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UN-RAVELING THE RELATIONSHIPS BETWEEN PIANO AND ORCHESTRA  
IN *LE TOMBEAU DE COUPERIN*

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## ABSTRACT

In this thesis I examine the relationship between piano and orchestra with a particular interest in how knowledge of orchestral textures affects the musical decision-making of a pianist. Such an examination requires introductory discussions of related topics, including historically interesting relationships between the piano and orchestra and how the pianist controls sound. Brief and necessarily non-exhaustive versions of these discussions are included, but the focus of this thesis is score analysis of piano and orchestra versions of *Le Tombeau de Couperin* by Maurice Ravel, which focuses on how instrumentation choice in the composer's reimagining of the same work might influence the pianist who finds him or herself dissatisfied with the decisions he or she is able to make using only the piano score.

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## **Chapter 1**

### **Introduction and Background**

#### **Anecdotal Remarks**

Though I am primarily a pianist, I have also performed as a violinist for much of my musical life. While study of a secondary instrument is becoming increasingly common among pianists, I suspect that the amount of time I have spent within the ranks of various student and semi-professional orchestras is at the very least unusual. At some point, I noticed that even intermediate student pianists readily accomplish certain musical tasks that pose serious difficulties for even professional orchestras. For example, I have seen a conductor spend several minutes tuning a single fully diminished seventh chord, whereas pianists consider intonation the responsibility of the technician. This difference is especially noticeable when orchestral instruments are playing in extreme registers—where even basic tone production is a mark of proficiency. Conversely, even intermediate student orchestras readily accomplish other musical tasks that have posed lifelong challenges for some of the best pianists who have ever lived—most noticeably achieving a great variety of color.

I have also noticed that I (and piano students of my own) are more readily able to change sounds when instructed to do so in terms of imitating orchestral textures. One recently memorable example was in JS Bach's *Italian Concerto*, BWV 971, where I was instructed to play one section as if it were an oboe accompanied by strings in the left hand.

With a single instruction, I was able to achieve the correct dynamic, articulations, and balance between the various elements of the texture.

### **Historical Relationships Between Piano and Orchestra**

Before discussing the specifics of how timbre or (perceived timbre) of individual notes might be controlled, it is important to remember that the piano is the *most polyphonic* of all acoustic instruments. For the purpose of classifying instruments, *polyphony* refers strictly to the ability of an instrument to produce multiple pitches concurrently; the same word is used with a related (but distinct) meaning later in discussions of compositional technique. By contrast, nearly all orchestral instruments are primarily monophonic. The stringed instruments used in orchestras have four strings, which can resonate independently at different pitches, and woodwinds occasionally use multiphonics and other extended techniques to produce multiple pitches. Chromatic percussion most closely approaches the polyphonic capabilities of the piano (relying on the ability of the player to manipulate multiple mallets, but even this group of instruments tends to use a sparser texture than the piano does<sup>1</sup>.

For this reason, piano music tends heavily (with a few exceptions) to consist of at least two layers of notes and/or chords; indeed, an accomplished pianist can manage even four or five layers through use of the sustain pedal. This ability is exploited not only in piano

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<sup>1</sup> Piston, Walter. *Orchestration*. New York: Norton. 1955. Print.

compositions, but also in piano transcriptions of music originally for orchestra. Prior to the advent of recorded music, piano transcriptions of orchestra music were even more common. Any music which was to be heard needed to be produced in real time, and there was already more music composed for orchestra than access to orchestra concerts. As such, many were exposed to orchestra music only through transcriptions for piano (most famously by Franz Liszt who championed Berlioz's *Symphonie Fantastique* and Beethoven's symphonies).

Therefore, it can hardly be regarded as coincidence that many of history's greatest composers of orchestra music were trained as pianists. Mozart, Haydn, Beethoven, Brahms, Debussy, and Bartok, for example, all left enormous marks as composers in both keyboard and orchestra music. (Johann Sebastian Bach also left equally important contributions in keyboard and large ensemble repertoire, prior to the advent of the modern orchestra and the modern piano.) Even composers such as Gustav Mahler (a titanic orchestral composer whose piano works are now heard less frequently) were considered formidable pianists—leaving surviving piano rolls.

Today, such transcriptions (called “reductions”) see particularly common use as accompaniments for concertos, but piano reductions of other sorts of orchestra music are occasionally seen and performed. While an accompanist performing a reduction might not have access to the same tonal palette as a conductor, the reduction generally provides the underlying harmonic and rhythmic framework not producible by a single player of any instrument other than a keyboard. How these layers are (or are not) managed has an important (even if subtle) impact on the timbre of the sonic construction. This impact is easily appreciable by even non-musicians.

### The Approach of This Thesis

In Western Art Music, interpretive decision-making considers not only the performer's sense of aesthetic, but also guessing what the composer means. Taken to the logical extreme, textual literalism in music treats composers almost as if they were prophets of abstract sonic perfection—and pieces as if they were Platonist objects to be summoned from the instrument as accurately as possible. From this view, it follows that a composer might be the most qualified to provide additional instruction for the playing of his own music. For this reason, the compositional output of Maurice Ravel provides a particularly interesting point of departure, as he is perhaps the best-known composer to orchestrate his own piano music—especially if orchestrations are to be instructive to the pianist hoping to play them as orchestral instruments might do.

Of his major piano works, he has orchestrated movements of *Miroirs*, *Le Tombeau de Couperin*, *Valses Nobles et Sentimentales*, and the famous *Pavane pour une infante défunte*. Of these, the *Alborada del Gracioso* (the fourth piece from *Miroirs*), the *Pavane*, and *Le Tombeau de Couperin* are a part of the respective standard repertoires in *both* of their forms. In fact, even piano works that are not considered important orchestral works (or parts of the standard repertoire) were known to receive experimental orchestral treatments—*Une Barque sur l'Océan* (the third piece from *Miroirs*), for example, also received an orchestration by the composer, though it is rarely heard today due to the extreme difficulty in playing it and the mammoth forces required. Ravel was also known to orchestrate piano music by other composers—with perhaps the most famous example being his 1922 reworking of Modest Mussorgsky's piano suite *Pictures at an Exhibition*. From these observations, we might infer



that Ravel saw orchestral colors as being latent in piano music. Therefore, for pianists, considering his interest in color, it is basically impossible to understand Ravel's concept of sound without an examination of his orchestra music—this applies to tone, and above all, to management of texture.

At this point, it might be helpful to note a few things about Ravel's musical background. He was, at least at some point, a formidable pianist. Though most surviving piano roll recordings of him are not flattering (at least in my own opinion), it is still clear through his piano compositions that he had an intimate knowledge of piano technique not inferior to those of other pianist-composers such as Beethoven or Debussy, even if his actual playing was sometimes unrefined due to his lack of practice time.<sup>2</sup>

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<sup>2</sup> Ravel, M. (2009). *Le Tombeau de Couperin: VI. Toccata*. On *Maurice Ravel Plays Ravel* [CD]. M. Ravel (Performer). Hallandale, FL: Essential Media Group.

## Notation Conventions

In the following sections, measure numbers refer to the piano solo<sup>3</sup> and orchestra<sup>4</sup> versions published by Durand et Fils (reprinted by Dover Publications). When measure numbers differ, measure numbers more closely adhere to the piano version. Rehearsal numbers are taken from the orchestral score.

First and second endings are assigned the same number and a suffix (for example, m. 31a would represent the first ending, and 31b would represent the second ending) if not spelled out. Measures outside bracketed endings for repeats are assigned their own numbers (except where the structure clearly aligns with something else from the piano score).

All references to pitch classes by letter name use American conventions and refer to pitch classes. All references to specific pitches use the octave numbering system where middle C = C4.

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<sup>3</sup> Ravel, Maurice. *Le Tombeau de Couperin* [for piano solo]. In *Le Tombeau de Couperin and Other Works for Piano Solo*. New York: Dover Publications, 1997. Print.

<sup>4</sup> Ravel, Maurice. *Le Tombeau de Couperin* [for orchestra]. In *Le Tombeau de Couperin and Valse Nobles et Sentimentales in Full Score*. New York: Dover Publications, 2001. Print.

## Chapter 2

### Pianistic Control of Perceived Sound

In order to undertake a detailed analysis on how piano tone is produced and varied, I decided to start with what has been implemented in electronic imitations of the acoustic piano, which almost always use sample-based synthesis. While additional features continue to be added, I focus my discussion on the ones that are widely implemented in most 88-key instruments designed to replace acoustic pianos in a professional setting. The features of the MIDI (musical instrument digital instrument) protocol which are most important for our discussions are key velocity, note on/off messages, and the pedals (most importantly the sustain pedal)—many of these are incomplete, though, and here I will also introduce extensions of these parameters that will be important in later discussions. Conversely, MIDI can include messages such as aftertouch and pitch bending and other such parameters which are not possible to use on a real piano, and therefore not relevant to this discussion.

#### Key Velocity

Acousticians have historically believed that the tone of a piano depends only on a single factor: the velocity with which the hammer strikes the strings<sup>5</sup>. Though acousticians are beginning to reexamine this view, key velocity can be safely considered among the *most*

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<sup>5</sup> Báron, Julius. “Physical Basis of Piano Touch.” *J. Acoust. Soc. Of America*. 30.2 (1957): 151-152. Print.

*important* determinant of piano tone for single notes and chords in which all notes are played and released at the same time. Among those challenging this traditional view is Hideo Suzuki, who pointing out that such a view does not account for deformation in the hammer shank. While his empirical data do not indicate that other factors other than the hammer velocity to any mathematically appreciable extent, he did also find that key noise, keyed noise, and other typical “noises” have a profound effect on the tone *perceived* by survey respondents<sup>6</sup>.

Regarding chords: if all notes in a chord are sounded and released at the same time, the overall tone will be determined by overall volume (*total* key velocity) and relative balance (the differences between key velocities of individual notes inside the chord). In this way, balance can be considered a function of key velocity. However, this does not account for situations where chords are simply a harmonic meeting between different parts of the texture—where one part might consist of long notes, where another is moving notes, or even staccato notes. In even these cases (the simplest ones), the equality or distinction between the relative volumes of notes can have a profound effect on the perceived sound.

Generally speaking, when a chord has many notes played simultaneously, pianists choose to highlight one or two of them. This is accomplished by keeping some fingers firmer than others, thereby transferring more weight or energy into the key (and then to hammer and finally string)—especially when the highest pitched note is the melody. This gives the impression of a melodic instrument being accompanied by another section; however, it is

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<sup>6</sup> Suzuki, Hideo. “Spectrum analysis and tone quality evaluation of piano sounds with hard and soft touches.” *Acoustical Science and Technology* 28.1 (2007): 1-6. Print.

possible to make notes more equal for the effect of an entire section. This might be appropriate for example, when the melody is voiced in parallel intervals.

### **Note On/Off Messages**

On an acoustic piano, tone is produced by the hammer striking the strings, causing them to vibrate (simulated by a MIDI “note on” message), when the key is released, a damper extinguishes the tone, causing the vibration to stop (simulated by a MIDI “note off” message). While this certainly better than nothing and produces satisfactory sounds in many cases, many of the subtleties are lost, especially with the release of the keys<sup>7</sup>. Though I was able to find information of software pianos and sample libraries that include release noise from the keys and dampers<sup>8</sup>, any way of measuring the *upwards key velocity* has been experimental at best, even though the keys can be released either silently (slowly) or loudly (quickly).

This can have a profound effect on perceived articulation—for example, *staccato* is sometimes thought to refer to a short duration of the string sound—but psychologically, release noise from the key often reinforces this perception. If key release noise is heard at the end of a quiet piece or passage, this also elicits extreme cognitive dissonance in the audience. While it can be argued that in this latter case, the loss of this information in a recorded MIDI

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<sup>7</sup> White, Paul. “MIDI Basics, Part 1.” *SOS. Sound On Sound*, Aug. 1995. Web. 05 Apr. 2016.  
<[https://www.soundonsound.com/sos/1995\\_articles/aug95/midibasics1.html](https://www.soundonsound.com/sos/1995_articles/aug95/midibasics1.html)>.

<sup>8</sup> Senior, Mike. “Software Pianos.” *SOS. Sound on Sound*, Jan. 2008. Web. 05 Apr. 2016.  
<<http://www.soundonsound.com/sos/jan08/articles/softwarepianos.htm>>

file is a good riddance, the assisted perception of staccato will also be missing from a file from the same recording.

## Pedals

On a real piano, the sustain pedal also allows other strings to resonate sympathetically, allowing *at least* a second kind of tone available in the tonal vocabulary of an instrument, even on a single note. It is also typically used to allow notes whose keys are no longer being depressed to continue to ring. On a typical MIDI imitation, the sustain pedal only delays the “note off” messages until the pedal is released, instead of using a different set of samples (which would make the imitation more accurate). Premium software pianos and sample libraries sometimes switch to different samples (accounting for some degree of sympathetic resonance) when the sustain pedal is depressed but still, simulation of sustain pedal depth is far from mature. This is unfortunate because on a real piano, subtle changes of perceived dynamic level can be accomplished with various depths of pedal without changing key velocity, due to the accumulation of sound (though too much happens to be undesirable if harmony changes result in the accumulated sound containing many dissonances).

The *una corda* pedal (also called the *soft pedal*) shifts the piano action over such that the hammer strikes only a single string per note (as much of the piano is triple-strung); the single-strung notes also are struck with a less impacted part of the felt, producing a warmer sound. Like the sustain pedal, the *una corda pedal* is variable in depth on a real piano—it is, in fact, possible to obtain *due corda* (two strings), by depressing this pedal to a lesser degree. In fact, on a real grand piano, the perceived sound can be altered by moving this pedal in real

time. Even though the strings which have been struck are not modified in their resonating (until they are struck again), the overall impression—due to the audience’s focus on the notes being struck at the time—accomplishes this.

Ravel often refers to this pedal as *Sourdine* (literally “mute”), which is mechanically not quite as correct when applied to grand pianos. This term more correctly refers to devices that are coupled to the resonators to obstruct or dampen the vibrations (such as those used for stringed instruments and trumpets, and sometimes percussion instruments). On upright pianos, a layer of felt is sometimes inserted between the hammers and the strings, which also could be an accurate use of the term. For this reason, even non-Italian composers will use the terms *una corda* or its abbreviations. However, it is obvious what Ravel means when he writes this.

Lastly, the *sostenuto* pedal, functions much like the sustain pedal, but with one important difference: it sustains only the notes whose keys are depressed as the pedal is depressed, allowing other notes to be played with different articulations. This is possibly the most convincingly simulated parameter, as it is either on or off on a real piano as well.

### **The McGurk Effect**

The parameters described until now have all related to the physical basis of piano tone waveform. However, this is only part of what goes into a live performance, which includes a visual component for sighted persons (who make up a majority of the population at the time of this writing). In many cases, the visual component can even override the aural component. Most famously, McGurk and MacDonald demonstrated this phenomenon by

recording audio of a human voice articulating a syllable and dubbing this audio over a video of the face articulating different consonant. They found that subjects were able to correctly identify the consonants based on audio alone, but nearly always heard the incorrect consonant when dubbed with “incongruent visual speech.” In other words, human brains merge incoming audio-visual information into a single precept.<sup>9,10</sup>

Applied to piano, it follows that for some visual elements can signal events that are not acoustically happening—for example, it may be possible to have the audience perceive releases of notes which are, in fact, being held in the pedal. Additionally, notes that should sound the same (i.e. are played with exactly the same key velocity) might be made to sound different by visual cues, such as size and speed of the motions, and the shifting of weight from the torso into keyboard (or lack thereof), and even the body language of different kinds of releases which are both silent.

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<sup>9</sup> McGurk H., MacDonald J. (1976). Hearing lips and seeing voices. *Nature* 264, 746–748 10.1038/264746a0

<sup>10</sup> Tiippana, K. (2014). What is the McGurk effect? *Frontiers in Psychology*, 5, 725.  
<http://doi.org/10.3389/fpsyg.2014.00725>



## Chapter 3

### General Features of Various Orchestral Instruments

This section provides an oversimplified discussion of the idiomatic tendencies of the instruments used in the orchestration of *Le Tombeau de Couperin*. While each instrument is capable of its own range of timbral variety, the typical associated sounds are often most helpful for the discussion to follow. Information in this chapter is adapted from Samuel Adler's book *The Study of Orchestration*<sup>11</sup>.

#### The Woodwind and Brass Families

The woodwind section includes the flutes, oboes, clarinets, and bassoons. Different pitches are achieved in two fundamental ways: embouchure and fingering. Embouchure refers to the physiological mechanism that affects lip pressure and airflow speed, and selects the register, relative to the range of the instrument; lower lip pressure produces lower frequencies, and higher pressure produces higher frequencies. Fingering refers to depressing and releasing keys along the length of the body of the instrument to change the wavelength of a standing wave. Multiple pitches can be produced using a single fingering (such as the one used to achieve the longest possible resonator length); these pitches are generally members of the same overtone series.

The flutes are the soprano instrument of the woodwind family, and they have the "purest" sound of all the instruments in the orchestra. In other words, their characteristic waveforms most closely resemble sine waves of any orchestral instruments. Physically, the flute is unusual among the woodwind family in that it is no longer made out of wood and it does not use any kind of reed. They

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<sup>11</sup> Adler, Samuel. *The Study of Orchestration*. 2nd ed. New York: W.W. Norton, 2002. Print.

are the most agile of all the wind instruments and experience extreme changes in tone with variations of register. In lower registers, they are dark and quiet and are only audible only in a thinner texture, though this use is less typical. In the upper register, they are brilliant and commanding (sometimes shrill)—and it only possible to play loudly. The flute is frequently typecast in melodic passages of serene beauty. The most commonly used accessory instrument is the piccolo, which plays an octave higher than written, thereby extending the upper range of the family. To imitate the sound of a flute at the piano requires slow speed of attack and release to minimize the associated noises, and minimal pedal should be used; one way of accomplishing this is to use softer parts of the finger, such as the pad rather than the tip. This much easier to accomplish in legato passages. Imitating a flute might also involve more literally interpreting lifts between slurs, as the flute requires a great deal of breath to play.

The oboe is the alto member of the family, and is in many ways, the perfect opposite to the flute. Many of its characteristics owe to its nature as a double reed instrument. Oboe waveforms vary widely between players as compared to those of other instruments, but always possess more complex overtones than the flute. Furthermore, oboes can play extremely long passages on a single breath, allowing for longer phrases. It is sometimes perceived as nasal especially in its lower registers, noting that it becomes gentler and loses its “pungency” towards the top octave (unlike the flute). Adler notes that it is a popular doubling instrument, lending cutting power to instruments that might lack it. It is heavily featured in many passages of *Le Tombeau de Couperin* as a melodic instrument in its own right; to imitate the sound of the oboe requires a faster attack speed than the flute, but similarly slow releases—as such, this might involve using firm areas of the fingertip. Its accessory instrument is the English horn, which extends the range down a fifth; the English horn uses a bulb-shaped bell, which gives it a warmer tone than the oboe in its bottom register; otherwise, the sonic features are very similar.

The clarinet is most often used as the tenor member of the family, but this is in some ways misleading, as it has the widest and most uniform range of the woodwinds—unique in its ability to play both *pianissimo* and *fortissimo* at both its lowest and highest registers. The clarinet uses a single reed. The lowest register, called the *chalumeau* register is deep and rich and blends well with strings; the middle *throat tone* register is comparatively “pale” (though a skilled player can mask this); the upper register is called the *clarino* register, which is “bright, incisive, and expressive” and gradually gives way to a top register which is shrill and uncharacteristic. Notably, the word *clarino* comes from the diminutive name for “little trumpet” even though the instrument has become the “nightingale of the orchestra.” In many ways, the clarinet bridges the gap between the oboe and the flute, and so the pianist might favor a more balanced approach to tone production. The clarinet notably uses several versions to play in different keys, such as the “regular” A and B-flat clarinets for sharp and flat keys, respectively. The uses a larger variety of accessory instruments, which are not discussed here as they do not see use in *Le Tombeau de Couperin*—however, it is worth noting that Ravel uses the Bass Clarinet extensively elsewhere.

The bassoon in some ways resembles the oboe owing to their shared nature as double reeds with conical bores. It is the bass instrument of the woodwind family. The changes in tone with register also vary much like they do with the oboe, though it is generally less nasal. In the bottom fifth, it is extremely difficult to play quietly, though it becomes sweeter in its midrange and becomes more suitable for doubling (and less suitable for melodic solo lines) towards the top of its range. It lends itself to staccato playing and stronger attacks than other orchestral instruments in the bass register, and so many of the pianistic discussions from imitating an oboe are transferable here. Its accessory instrument is the contrabassoon, which extends the range downward, and sees use in Ravel’s *Ma Mère l’Oye*, but not in *Le Tombeau de Couperin*.

### The Brass Family

The brass family is similar in principle to the woodwind family in that it changes pitches using embouchure (in these cases, the lips buzzing against one another) and varying the length of the air column. However, instead of changing the length of a single resonator, brass instruments use valves to direct airflow through different paths (of which one at a time is used), except for the trombone, which uses a slide. The brass family is capable of producing some of the loudest sounds of the orchestra, and so they are generally the most easily heard when all instruments are playing. In *Le Tombeau de Couperin*, Ravel uses two horns and a single trumpet. Trombones, euphonium, baritone, and tuba are not used.

The horn (sometimes “French horn”) uses the most unique mouthpiece among the brass instruments, and is sometimes grouped with the woodwind section owing to similarities in tone, which is darker and more full-bodied than the rest of the instrument. While the horn has the widest range of the brass family, quiet playing is extremely difficult at both register extremes of the instrument. Horn tone can also be affected using the hand inside the bell, further darkening the sound. Horns are typically not agile instruments, and in *Le Tombeau de Couperin*, they are generally not used as melodic instruments, but rather as extra weight for thicker textures. For these reasons, other elements of the texture should first inform the desired color for foreground elements and the presence of the horn carries an instruction to allow a slight addition of arm weight to whatever other technical elements are chosen. Also worth mentioning is Ravel’s choice to use the horn on the melody for the first statement of the theme in his orchestration of *Pavane pour une infante défunte*.

The trumpet is often typecast as the herald of royalty—it uses a cylindrical bore and is the most piercing of all the brass instruments. The tone of a trumpet can also be modified using various mutes, which remove some of the upper mid-range frequencies of the audible spectrum. Unfortunately, the closest impression of muting on the piano gives an extremely different impression,

so this is not transferable to the piano without comparatively invasive modifications to the mechanism of the piano. However, it may be wise to select some other sound (such as oboe) to replace it. Though it *can* play softly and loudly at all parts of its register, it has a tendency to always be loud if unchecked. The imitation of a single trumpet over some other orchestral texture at the piano involves very strong firmness and fast attack speed in the trumpet's melodic notes and comparative taming of other elements of a texture; when the pedal is used, release can follow extremely closely after the attack noise as well. However, this occurs comparatively rarely in *Le Tombeau de Couperin*, where the trumpet is, like the horn, used mostly as if it were part of the woodwind section or as a doubling instrument for melodies—in these cases, the presence of trumpet suggests firmer finger(s), possibly without the implications of attack speed.

### **The String Family**

The string family forms the basis for what most people consider an orchestral sound, including violins, violas, cellos, and basses. This family carries two distinctions: multiple players in a section play from the same part (in unison), the different members of this family most closely resemble each other. These instruments do not use an air column, but strings, whose lengths are varied by stopping them with the fingers of the left hand; this distinction actually allows the string family to produce the widest variety of sounds, and allows the piano to most closely imitate the sounds produced by the string family. Typically, the string is energized by a bow (rather than by hammers, as on a piano), but plucking (*pizzicato*), and striking with the stick of the bow (*col legno*) are also possible. *Pizzicato* and *col legno* are percussive effects, most easily imitated as departures from typical tone production on the piano, by a slight increase to attack speed, and sharp reduction of notated duration—even fingernail noise might be considered permissible for *col legno* (though it is

not used in *Le Tombeau de Couperin*). *Pizzicato* is also sometimes imitated by adding a slight roll to chords (especially when they span over an octave).

Certain effects, however, more closely resemble other instruments. For example, orchestral strings are able to produce harmonics where strings are touched lightly at nodes, allowing both parts of the string to vibrate rather than only the part in contact with the impulse (whether it is the bow, stick, or finger). This more closely resembles the tone of a flute—other sounds, such as *sul tasto* and *flautando* (which involve bowing on or closer to the fingerboard) and *sul ponticello* (involving bowing in contact with the bridge) can also be considered to be modifications in the direction of the flute tone. Mechanically, the action might be moved closer to the edge of the string to simulate *sul ponticello*, but implementing this might be quite invasive.

Many factors of bowed string tone are not imitable at the piano at all—vibrato, for example, involves oscillating the fingers to rapidly change string length. This makes the sound warmer, with minimal changes to the actual composition of overtones; while the pedal can be used to make a sound warmer, the sustain pedal use does not appreciably change the frequency of the perceived pitch and changes waveform in ways vibrato does not.

## Chapter 4

### A Listener's Guide to the Piano Suite

Ravel biographer Arbie Orenstein describes the composer as “a miniaturist, who could, on occasion, convincingly fill a large canvas.<sup>12</sup>” *Le Tombeau de Couperin* is a suite of six pieces, which are basically miniatures. Ravel said that the suite honors the general spirit of 18<sup>th</sup> century French music, using the name of Couperin not to represent an individual (or even the several composers who formed the musical Couperin dynasty) but as synecdoche. In addition to the epoch, each movement is dedicated to a friend who died fighting in World War I.<sup>13,14</sup>

The Prélude is approximately in rounded binary form. Stewart Gordon describes it as pentatonic<sup>11</sup> with colorations that modern audiences hear as relating more closely to the minor mode. Gillespie describes its contents as “suave counterpoint and liquid ornaments.<sup>10</sup>” Rhythmically, it is nearly a perpetual motion, which creates a vacuum of attention to be filled by distant modulations. Structurally, the first few bars serve as an introduction, followed by a false theme at measure 5. While these gestures are pleasant, the true theme does not emerge until m. 14, starting in an extremely chromatic version of B Major, but finishing in an equally chromatic version of A minor, where it is stated again. A second motive, starting with the

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<sup>12</sup> ed. Orenstein, Arbie. *A Ravel Reader: Correspondence, Articles, Interviews*. 1990. New York: Dover Publications, 1990. Print.

<sup>13</sup> Gillespie, John. *Five Centuries of Keyboard Music*. New York: Dover Publications, 1972. 337-43. Print.

<sup>14</sup> Gordon, Stewart. *A History of Keyboard Literature*. Belmont, CA: Schirmer Cengage Learning, 1996. 389-98. Print.

first dotted quarter note emerges at measure 22 (in C major!) and triggers the crescendo, which spills over into the repeat of this section. Next, Ravel uses the texture from the introduction to spin a middle section in distant harmonies, visiting areas of non-functional harmony, and using chords borrowed from G minor and F minor, hardly staying in a single key area for more than two bars at a time until the return of the theme at measure 58, where the opening theme is stated in G# Minor (for a measure), before moving F-sharp minor, and finally back to areas which might be considered “normal” for a piece in E minor.

The Fugue uses typical major structural features in the expected places, including a compact exposition and a coda. After the first statement of its subject, it introduces a countersubject in m. 4 to accompany the second voice, giving a real answer in the dominant key. The third voice takes its turn stating the subject in the tonic, nearly immediately—dispensing with nearly all episodic or transitional material, except for a measure where the top voice states the countersubject before the cadence in the dominant key (mm. 7-8).

Still, several other features of this fugue are remarkable. Firstly, it is nearly free of truly episodic material; only in mm. 13-14 and m. 21 do no voices play any version of the subject or countersubject, and the former, in fact, creates a composite impression of the countersubject in the top two voices. Secondly, modal (and otherwise bizarre) harmonies obscure the harmonic areas explored. Since form is typically governed by harmony, Ravel’s use of modal mixture to deftly weave through various keys in quick succession disrupts any possibility of predictability. In this fugue, he explores not only typical keys such as the dominant (B Major and minor), relative major (G major), the submediant (C major), and the subdominant (A minor), but also more distant ones such as D major, managing to include even E-flat major and F minor in the *stretto*, if only for a beat or two. Still, the exploration of



the dominant is the most extended (lasting from mm. 30-37) and the least harmonically unstable. Finally, the way Ravel manipulates expectation and tension is most evident in his treatment of *stretti* throughout the course of the fugue. In the exposition and following material that meanders through various harmonies, false *stretti* are implied using the smallest fragments of the melodic contour defining the subject (such as in m. 11 and in m. 24). To further highlight the importance of the passage exploring the dominant, Ravel writes the first true first *stretto*, where two voices play whole versions subject separated by only a single bar (instead of two, as in the exposition). A false entrance (m. 43) prepares the next stretto in m. 43 where the middle voice enters only a single *beat* after the first. Both voices continue into the countersubject in mm. 46 and 47 (where they are joined by the third).

In m. 48, the middle voice enters on the subject only a single eighth note after the first. The stretto at m. 50 again separate the voices by a quarter note, but inclusion of all three voices and the fragmented nature of the subject<sup>15</sup> give the impression of a flurry of entrances, venturing to the most adventurous harmonies before the cadence signaling the coda at m. 54. The coda consists of two *stretti*: one using the countersubject in all three voices (separated by a beat) and another using the subject in all three voices, separated by *a single eighth note*. In each case, Ravel adds or subtracts a single layer of complexity, whether harmonic or textural—counterintuitively using the most complex texture to express the simplest of harmonic ideas.

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<sup>15</sup> Each statement of the subject includes five slurs that begin with accents. Of these, four are played following a rest, giving the impression of multiple “entrances” per statement.

The Forlane, sometimes considered the compositional highlight of the suite, is in a modified-rondo form. It is texturally the most diverse of the pieces, but harmonically, the least adventurous (though plenty of non-functional chords are used, the context remains firmly in E minor for much longer than any other piece). The refrain (mm. 1-29) uses the dotted rhythms typical of a dance with this title; in the first full statement of this theme, Ravel modulates to G# major, before stating the theme in G# minor, followed by F# minor, and finally returns to E minor. In the first episode (mm. 30-52), he visits D# major but returns to E minor for a truncated statement of the refrain (mm. 53-60), which excises the modulation. The second episode is a ternary section in and of itself. It begins in B minor, but cadences in E major, giving rise to the most unstable section of the movement, in which B and E fight for dominance. At first, it seems that the return of the first section of this episode signals a victory for B minor (m. 85) until it cadences in E major again (m. 92). This cadence ushers in another statement of the refrain (m. 93-120).

After this, a two-part coda takes place. The first part (mm. 121-136) uses the dotted rhythm as a fanfare-like figure—a series of textural *crescendos*, beginning and ending in E major. The second section features the most bizarre music in the set, dispensing entirely with the dotted rhythm and only occasionally providing a triadic harmony. Though I am hard-pressed to provide a tonic center, the cadences in E minor (mm. 140-141, 144-145, 153) sound less out of place than expected. The dotted figures return and climb to the top of the keyboard, and the movement is concluded with an open fifth.

The bouncy Rigaudon is in C major, the submediant key of the overall suite. While this is a closely related key (only one sharp away), Couperin does not use the submediant key in any of the suites of his keyboard output and reminds us of Ravel's personal stamp on the

composition. However, texturally, this is among the more backward-looking pieces. It is also in ternary form, presenting the most major sections at measure 1, 37, and 94. The first section presents a theme, which immediately modulates into some mixed-modal form of G major, and then takes material from that theme and visits more than half of all the possible major keys; when it seems he will settle into the same modal G major, however, he repeats the opening two bars to deliver the cadence in C major. The middle section is a complete contrast—set in C minor, the melody is all of a sudden rhythmically separated from the accompaniment. The modulations are also much smoother in this passage, hinting only at closely related keys, before cadencing in the dominant (G major). At measure 69, Ravel continues to develop the middle section material, again cycling through adventurous keys, eventually ending in F-sharp major before modulating again to D major, preparing the D minor ninth chord that opens the return at measure 93.

The next movement is the Menuet, which is in G major (the relative to the key of the suite). Here, we see Ravel's eye for detail in the specificity of the markings given on nearly every single note. Structurally, it is very similar to the Rigaudon, though thematically more unified—its major sections begin at mm. 1, 33, 75, and 106. The middle section, labeled "Musette," suggests bagpipes and organ—it uses a well-known texture technique referred to as "planing" where the melody is stated in triads and octaves and is set in a chromatic modal version of the parallel minor. Perhaps the most ingenious features of this piece is the return of the opening section (at m. 75), which also includes melodic material from the middle section. The second part of the return, travels to the distant *G-sharp minor*, before returning to G major for the coda. This coda inserts a quasi-Alberti bass, and passionate statements of

thematically derived material gradually dissolve into a G major ninth chord, gently ornamented by a trill before it leaves.

The Toccata is a blistering showpiece (which is unusual in a suite). Gordon Stewart calls it “one of the best-known display pieces of the early twentieth century” and “a popular audience rouser among pianists.<sup>16</sup>” This piece is the one that perhaps most leaves pianists wishing they were playing a harpsichord—as rapid hand crossings tease the player with the possibility of two manuals. While the structure is difficult to definitively outline, it is anything but amorphous. It is, in fact, tightly unified by motive-like transformations of rhythmic and intervallic materials.

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<sup>16</sup> *Ibid*, 389.

## Chapter 5

### Comparisons Between Piano and Orchestra Versions of *Le Tombeau de Couperin*

#### The Suite as a Whole

The orchestral version makes two movement-level structural changes to the suite. Firstly, it omits the Fugue and the Toccata entirely. Secondly, it reverses the order of the Rigaudon and the Menuet, presumably to end the suite on a fast piece. While it is easy to see why Ravel did not orchestrate the Fugue or the Toccata—this does have the unfortunate side effect of losing the return to E major at the end of the piece. Somewhat amusingly—pianists often omit the fugue and play the toccata by itself.<sup>17</sup> An exquisite work of contrapuntal craftsmanship, a crowd-pleaser the fugue is not. The toccata, however difficult, is also an inextricably pianistic texture. Otherwise, the four movements shared between the two versions are nearly identical in terms of structure, save for a few reworked repeats, and the notation of fermatas giving or taking a measure to accommodate more players and/or the conductor. Fortunately, Ravel uses only pitched instruments in this orchestration: two flutes (one doubling piccolo), two oboes (one doubling English horn), two clarinets, two bassoons, two horns, a single trumpet, harp, and strings.

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<sup>17</sup> *Ibid*, 397

## Observations from Detailed Score Study

### Prélude

In the first few bars, pianists are given a *pianissimo* dynamic and fairly specific slurs for the running sixteenth-note figure which alternates between the two staves. The eighth notes in the bottom staff are marked *staccato* and *laisse-vibrer (l.v.)*. The conflict between these two markings is typically resolved by playing the note with a staccato touch, but holding the sustain pedal. In m. 1, the placement of the end of the tie is slightly unclear, but for similar areas such as m. 11 the tie extends to the dotted eighth rest. To observe all these markings, the pianist should give an overall impression of a “very quiet” dynamic and connect melodic notes within the slurs, but two questions remain: what is the *character* of the very quiet sound? Exactly when (if at all) should the sustain pedal be released? Given only the information in the piano score, it is defensible to present the character as anemic, and to keep the eighth note using the sustain pedal, until the second one is played.

However, examination of the orchestra version answers both of these questions: the opening melody is rather famously assigned to the oboe, which tells us that the tone should be not be anemic, but somewhat piercing and energetic, even if soft. Physically, this is a suggestion that alert fingertips be used (as opposed to the fleshy pads) to deliver a fast and precise attack, the very soft dynamic would be instead accomplished by suspending the arm and retreating before reaching the bottom of the key. The notes in the bottom staff of the piano score become *pizzicato* quarter notes in the first violin and dotted eighths marked *tenuto* in the clarinet.



Figure 1: Piano version of the Prélude, mm. 1-7

Figure 2 shows the orchestra version of the Prélude, measures 1-8 (empty staves removed). The score is written for a full orchestra, including Hautbois (Hautbois), 2 Clarinettes en LA (2 Clarinets in B-flat), Violons (Violins), Altos (Alto), Cor A. (Cor Anglais), and Cl. (Clarinet). The tempo marking is Vif. ♩ = 92. The score includes dynamic markings such as pp (pianissimo) and mp (mezzo-piano). The music features a complex texture with multiple layers of eighth-note patterns and chords.

Figure 2: Orchestra version of the Prélude, mm. 1-8 (empty staves removed)

Oddly, the *l.v.* is *not* added to the *pizzicato* notes, where it is usually seen. Whether or not this is an instruction to dampen the strings precisely at the notated beginning of the following rest is also unclear; however, it is fairly safe to say that any persisting vibrations are inaudible at the distances from which orchestras are usually heard, especially because any audience attention that remains after the melody shifts immediately to the sustained sound produced by the clarinets. The *tenuto* marking in the clarinet part, however, does give a clear indication that airflow should be stopped precisely at the notated beginning of the following rest. Therefore, by examining the orchestration, the pianist learns that Ravel intended for the fifth note of the sixteenth-note figure (the G) to sound alone.

The orchestration does not only restrict the performer; in some cases, it allows additional options not indicated by the piano score. For example, Ravel indicates that the “small notes” in m. 2 are to be played on the beat in both the piano and orchestra version; these notes constitute a *mordent* where every note is written out. The mordent, is a specific kind of ornament whose name comes from the French word for “bite.” The mordent is a pervasive feature of Couperin’s keyboard style<sup>18</sup>, and far less common in the remainder of Ravel’s keyboard output. In the orchestra version, the oboe part shows an accent on the first of these (which is absent in the piano part). This frees the performer to play not only the subtlest of metric accents, but any accent that does not violate the overall character of the dynamic.

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<sup>18</sup> Couperin, Francois, Johannes Brahms, and Friedrich Chrysander. *Complete Keyboard Works*. New York: Dover, 1988. Print.



Ravel's instrumentation also clarifies the role of the pitch and rhythm material in the piano over the course of the passage; recognizing that the lower staff in m. 2 imitates the material in the upper staff of m. 1, a pianist might play this passage as a symmetrical exchange between two voices. While the same inflection is advisable (a small crescendo to the fourth of six notes and a small diminuendo away from it), the instrumentation and markings in the orchestra suggest that the clarinet accompanies the oboe for this entire time. Even when the clarinet plays the imitative figure, the new material in the oboe is meant to be dominant—this intention is easily missed when the piano score is the only source, especially when the pianist is unaware of the accent on the mordent.

In m. 4 and m. 9, the elisions in the clarinet part also open up a new possibility for pedaling. Whereas in the piano score, the lower staff ends its slur before the beginning of m. 5 (thereby suggesting clearing the pedal), the clarinet playing that line in the orchestra version is given a slur into the downbeat of m. 5 (thereby allowing a bit of sound from m. 4 to overlap into m. 5 from the pedal. Furthermore, the dynamics at the tops of the *crescendos* at the downbeats of measures 7 and 8 are unspecified in the piano score and indicated *mezzo-piano* in the orchestra version. At rehearsal 2 (m.14), Ravel actually divides this theme (where the right hand is slurred by the measure) across sections, though this is clearly an idiomatic facilitation. Clearly, it is not possible to imitate the antiphonal effect at the piano for keys which are so close together. However, the missing note in the right hand (played by the left hand), is also assigned to the violin 1 (who plays that line in the orchestra version).

At rehearsal 3 (m. 21), the mordents in the orchestra version are also given different articulation markings. While the pianist is not necessarily advised to adopt accents where the

piano score uses *tenuto* markings (the most common change), it may be helpful to know that this is permissible if it helps the proper execution of the mordent (that is, allowing the repeated note to sound, by using slightly more speed in the attack and allowing it to rebound). Additional dynamic clarifications four measures after rehearsal 5 (m. 41) help differentiate between various contrasting levels within piano (in this case, *pianissimo*, played by the oboe), and the peak level of the *crescendo* marked at m. 44 (which is *forte* in the orchestra version and not specified in the orchestral version). Also interesting to note is the instruments assigned to sequential repeated material. The figure first played by the oboe is next played by the muted trumpet (suggesting a more piercing, but hushed sound) at rehearsal 7 (m. 50), before the English horn takes it at m. 53.

While it is typical to also recapitulate orchestration along with thematic material, Ravel forgoes this option, using the clarinet (instead of the oboe) to play the theme at the return, with muted upper strings holding the harmony (supported by *pizzicato* cellos). Four measures later, he changes to flute, supported by oboes. The second theme originally introduced by flutes and English horn now starts in the viola; this triggers a parallel *crescendo* to the ending of the first half, with entrances by bassoons and horns and second violins taking over the melody (m. 70), followed by clarinets and oboes and first violins, then by harp and flutes, and finally trumpets and piccolo. This massive texture, gradually dissolves to harp, strings, a single muted horn, and bassoons with interjecting arpeggio figures, first by the winds, and finally by the harp, which flares up to a *forte tremolo* in the strings, flutes, and oboes, before being extinguished. The harp marking *étouffez* is actually

telling, indicating that Ravel reinforces the importance of the pedal change before the tremolo from a sound-design standpoint, even though the harmony does not strictly require it.

## **Forlane**

The fact that the theme is first assigned to the first violin makes many changes even more surprising—markings such as slurs and articulation marks are nearly unrecognizable in the orchestra version from the very beginning—a quick glimpse of the overall texture reveals a much drier concept of sound than one might expect from the piano version. Many notes which are dotted eighths in the piano version (mm. 1-8) are shortened into eighth notes followed by sixteenth rests; furthermore, many of the sixteenth notes and eighth notes are marked *staccato* in the violin part. The piano version gives no indication that it might be appropriate to play this theme *staccato*. Since it is likely that the same marking played by a different instrument gives a different effect, it seems that Ravel was actually after the sound of what feels like *legato* at the piano. The orchestral accompaniment for this section is also particularly interesting, as Ravel combines horns and bassoons playing the harmonies in the left hand of the piano version (with the expected slurring) with *pizzicato* chords in the other stringed instruments—with the strings switching to bowed short notes in measure 3.

Allegretto.  $\text{♩} = 96$

Figure 3: Piano version of Forlane, mm. 1-9

Allegretto.  $\text{♩} = 96$

COR ANGLAIS

2 BASSONS

2 CORS en FA

VIOLONS

ALTOS

VIOLONCELLES

CONTREBASSES

Figure 4: Orchestra version of the Forlane, mm. 1-5 (empty staves removed)

In the case of this section, it seems as though it is the conductor who is advised to study the piano score—the phrasing is clarified by the slurring in the piano version, which clearly indicates how notes should be grouped into gestures. However, the pianist does not leave empty-handed either. The orchestration is a reminder that a slight separation before m. 1 beat 2 is not only warranted, but required—including in the pedal. While the pianist has permission to join other elements in the pedal, given the slurred harmonies in the winds, this is one place where a break is necessary. This applies to basically every instance of this material in this movement. Additionally, the start of a new slur halfway through measure 3 is not merely a break in the phrase, but actually a change in the texture. The piano version actually does reflect this texture change in the slurs on the accompaniment notes—but for some, score study of the orchestra version may be helpful in drawing attention to such subtleties.

At rehearsal 1 (m. 9), the oboe takes over the theme. In the piano version, there is not even a dynamic change, despite the obviousness of the new structural section. Though the overall impression of this new section should stay *piano* dynamic until the crescendo four measures after rehearsal 1 (m. 12), the color of the sound should turn brighter—this may be accomplished with a faster attack speed, and even a slight increase in volume is acceptable since the dynamic is not *pianissimo*. If the increase in volume exceeds the allowable amount, volume may be reduced by reducing arm weight (while maintaining attack speed). The orchestration in this measure also suggests that it may be acceptable to brush up against a *mezzo-piano* dynamic to evoke the clarinet and bassoon entrances in this section before passing through it on the way to *mezzo-forte* in this crescendo.

Five measures after rehearsal 1 (mm. 13-18), the descending pitch level of this figure makes it extremely tempting for the pianist to play softer prematurely such that by the time *diminuendo* is actually indicated, it is impossible. The orchestration actually provides a solution, which follows the change in markings quite well. In the orchestration, all the winds (except flutes), harp, violins (except outside first violins), and violas are playing the chords; the melody is played only by the outside first violins and the flutes. A change at m. 15 removes the English horn from the harmony and trades harp for bassoon in its upper register and changes the strings from bowed to *pizzicato*. To implement this, a pianist might give the overall impression of the same dynamic by decreasing the prominence of the harmony and increasing the prominence of melody until m. 17, where the horns enter. The horn entrance also permits the pianist to begin the *diminuendo* from slightly more than *mezzo-forte*, which helps accentuate the diminuendo. However, not all the changes in this movement are instructive. In the measure after rehearsal 1 (m. 10), Ravel omits an accented B5 (present in the piano version) from the orchestra version, and instead has the same pitch held (instead of rearticulated) by the flute. The harp fills the function of articulating this beat an octave lower. To make the same change as a pianist is not likely to be advisable.

The *laisse-vibrer* in the piano score (m. 18) is also quite a bizarre marking, and makes it unclear whether the three notes in the right hand should or should not be kept when the left hand plays G#2. If so, why not write a dotted half note? If not, why include the *l.v.*? This chord, in the orchestra version, is actually a dotted *half* note, *tied into an eighth-note* on the downbeat of rehearsal 2 (m. 20). This indicates that not only should this chord be kept to the

downbeat of beat 2 (as the *l.v.* would usually indicate, followed by another pedal change), but that the pedal should actually be overlapped into the downbeat of m. 20.

At rehearsal 2 (m. 20), the melody is given to the flute, and the harmonies are given back to the strings who are now all using their bows (except for the basses, who are plucking) and the harp, which provides color on beat 2 of this melody. At m. 22 (three measures later), the clarinet takes over the melody, and at m. 25, the opening orchestration returns. In this case, the return of the opening orchestration reinforces the idea that m. 25 should sound more or less like the opening, even when played at the piano. At the keyboard, mm. 20 and 22 are harmonically strange, but the gesture is clearly a simple sequence—which Ravel chooses to complicate in his arrangement with an instrumentation change—the fact that he does not do this for m. 25 is equally telling; a reminder of the opening, before the “B” section begins in earnest at rehearsal 3.

At rehearsal 3 (m. 29), the dance’s characteristic rhythmic motive is given descending pitches and stated by the flute, clarinet, oboe, and English horn. What is not apparent from the piano score is that the statement by the English horn is actually designed to transition into the material that does not use this rhythm (m. 31). The *staccato* markings on this motive are not advisable for the pianist, given the tempo of the piece, and the very contrary markings for articulation in the piano score (as in the opening), though it is again a reminder that these should be light in character (even when connected). Texturally, Ravel reinvents this section entirely, replacing the broken chord in the left hand with entire sections playing solid chords (and dotted rhythms). Unfortunately, it is all but impossible to add all these notes to a performance at the piano, especially at the indicated *pianissimo* dynamic.

At rehearsal 4 (m. 37, second ending), the two statements of this phrase are distinguished only by pitch level and content in the piano version. The orchestra version adds two interesting pieces of information here. Firstly, the color of the accompaniment goes from winds (mm.37b-41) to strings (mm. 41-45); the common feature of both of these statements is the horn. Secondly, and the peak dynamic of the *crescendo* at m. 43 is in fact *forte* (not specified in the piano version. While it is also clear from the piano score alone, the orchestra score also reinforces the importance of the D#3 sounding alone. Rehearsal 5 recapitulates rehearsal 3 fairly straightforwardly. In the piano score, rehearsal 6 seems to do the same for the opening until an imitative voice enters at m. 57. However, the orchestra version assigns the theme to oboe this time (replacing the first violin), only to have the first violin join the oboe on the downbeat of the fourth measure after rehearsal 6 (m. 57), a beat before the imitative voice (clarinets and violin 2) enter.

Rehearsal 7 (m. 61) again introduces new material. Though the sparse string texture draws comparisons to rehearsal 4, the absence of flutes makes it distinct. The piano score shows a conspicuous lack of long slurs—indicating some change in sound, though the comparatively regular phrase structure of this section makes it obvious that they are grouped into two-measure units. *Staccato* markings are again not strictly transferable from the winds, but it does indicate that Ravel may not have been going after *legato* pedaling, which would be considered the default instinct for playing a passage in this register. Rehearsal 8 (m. 69, second ending) continues to transform the material presented in a different key, with flutes now playing the part of the right hand with occasional assistance from the clarinet, and *pizzicato* second violins, harp and muted trumpets playing the part of the left hand. The top



of the crescendo at m. 76 (one measure before rehearsal 9) is marked *mezzo-forte* in the harp. An increased activity at m. 81 is supported by the addition of more players in the orchestra version, suggesting that the pianist need not suppress an increase in volume, which helps distinguish the *pianissimo* marking at rehearsal 10 (m. 85).

Rehearsal 11 recapitulates rehearsal 6 nearly exactly, and rehearsals 12-13 recapitulates rehearsal 1-2 nearly exactly. Rehearsal 14 presents the next new material—the melody is first played by the clarinet, with an imitation by the bassoon one beat later. While entrances of other voices also hints at the imitation with the *staccato* markings and accents, the fact that only a single extra mordent is added (to the bassoon) indicates that the pianist need not strain to mark additional entrances (as those entrances would sound like a single melody, disrupting the “clarinet” line). At rehearsal 15 (m. 129), Ravel transforms this two bar sequence into an orchestral crescendo, with entrances grouped as follows: flutes and clarinet 1; followed by oboe and clarinet; then trumpet, viola, and cello (both *pizzicato*). These entrances all occur within two bars, followed by a sequence (of the same entrances in the same order). The last statement of this theme, however, is actually played by the full orchestra (except flutes, trumpets, and harp), with bowed violins on the melody. The *diminuendo* following this is accomplished by stripping away players until the *pianissimo* conclusion of the section is played by strings supported only by a clarinet and a bassoon.

Rehearsal 16 (m. 137) provides some of the most bizarre material in the piece. The melody is given to the second oboe; this is actually the *alto voice* of the dyad in the piano score. The soprano voice is, in fact, given to the first player oboe and marked *staccato*, even though it shares a stem with the melody in the piano version. However, contradicting the

temptation to interpret this as playing it too dryly is the *divisi en 3* string section holding the harmony for the entire beat, barely articulating its bow changes at the dotted quarter pulses.

The harp replaces the left hand of the piano. Rehearsal 17 (m. 147) brings in a warmer texture (though the harmonies are almost equally bizarre) with the longer melody phrases played by clarinets and violins, accompanied by horns, bassoons, and the remaining strings.

An echo of this material is played with the oboe on the melody before the first measure of the opening melodic material closes the piece. In the conclusive gesture, it is first stated by violins, then repeated by the flute and clarinet, and then up an octave by the oboe, and finally up yet another octave piccolo before an open fifth in the strings caps off the movement.

While some amount of color change is unavoidable with register change at the keyboard, the orchestration suggests that these changes should be highlighted, rather than suppressed.

## Menuet

The first theme is again stated by the oboe, and changed slurring in the theme should again be taken with a grain of salt—the slurring of the opening theme is actually closer to that of the piano theme than in the Forlane, but the two breaks in the slurs (at mm. 3 and 5) are not strictly transferable to the piano. Instead, it seems that Ravel was after the articulation that the piano naturally provides even when attempting *legato*, and it just so happened that the oboe is required to tongue to provide this articulation. The instrumentation, however, is suggestive—a chorale-like texture of winds, suggests a cool tone, perhaps one reminiscent of a music box made of crystal, glass, or even ice. The only strings playing in mm. 1-3 are *pizzicato*, until measure 4.

At rehearsal 1 (m. 9), the oboe stays on the melody, and the strings enter on the harmonies, reinforced by harp. Rehearsal 2 comes only six measure later (m. 15); the crescendo is one that includes the entrances of clarinet, bassoon, and horn—as such, the increase in sound should reflect not more effort, but more people (to the extent that this can be simulated on the piano). The next informative marking in this movement is in the eighth measure of rehearsal 2 (m. 22). In the piano score, the engraving of the *crescendo* in mm. 21-22 is quite unclear as to which beat is the climax (beat 2 or beat 3). In the orchestra version, the climax is quite clearly beat 2; beat 3 is marked piano in all the instrument parts playing, and some parts (flute, harp, clarinets, English horn) drop out after beat 2.

A parallel period at rehearsal 3 (m. 25) is given different harmonies, and marked *sourdine* in the piano part; the fact that these two should be distinguished is further clarified by an instrument change—the flute plays the melody at measure 25, and the oboe plays at measure 29, accompanied by strings. At measure 29, we also see an instance of Ravel's *incredible* level of specificity for accompaniment textures. The cellos are divided for mm. 29-32; usually, this is done to allow multiple players to play multiple pitches as in m. 33 (first ending), or to stagger bow changes. However, on the repeat, Ravel asks *only half the section* (the outside players) to use their mutes, even though they are already playing *pizzicato*. In this case, this indicates that he found an unmuted section of *pizzicato* cello too loud (or too bright) and an entirely muted section too quiet (or too dark) for this particular passage. While any respectable musician would have the instinct to let the melody take first priority, or to vary the repeat in some way (usually with an overall dynamic level), this

change is extremely subtle—and whether he imagined this distinction or requested after hearing a reading of the piece, it shows an extraordinary level of detail.



Figure 5: Piano version of the Menuet, mm. 29-32

Figure 6: Orchestra version of the Menuet, mm. 29-32 (empty staves removed)

Rehearsal 4 (m. 33) casts flute, clarinets, and bassoons in the role of the left hand and the lower strings in the role of the left hand, resting steadily below the melody. The sustained cello notes allow for liberal use of the pedal (which would be necessary to accomplish the

*legato* anyway). Rehearsal 5 (m. 48), 8 bars later, uses trumpet and horn instead of flute and bassoon and adds additional strings. In the piano version, the melody is traded between hands, and the G and D figure alternates between being above and below those chords. In the orchestra version however, both are present at the same time. The bass is all but impossible to keep in the pedal (as this results in clusters due to the melody being in chords), especially because this figure also includes harp and *pizzicato* in the first violin. At Rehearsal 6 (m. 49), Ravel gives the entire texture to the strings, a change that coincides with the reimagined harmony, and the beginning of a long *crescendo*. This *crescendo* is one of the longest and most massive in the piece, as it involves increased effort by both the players already playing *and* entrances every four bars. First comes oboe, clarinet, and bassoon at m. 53, followed flutes, horns, trumpet, and harp at rehearsal 7 (m. 57). This swell begins to subside two bars later, with a *poco diminuendo* by all players involved, followed by exits of the trumpet and horns (m. 61). Interestingly, at rehearsal 8 (m. 65), with the return of accompaniment material from rehearsal 4, he uses the instrumentation of the same material from rehearsal 5.

At rehearsal 9 (m. 75), a muted string section takes over the material from the middle section while the oboe plays the return of the opening theme. The horn and harp provide additional harmonic support. This reinforces the instinct that a pianist should voice the top melody, clarifying the structurally more important of the two themes (signaling the return) should be emphasized. Rehearsal 10 (m. 83) recapitulates rehearsal 1 in a new key area, replacing the oboe with violin 1, joined by flute at rehearsal 11 (m. 89), where the other accompanying strings are joined by clarinet, bassoon, and horn. Rehearsals 12 and 13 (mm.

99 and 103) recapitulate rehearsal 3 (m. 21-32) almost exactly, with only the harmony change also present in the piano score.

Rehearsal 13 (m. 106) assigns the left hand figuration to the cello and bass and the melody to the English horn. The changed slurring in this case is clearly a bowing indication rather than an actual intention for the eighth notes to be grouped that way in any pianistically executable manner (such as pedaling). The sustained G2 and the slurs in the horn part indicate the instinctual pedaling by the measure, half-changing as necessary. One interesting inflection suggested by the English horn markings is the quarter note in m. 110; in the piano score, this indication is absent, and would not be instinctual, and the downbeat would be emphasized instead. This actually changes the effect of the passage noticeably (though whether or not to adopt this change is up to the individual pianist).

At m. 112, he adds flute to the melody and a bar later at rehearsal 14 (m. 113), he adds harp to the left hand, marked *fortissimo*—while the pianist’s instinct is typically to emphasize the melody (which the upper notes still are), the orchestration indicates that he clearly cares about this eighth note figure in the left hand. Though the wind exits are not staggered, they are given the instruction to fade out on a *diminuendo*, which unfortunately does not clarify whether there is a distinct momentary color change, or whether it coincides with and is obscured by the reduction in volume.

The indication from the piano score for *portato* on the dotted half notes at mm. 120-122 is interestingly omitted from the orchestra version. Instead, the violins and violas are simply instructed to change bows. The arpeggio is expectedly given to the harp, triggering

the color change to winds playing material from the first bar in descending octaves (piccolo, followed by oboe, then English horn), accompanied by various combinations of winds and *pizzicato* strings. The final statement of the G-E-D figure is given to the horn and muted *pizzicato* celli, before the violins and violas play the pickup to m. 128 (marked *Très lent* in the piano score). As in m. 18 of the Forlane, a *l.v.* calls into question the exact nature of the rest after this pickup, though the orchestra version clearly indicates a slight break in sound. The orchestra version also provides insight into the very end. Firstly, it justifies a slightly longer double trill in m. 128 (showing a fermata absent in the piano score), and secondly, requests *perdendosi* (fading out as indistinctly as possible).

## Rigaudon

The slurs in the orchestra version clarify phrasing at mm. 3-7. Here, the piano score indicates no articulation markings, and so the sixteenth notes could all be either legato or non-legato. Consulting the orchestra score, *legato* seems to be indicated. However, actual overlapping *legato* is probably not applicable for running notes, especially at such a fast speed when some of the notes need to be repeated. The violins are also playing these notes on separate bows (where Ravel could easily have requested slurs). However, the fact that a clarinet player would tongue at the beginning of each slur provides some basis for a slight metric accent if desired. Notably, Ravel's arrangement of this section also leaves little traces of the piece's origin as a keyboard piece, where the hand crossing is a distinct visual feature of watching a performance. While the composite rhythm is maintained with notes that are impossible to add, the walking bass feature of this section is clarified by the assignment of quarter notes to bassoon and cello. The shape of the *crescendo* is also clarified by the orchestration, where m. 7 is marked *fortissimo* and introduces both horns and double bass. While m. 8 is louder still (with the entrances of flutes, it is good to know that measure 7 has come further from *mezzo-piano* than might be imagined from only the piano score.



Figure 7: Piano version of the Rigaudon, mm. 1-10



**Assez vif**  $\text{♩} = 120$

The score is for an orchestra and includes the following parts and markings:

- 2 FLÔTES**:  $ff$ ,  $\text{à } 2$
- 2 HAUTOIS**:  $ff$
- 2 CLARINETTES en Sib**:  $ff$ ,  $\text{à } 2$ ,  $mp$ ,  $4^o$
- 2 BASSONS**:  $ff$ ,  $mp$
- 2 CORNS**:  $ff$
- TROMPETTE**:  $ff$
- HARPE**:  $ff$
- VIOLONS**:  $ff$ ,  $mp$
- ALTOS**:  $ff$ ,  $Div.$ ,  $pizz.$ ,  $mp$
- VIOLONCELLES**:  $ff$ ,  $pizz.$ ,  $mp$ ,  $Div.$
- CONTREBASSES**:  $ff$

Figure 8: Orchestra version of the Rigaudon, mm. 1-5

Rehearsal 1 (m. 9) presents a new section beginning with a sequence of the rhythmic motive presented in measure 1 and in measure 8. He further raises the stakes by introducing the harp, which he uses to punctuate important moments throughout the movement (such as at mm. 17, 21, and 35). Following this, the bassoon presents a transformed melody which joins the accompaniment (other winds and *pizzicato* strings) in *staccato* chords. In the piano score, while the right hand might also be misconstrued as melodic, bearing in mind that this

section should be somewhat contrasting, the orchestral score does not allow for this mistake, giving the bassoon the indication, *en dehors*. Rehearsal 2 (m. 17) presents a sequence of this material, shifting the melody to the horns and then to the trumpets at the pickup to measure 21 (two measures before rehearsal 3).

The sudden drop to pianissimo two bars after rehearsal 3 (pickup to m. 25) is marked with the expected color change in the orchestration, assigning the melody to flutes accompanied by the harp, adding inner eighth notes alternating between oboe and clarinet. At rehearsal 4 (m. 30), this crescendo is accomplished by adding players (clarinets, followed by violins, trumpets, harps, and flutes). Notably, he takes the harp off the sixteenth note figure at m.32 to withhold it for three bars, allowing him to use it again as a punctuation device at m. 35.

The contrasting *Moins vif* section (rehearsal 5, m. 37) shows one of the most typical orchestrations, a wind instrument (oboe in this case) is given the melody, accompanied by *pizzicato* strings. This is commonly referred to as “big guitar orchestration” and is one of the barest textures in the entire piece, with no instruments providing sustained harmonic support. Notably, only violin 2 and viola are used until rehearsal 6 (m. 45), where cellos are added. Here, the harmony also breaks free of the open fifth pedal tones, but the significance of this point is easy to miss. In the orchestra version, however, a swell is indicated. Furthermore, the markings in the oboe part clarify that the *staccato* eighth notes following pairs of sixteenth notes should be ever so slightly emphasized due to their tonguing in the orchestra part (not merely the standard lift that would be done to show the slurs, which are broken in the oboe part). The change to English horn at m. 51 seems to be demanded by register, rather than an

actual request for the distinction between oboe and English horn, as he returns to oboe as soon as possible (rehearsal 7, m. 53).

At rehearsal 9 (m. 69), the flute replaces the oboe, indicating a slower, lighter attack in the melody. Also, for three bars, the harp replaces the string section, and cellos briefly provide an oasis of a sustained half-diminished D# seventh chord a melody. To reflect this contrast at the piano, pedal length or depth might be spared in the previous section and used more liberally for several bars, before the texture reverts to what it was before three measure later (m. 72). At rehearsal 10 (m. 77), the clarinet takes the lead, going into a sustained long note at m. 81. Even though pianists typically pedal through these measures, Ravel keeps the *pizzicato* figure going until rehearsal 11 (m. 85), indicating that the long note should sound alone for much of this time. Since a single note played at the piano may not sustain long enough to project over the chords, however, to play this passage without pedal is at the very least quite problematic (if not impossible). If the top is held with the hand, the left hand shifts to play the chords written in the top staff, which is extremely difficult to do quietly. Instead, shallow pedal might be gradually added. However, the orchestration suggests also reserving additional pedal to mark significant texture change at rehearsal 11 (m. 85). All of a sudden, flutes, oboes, bassoons, first horn (muted), violas and celli (playing over the fingerboard) play the melody (with some homophonic harmonization) against the harp, which again replaces the *pizzicato* string section.

Rehearsal 12 (m. 93) to the end recapitulates both material and orchestrations from rehearsals 1 through 4 nearly exactly; any changes present in the orchestra version (a few notes) are also present in the piano score, and are covered in Chapter 3.

## Chapter 6

### Conclusions

In the preceding pages, I have actually done my best to restrict my discussion to changes that might possibly be sanctioned by the composer in any way shape or form. Many of the analyses discussed above might reveal analogous insights when playing other piano music later transcribed for orchestra by Ravel, such as the *Pavane pour une infante défunte* or *Alborada del Gracioso*, or other pieces mentioned in the Appendix. *Ma mère l'oye* (for piano, 4 hands) is also such a piece, and it exists in a piano solo form (arranged by Jacques Charlot, to whom the Prélude of *Le Tombeau de Couperin* is dedicated). Similar analysis might even work in reverse for Ravel's orchestra music and later transcribed for piano (most notably *La Valse*)—perhaps a truly masterful of color at the piano could even convincingly perform *Boléro*. Frequently, we continue to perform piano reductions, especially as accompanists—most frequently prepared by the composer prior to orchestration.

However, pieces like *Pictures at an Exhibition* (orchestrated by Ravel) and Debussy's *Petite Suite* (orchestrated by his friend Henri Busser) might also benefit from score study of the orchestra versions even if they were produced by different composers—Debussy is reported to have enjoyed Busser's arrangement of *Petite Suite* for orchestra, and so even such analysis may not be completely unsanctioned. Orchestrations of keyboard works such as *Pictures at an Exhibition* have also become an essential part of their evolution as part of the literature. Other famous works to receive orchestral treatments include Johann Sebastian Bach's *Toccatà and Fugue in D Minor* by Johann Sebastian Bach (most famously orchestrated by Leopold Stokowski) and Franz Liszt's *Hungarian Rhapsody No. 2 in C-sharp Minor*.

Additionally, other composers have orchestrated Fugue and Toccata from *Le Tombeau de Couperin* have come into existence as well. While examinations of these orchestrations may not have the same kind of musicological authority, I strongly suspect that they are enriching endeavors in their own right. Less direct forms of score comparison are also advisable—composers as early as Bach were heavily influenced in their concepts of texture by their ensemble writing. While the correspondence is more difficult, JS Bach's *Brandenburg Concertos* come to mind, as do the symphonies and string quartets of Beethoven and Haydn, and the operas of Mozart. While the correspondence in these cases will not be as direct, it will help to develop a holistic understanding of the styles of these composers with respect to common gestures and textures.

## Appendix

### Catalog of Ravel's Piano Works

The following is extracted from a catalog of Ravel's complete works as published in musicologist Maurice Marnat's book, *Maurice Ravel* (1986). It includes all of Ravel's compositions originally for only one or more pianos/pianists and no other instruments or voices. Ravel's piano transcriptions of orchestral music composed by Ravel or other composers is not included. A piano sonata movement (M1, 1888) and fugue (M20, 1899) no longer survive. They are worth mentioning, but not listed below.

M2	Variations on a Theme of Grieg (Death of Ase) (1888)	M30	<i>Jeux d'eau</i> (1901)
M3	Variations on a Theme of Schumann (Chorale <i>Freu dich o meine Seele</i> from Album for the Young, Op. 68) (1888)	M32	<del>Fugue in B-flat (1902)</del>
M5	Sérénade grotesque (1893)	M36	<del>Fugue in E minor (1903)</del>
M7	<b>Menuet antique (1895)</b>	M40	<i>Sonatine</i> (1905)
M8	<b>Habanera (1896)</b> *See M13 [2 pianos, 4 hands]	M42	<del>Menuet in C-sharp minor (1904)</del>
M11	<del>La parade (1896)</del>	M43	<b>Miroirs (1905)</b>
M13	Entre cloches (1897) *See M8 [2 pianos, 4 hands]	M44	<del>Fugue in C (1905)</del>
M14	<del>Valse in D (1898)</del>	M55	<i>Gaspard de la nuit</i> after Aloysius Bertrand (1908)
M19	<b><i>Pavane pour une infante défunte (1899)</i></b>	M58	Menuet sur le nom de Haydn (1909)
M23	<del>Fugue in D (1900)</del>	M60	<b><i>Ma Mère l'Oye (1910)</i></b> [piano, 4 hands]
M24	<del>Fugue à quatre voix on a theme of Reber in F (1900)</del>	M61	<b><i>Valses nobles et sentimentales (1911)</i></b> À la manière de... (1912-13)
M26	<del>Prélude and Fugue (1900)</del>	M63	Borodine Chabrier
M27	<del>Fugue in F (1900)</del>	M65	Prélude (1913)
		M68	<b><i>Le tombeau de Couperin (1917)</i></b>
		M70	Frontispice (1918) [2 pianos, 5 hands]

\* M8 and M13 are published together as *Sites Auriculaires* for two pianos, four hands. M8 is later included as a movement of *Rapsodie Espagnole*, M54.

Works (or works whose movements) Ravel later orchestrated are printed **in bold**.

The most significant, frequently programmed, or persistently popular works are printed *italicized*.

Variation sets and other significantly derivative works are printed in gray.

Works not appearing in the *New Grove Dictionary of Music and Musicians* are struck through.

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