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# Why are there so many violins in a symphony orchestra, and when did the current number become standard?

Tobin Sparfeld, Conductor, Baritone

Violins are the most important instruments in the orchestra. They are the highest-sounding of the string instruments, which also contain violas, cellos, and string basses.

Because it is bowed and not played with air, violins can play long melodic phrases. And because the pitch is determined by one's fingers on the string, it is easier to produce varying vibrato which mimics the human voice than with other instruments.

Violins can also play two notes at a time. Called "double stops," they allow more complex harmonies to creatively evolve from the melody.

Violins are also able to play really fast passages well.  Check out the violins about 30 seconds into the Mendelssohn Scherzo below.  And since different string instruments sound similar, it is common to have strings play as a homogeneous group (unlike the winds, which all sound distinct).

So for those reasons, violins are almost always called upon to play! Very often they have the melody. If not, they often have an interesting counter melody. So you want to have enough violins to be heard, especially over loud brass instruments. Also, there are two violin sections (which usually play different parts), so there are going to be a large number of violins proportionally in any orchestra.

That answers why you see so many violins in an orchestra, but when did the number become standard? The answer is--**it's not standard.** The number of violins is sometimes specified (such as 24 in Penderecki's Threnody to the Victims of Hiroshima), but usually the composition does not specify the number of violins. Orchestras figure out how many violinists they need in order to balance out the instruments.

In Mozart's Symphony No. 40, the work is scored for strings and:

1 flute

2 oboes

2 clarinets

2 bassoons

2 horns

That's 9 instruments. Add too many string instruments and you'll never hear the others. That's why the orchestras look smaller when they play classical symphonies

Composed 100 years later, Mahler's Symphony No. 1 is scored for strings and:

4 flutes

4 oboes

4 clarinets in B-flat, C, A

3 bassoons

7 horns

4 trumpets

4 trombones

1 tuba

3 percussion

That's 34 non-string players, including many loud brass instruments. Your string sections need to be considerably larger.

Krysta Storer, Classical Musician

Violins play in the treble clef, which means they are the highest, and loudest. They are separated into two sections, First Violins (closest to the outside of the orchestra) and the Second Violins right next to them. There is no standard number of violins - I have played in orchestras with up to 30 first and second violins, and I have played in some with only 8 in both sections. It usually depends on the conductor or the organization to determine how many will be in the ensemble.   
  
Both sections are given different sheet music in an orchestra. This allows for harmonization, and more melody. The violins are usually playing the more flamboyant passages.   
  
This goes back as far as the baroque era, and it has been standard ever since. Even in quartets there are different parts for the First violin and Second violin.

Reuben Epstein

I agree with Krysta and Tobin. I would add that many violins or violas or cellos in unison have a desirable effect when blended as good players do.  Balance is important, but absolute dynamics, tone color, tonal impact, and power are all important devices that benefit from the force of many players. This is not necessarily a matter of balancing against the brass; string orchestras have several players per part, up to full orchestra strength, and the consideration there is what the music director interprets the composer's intention to be. That is very non-standard. Consider the Beethoven Grosse Fuga where the character of the individual voice and that intimacy is so effective, while there is a full-string-orchestra arrangement where the arranger decided that a large ensemble would be needed to provide the power needed to bring out the musical ideas in a dramatic way and in a new way.

James MacCloud

Because they are theoretically lower in volume than the other strings. (Theoretically because some makers [Stradivarius, 1710] made louder ones.)  
  
There was no standard orchestra when the 'modern' 1700 violins were first crafted. But the ad hoc and more permanent "baroque" ensembles had:   
  
4 '1st violins'  
3 second  
2 violas  
2 cellos  
1 bass   
  
(The basses and viola are related (both sloped shoulders, w/ basses tuned in 4ths [as lutes / Pandoras --1st fretted instrument]]); Meanwhile the cello is simply a big violin [both tuned in 5ths (as lyres were)].)  
  
Occasional winds were the oboe [double reed] and horn; then a bassoon and flute.   
  
The orch standardized around 1750 ['classical' period] , doubling the above; or for theater music something similar to  
  
7 1st violins  
6  
5  
4  
3 or 2 basses  
  
Then during later Mozart [1775] clarinets [single reed] were firmly established.  
  
(Single reeds and double reeds go back further than that (eg the medieval 'shawm' and Greek/Egyptian double reed instruments); but clarinets and oboes were the new kinds.)   
  
The new winds doubled to keep up with the growing 'classical' string orch and the growing demand for [repetitive-formed] music with the new Boehm System (fluid, quick keys) for wind instruments. See 'Mannheim School'.  
  
Trumpets and military percussion were occasionally added starting even before 1750. By 1790 they were standard. The strings increased to balance that.  
  
In the 19th century, culture wide economic high led to an ever growing 'romantic' period orchestra, peaking in the late 19th and early 20th century. It is an 8 bass orchestra:  
  
16 1st vi  
14  
12  
10  
8 basses  
  
3 of each wind; up to 6 horns and 4 trombones(one a bass version); and 2 tubas!; 4+ timpani drums with 5+ perc players too (2+ playing mallets [eg xylophone])  
  
The concert (stage) orch has been decreasing since then often. But note film orchestras can be bizarrely huge:  
  
occas 11 + horns  
26 cellos (new batman)  
some scores with few violins players; recordings double parts (eg star trek orig series)  
  
(Note massed horns play gently and have a MELLOW but still loud tone; fewer horns play brassy to be balanced /heard.)  
  
Theater pit orchestras (eg for "musicals") are reduction balance of the above. Famous common is:  
  
1 of each wood (doubling clari)  
3 horns  
2 trumps  
1 trombone  
2 timp  
1 perc (mallets)  
  
Then the baroque string layout...  
4 1st violins  
3  
2  
2  
1 bass  
  
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Why do we like high pitched instruments as 'leads' (that then need to be balanced thru asymmetrical numbers)? I don't know. Might be psychological expression of desire for reprieve from male mammal violence (fighting over reproduction /sex rights). Note the high line of an arrangement does pierce better (the 'melody' line often). Also high pitch is quicker in response to virtuoso "touch" (i.e more impressive display).

Timothy A. Duffy

I would add that the acoustic properties of the violin are such that doubling their number does not double their volume, so it takes any violins to play as loud as a single trumpet, for instance.  Relatedly, a large number of violins can play as softly together as a solo player.  This helps explain why many players are needed and useful.