



**Image 13.23:** This map details the trade routes in use by the first century CE.

Source: Wikimedia Commons

Attribution: User "Shizhao"

License: CC BY-SA 3.0

clothing, artifacts, musical instruments, songs, stories, and religious beliefs from one end of the known world to the other. Ma has described the historical Silk Road as “a model for productive cultural collaboration, for the exchange of ideas and traditions alongside commerce and innovation”—values that he wants to promote in the modern world.

Although the Silk Road Project has grown into a multifaceted arts organization—Silkroad—that pursues a variety of initiatives, we will consider only the activities of the Silkroad Ensemble, a collective of international **virtuosi** who blend the instruments, styles, and techniques of various musical traditions. The ensemble contains nearly sixty members (although only a dozen or so perform together on any given occasion) and has been active across the globe. Its members record albums (seven in the first two decades), give concerts, host festivals, and conduct clinics for students of all ages.

The music played by the Silkroad Ensemble comes from a variety of sources. Sometimes, individual members share traditional pieces from their own cultural backgrounds. The various performers then find a way to interpret that music in a way that makes sense to each of them, and the ensemble works together to develop creative arrangements. Sometimes, the Silkroad Ensemble—like Roomful of Teeth, discussed above—commissions composers to write works for their unique performing forces and abilities. And sometimes, the ensemble adapts pieces of music that have been written for other performers. In all cases, their repertoire blends cultural influences. However, it is very important to Yo-Yo Ma that the Silkroad Ensemble treat its sources with respect and avoid exoticizing



**Image 13.24: Members of the Silkroad Ensemble bow following a 2011 concert at the University of California, Berkeley.**

Source: Flickr

Attribution: User "rocor"

License: CC BY-NC 2.0

non-Western musical traditions—like we saw happen in Tchaikovsky's *The Nutcracker* (Chapter 4).

We will consider one of the Silk Road Ensemble's most popular numbers, "Arabian Waltz." This piece was written and recorded by the Lebanese composer and oud player Rabih Abou-Khalil in 1996. Although well-versed in traditional Arab music, Abou-Khalil is equally knowledgeable of Western traditions, having studied flute at the Academy of Music in Munich, Germany. His compositions blend Arab scales, textures, and rhythms with influences from jazz, rock, and European concert music. "Arabian Waltz" was written for oud, string quartet (a European ensemble), and traditional Arab frame drums. The original recording<sup>15</sup> featured Abou-Khalil in collaboration with the Balanescu Quartet—an ensemble led by Romanian violinist Alexander Bălănescu that specializes in experimental music.



**Image 13.25: Rabih Abou-Khalil is a well-known oud player and composer.**

Source: Wikimedia Commons

Attribution: Lior Golgher

License: CC BY-SA 2.5

15.



"Arabian Waltz"

Composer: Rabih Abou-Khalil

Performance: Rabih Abou-Khalil, The Balanescu Quartet (1996)



**Image 13.26: The shakuhachi is related to the Persian ney, discussed in Chapter 8.**

Source: Wikimedia Commons

Attribution: User "Yuzu696"

License: CC BY-SA 4.0



**Image 13.27: The janggu is played here by a performer in traditional garb.**

Source: Wikimedia Commons

Attribution: User "m-louis"

License: CC BY-SA 2.0

Clearly, "Arabian Waltz" was a cross-cultural work from its inception. In the hands of the Silkroad Ensemble, however, it has absorbed an even greater depth of international influence. We will consider a live performance that the ensemble gave in 2009 at the Park Avenue Armory in New York City. The ensemble, on this occasion, consisted of two violins, viola, cello, string bass, pipa (a Chinese lute—see Chapter 6), sheng (the Chinese mouth organ—see Chapter 4), shakuhachi (a Japanese flute), tabla (North Indian drums—see Chapter 6), various Middle Eastern frame drums (see Chapter 8), and janggu (a Korean drum). This is unquestionably an extraordinary assortment of instruments, each played by a master of the respective tradition.

The Silkroad Ensemble's performance of "Arabian Waltz"<sup>16</sup> begins just as Abou-Khalil's had, with the sound of Arab frame drums. From the start, however, the ensemble members leave their unique stylistic fingerprints on this rendition. The principal melody is first heard in the shakuhachi, played by Kojiro Umezaki. Umezaki plays the melody—itsself unmistakably Middle Eastern—in a Japanese style, introducing the typical embellishments that are **idiomatic** to the shakuhachi. Another remarkable contribution comes from the tabla player, Sandeep Das, who likewise plays his instrument just as he would in a

North Indian context. In the second half of the performance, Das is featured in a solo that combines the sound of the tabla with the other drums, producing an unprecedented aggregation of percussive timbres.

16.



"Arabian Waltz"

Composer: Rabih Abou-Khalil

Performance: Yo-Yo Ma, The Silkroad Ensemble (2009)

## CONCLUSION

These case studies have explored the expansive definitions of “good music” offered by recent Pulitzer committees, a leading art music ensemble, and one of the most famous living classical musicians. All have agreed that quality can be found in many genres and traditions. We might sum up their values according to the five criteria presented in the introduction.

Was every example in this chapter successful at fulfilling its stated purpose? We’ve looked at a lot of dance music—did it inspire you to dance? Did Shaw’s *Partita* change the way you think about the possible uses for the human voice? Did Marsalis’s “Work Song” cause you to feel the suffering of his oratorio’s protagonists?

Was each of these examples exceptional when compared to others of its type? Is Lamar the best hip-hop artist, and was *DAMN.* the best hip-hop album of 2017? Is *Tehillim* a particularly compelling example of minimalist composition? Are the works of Aphex Twin superior to those of other electronic music artists?

Were these examples particularly original? Do they stand out from the field? Is there something about the musical details of *Libertango* that make it stick in your head? Does the originality of the vision behind Ellington’s *Far East Suite* qualify it as “better” than other jazz compositions of the era?

The skill of the performer—whether we are talking about Lamar’s accomplished rapping, Roomful of Teeth’s polished singing, Alarm Will Sound’s clever orchestrating, or Ma’s exquisite cello playing—certainly contributes to the quality of each of these examples. Ma in particular has exhibited singular dedication to identify and collaborating with the most accomplished performers from each global tradition. Flawless execution is central to his cross-cultural vision. But what about the skill of the composers? How can we judge that?

Finally, what impact has this music had on society? As an enormously popular performer, Lamar has certainly had an impact—will his legacy shape the future of hip-hop? Copland certainly defined the sound of “Americanness” for generations of composers. That makes him important, but does it make him good? Shaw is still at the beginning of her career—will her future influence determine the quality of *Partita* in some way?

This book ends as it began: with a long list of questions. None of these questions can be definitively answered, but they are all worth asking. They are worth asking because we listen to music every day, meaning that every day we have the opportunity to engage with an art form that human beings have used to communicate, entertain, and even shape the course of history for tens of thousands of years. We can either listen passively or we can ask questions of what we hear. These questions lead us to listen with greater care, extract more from the music in our lives, and discover new things about the world around us.

## RESOURCES FOR FURTHER LEARNING

### Print

Hasse, John Edward. *Beyond Category: The Life and Genius of Duke Ellington*. Da Capo Press, 1995.

### Online

Andrew Granade and David Thurmaier, *Hearing the Pulitzers* podcast: <http://hearingthepulitzers.podbean.com/>

Caroline Shaw: <https://carolineshaw.com/>

Jazz at Lincoln Center: <https://www.jazz.org/>

Pulitzer Prizes for Music: <https://www.pulitzer.org/prize-winners-by-category/225>

Roomful of Teeth: <https://www.roomfulofteeth.org/>

Silkroad Ensemble: <https://www.silkroad.org/>

Wynton Marsalis: <https://wyntonmarsalis.org/>





## Instruments of the Orchestra

### INTRODUCTION

The symphony orchestra has been a fixture of Western concert music since the early 18th century. It grew in size over the course of the 19th century as composers added new instruments and increased the number of players. Today, a professional orchestra is likely to contain about a hundred musicians. These are divided into sections of various sizes based on the instruments they play.

Orchestras include four different types, or families, of instruments. These are known as the **strings**, **woodwinds**, **brass**, and **percussion**. The instruments contained in each family share a means of sound production, but they come in different sizes and might be made of different materials. As a result, they play in different ranges and with different timbres. Each instrument of the orchestra also has different strengths and weaknesses. Some can play with great agility, while others are better suited to sustained pitches. Some are loud and piercing, suited to prominent solo lines, while others are more subtle. Composers who write for the orchestra must carefully consider the characteristics of each instrument. When the symphony orchestra is used well, however, it is capable of producing an extraordinary variety of sounds.

To hear each of the instruments in the orchestra and see a demonstration of its capabilities, please visit this webpage maintained by the London-based Philharmonia Orchestra: <https://www.philharmonia.co.uk/explore/instruments>.

### THE STRING FAMILY

All orchestral string instruments produce sound when a vibrating string causes a hollow wooden body to reverberate. On all instruments except the harp, the strings are usually set into motion with a bow, although they can also be plucked. Modern bows are strung with horsehair, while the strings themselves are made out of various metals. Because string instruments are not very loud, there are usually a lot of them in an orchestra.

## **Violin**

The violin is the smallest modern string instrument. It has four strings and plays in a high range. In an orchestra, there are two sections of violin players: the first violins and the second violins. The first violins often have the melody, while the second violins are more likely to play harmony in a lower range.

## **Viola**

The viola looks nearly identical to the violin, but it is somewhat larger. Although it also has four strings, they sound at a lower pitch. As a result, the viola plays in a lower range and produces a richer timbre.

## **Cello**

The cello sounds one octave lower than the viola. It is also much bigger, and is held vertically between the knees instead of on the shoulder. It is supported by a metal rod called an endpin.

## **Bass**

The bass is the largest member of the string family, and it sounds in the lowest range. Although it looks somewhat like a large cello, the shape is different: notice how the upper part of the body slopes into the neck. The bass is also tuned differently. It is the least agile of the string instruments and seldom gets time in the spotlight, although a virtuoso performer can do amazing things with it.

## **Harp**

The harp is only distantly related to the other string instruments. Each of its 40+ strings is tuned to a different pitch, and they are plucked to produce sound. The harp is inaudible when the rest of the orchestra is playing, but it is often assigned important solo passages.

## **THE WOODWIND FAMILY**

All woodwind instruments produce sound when the player blows into the instrument, thereby causing the column of air to vibrate. All woodwinds were at one point in history made of wood, except for the saxophone, which has always been made of metal. However, this is not why they are classified together as a group. The reason for this is their similar construction, which constitutes a tube with holes. The more holes that are covered by fingers or keys, the lower the pitch, while the fewer holes that are covered, the higher the pitch. Additionally, the shape of the tube will influence the timbre: cylindrical instruments produce clear and brilliant timbres, while conical instruments produce round, vocal-like timbres. The inner dimensions of the flute and clarinet exhibit cylindrical bores (the tubing

is of a consistent diameter) and the oboe, bassoon, and saxophone exhibit conical bores (the tubing gradually expands in diameter throughout the length of the instrument).

In many woodwinds, the use of a single or double reed further modifies the timbre. Over time, orchestral composers came to prefer a system of paired woodwinds—2 flutes, 2 clarinets, 2 oboes, 2 bassoons—as the standard woodwind section, adding other instruments as they desired for color.

## Flute

Flutes can be made of various metals, although most professionals prefer solid silver. The player produces sound by blowing across an open hole near the closed end of the tube, and controls pitches both by depressing keys and increasing or decreasing wind pressure.

Flutes come in many sizes. It is typical for orchestral music to contain parts for the standard flute and a small, high-pitched flute called a piccolo. However, there are also larger flutes, including the alto, bass, and rare contra-bass flutes.

## Clarinet

Clarinets are typically made of wood with metal keys. The player creates sound by blowing air into a mouthpiece with a piece of cane (a **single reed**) attached, which causes the reed to vibrate.

Like flutes, clarinets come in various sizes. Orchestras typically include a soprano clarinet (also called a B-flat clarinet) and a bass clarinet, which is twice as large (pitched one octave lower). Composers also write for other sizes, including the alto clarinet (which falls between the standard and bass clarinets) and the high-pitched E-flat sopranino clarinet.

## Saxophone

The saxophone uses a single-reed mouthpiece similar to that of the clarinet, and the body of the instrument is made out of brass. Most sizes feature an upturned bell. The instrument's unusual name comes from its inventor, Adolphe Sax, who in the 1840s was seeking to create an instrument to blend the agility of the woodwind family with the large dynamic range of the brass family.

The saxophone is seldom found as a permanent member of the woodwind section in the orchestra, often appearing only as a soloist. However, it has become increasingly prominent in art music of the 20th and 21st centuries. It is best known for its use in jazz and popular music.

## Oboe

The oboe is similar to the clarinet in construction and appearance, but in place of a mouthpiece containing a single reed it utilizes a pair of reeds protruding