternates between both of these rolls seamlessly on his 1962 album *Full House* which features him playing horn-like melodies next to frontman Johnny Griffin, as well as sparse yet rhythmically integral chordal playing behind the solos of pianist Wynton Kelly.

A similar ambiguity of where the guitar should fit within a band’s sonic space exists in the context of the jazz big band. This massive group generally features a quartet rhythm section of piano, guitar, bass, and drums, backing up trumpets, trombones, and woodwinds. The rhythm-section work of guitarist Freddie Green has become synonymous with what to do in the swing iterations of this style. Green played mainly two and three note voicings which contributed significantly to the bands rhythmic feel, yet also contained subtle yet pertinent harmonic information. He would utilize chords similar to our dyads, with or without bass notes, and play a consistent quarter-note pulse alongside the rhythm-section and horns.

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51 Wes Montgomery, Full House, Riverside, (1962), CD.
52 Count Basie, Atomic Basie, Roulette, (1958), CD.
CHAPTER 8
RECAPITULATION AND CONCLUSIONS

My own experiences teaching and playing are what inspired this study. I intended to organize my thoughts on chord creation, as well as to quantify how guitarists make the harmonic choices they do. In teaching I have sought to explain chord creation in a manner that is both concise and thorough. There is a dichotomy between the instant gratification of a dictionary style method book that lists how to play specific chords, and the infinite possibilities of a more open-ended tome that gives the reader building blocks to create a multitude of voicings. In the former, we are presented with voicings that will suit the situation in question, but with little suggestion on potential alterations. In the latter, an open-ended study gives us an infinite framework from which to practice chord creation. Through this rationale, my study does not include every chord in every key, but in chapters five and six does provide a reader with both a practical bottom line (G, F, and B is G7) as well as ways on which to build upon this framework (G, F, B, E, and A is a more colorful iteration of this chord). All of the voicings in G can be moved up and down the fretboard to change their respective keys. They can also be transposed across the fretboard, but one must be wary of the G to B string interval of a third. The following is an example of a simple 2-5-1 progression in G major.
We can see the dyads and roots at the core of A minor-seventh, D seven, and G major-seventh, as discussed in chapter five, and extensions added according to the scale sounds we wish to employ, as shown in chapter six. By experimenting with varying chord-scales, the reader can alter this progression while retaining the dyads and roots.

A more advanced player may note the varying levels of specificity from voicing to voicing. Though this example was created with A-7, D7altered, and Gmaj7(#11) in mind, the first of these chords could accompany A Locrian (A-7b5), the second could be either D7alt. or D diminished-dominant, and the third could technically suit a G lydian-augmented scale. Masters like the aforementioned Jim Hall and Ed Bickert were very aware of this phenomenon, and it is what made them sought after accompanists. That hyper-specific look at the voicings we play on guitar would not be present if this paper only presented “prefabricated” examples of chords, and failed to build these voicings from their core. A third and final example of the same progression with varying extensions providing still different levels of specificity follows below.
There are countless variations on this progression which provide differing colors and levels of density, but they will not be listed in this paper as the list would be too vast, and the reader already possesses the framework from which create these sounds on their own.

My hope in writing this paper is that it will appeal not only to jazz guitar players but to curious guitarists of other genres, bandleaders, educators, and even non-musicians with an interest in the mechanics of the guitar. A rock or classical guitarist with a basic understanding of the fretboard could use our dyads with roots alone, to play through much of the standard jazz repertoire. Likewise, a bandleader unsure of what role his guitarist should occupy can reference the seventh chapter of this writing and be directed to practical examples of successful guitar accompaniment spanning over many decades. An educator can employ these same practical examples and organize the teaching of chords in the same order that this writing outlines.

The method of organization illuminated in this paper is the way I now teach harmony on the guitar. I spent many hours in my earlier development practicing this material, attempting to expand my own harmonic vocabulary by building chords from within. My hope is that this study will enable students to reach these valuable conclusions in a timely and organized fashion, and to use these techniques to expand their ability to find the perfect chord for any given musical moment.
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