

THE DIFFUSION OF OPERAS ACROSS EUROPE 1775-1833

RICHARD BRATH, UNCHARTED SOFTWARE. Interactive version: <https://codepen.io/Rbrath/full/ZEOYeb>

Operas associated with a composer started to spread across Europe in the late 1700's and early 1800's, based on data from Répertoire International des Sources Musicales (RISM); and conditions benefitting this dissemination may have been established earlier, such as composer movement.

OVERVIEW and INSIGHTS

The large graph visualization is essentially organized by time horizontally and opera vertically.

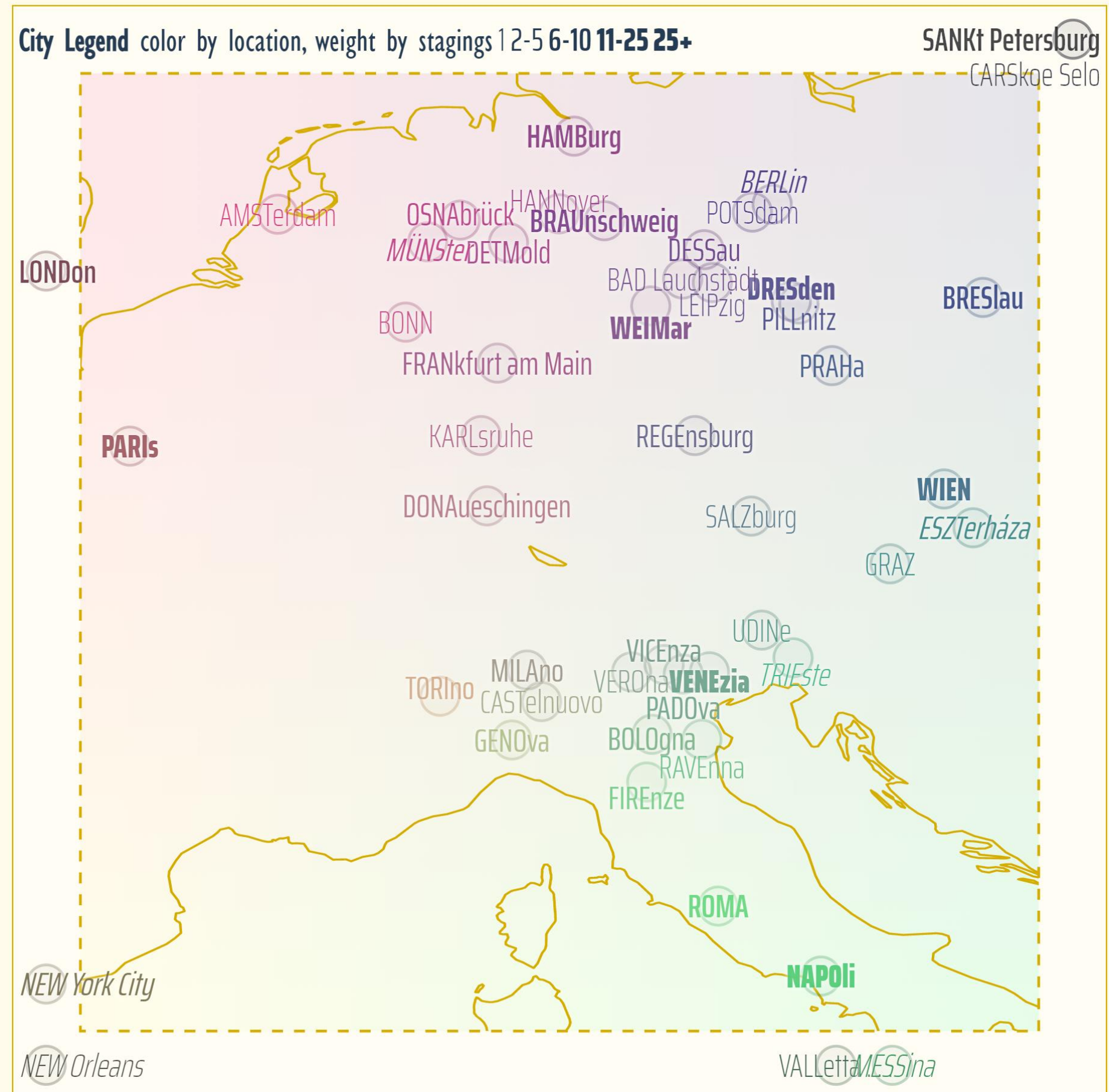
Librettists, often first involved in writing the text of the opera, are far left, followed by **composers** forming a bipartite graph. Edges between librettists and composers represent each opera between them. Each of these opera-edges is weighted by the number of stagings of that opera. *Mozart and Piccini each have 5 operas in this dataset (5 edges) – but Mozart's are more highly staged (thicker lines). Paisiello has many more operas than Mozart, most of which are not highly staged, but overall have similar stack heights indicating similar number of operas staged.*

To the right of the composer, edges connect to the title of each **opera**. The title text is weighted by number of stagings. *Most composers have a single hit opera, Mozart has four.*

From the title, edges extend along a horizontal timeline. Each **city** where the opera is staged is indicated by a node, with the first 4 letters and color indicating the city. This is a period of war and reconfiguration of nations: a few events are shown on the timeline axis at bottom. *Note how stagings of Piccini, Anfossi, and Paisiello largely drop off after 1797 - the end of the republics of Venice and Genoa.*

At the far right, librettists are repeated to directly connect them with their corresponding operas. *Da Ponte has many thick edges, indicating multiple frequently staged operas. Da Ponte's operas lead to three different composers, thus Da Ponte's successes were not limited to specific composers.*

Geography is central to the analysis. Cities are color-coded so that close cities have similar colors:



Northwest is magenta (e.g. Amsterdam), southeast is green (e.g. Napoli), etc.. Cities further away are darker, e.g. London dark purple in the northwest, Sankt Petersburg dark blue in the northeast.

Font-weight indicates the number of stagings in a city. *The heaviest-weight cities are presumably the most important cities for opera in this time. Venezia is heaviest-weight at 31 operas performed, Napoli at 25, followed by Wien, Weimar, and Dresden at 12-13 each.* These same weights are used in the main graph, making it easier to identify key cities. **Italics** indicate supplementary cities and performances added to the data (see Critical Analysis section).

Understanding movement: Cities in the main graph are core to understanding opera movement. Cities are connected to *operas* and *composers* on the left, *librettists* far right, *sequence of stagings* horizontally with city distance indicated by degree color difference, *city importance* by font weight and *number of stagings* by edge thickness. With all these relationships, the following can be observed:

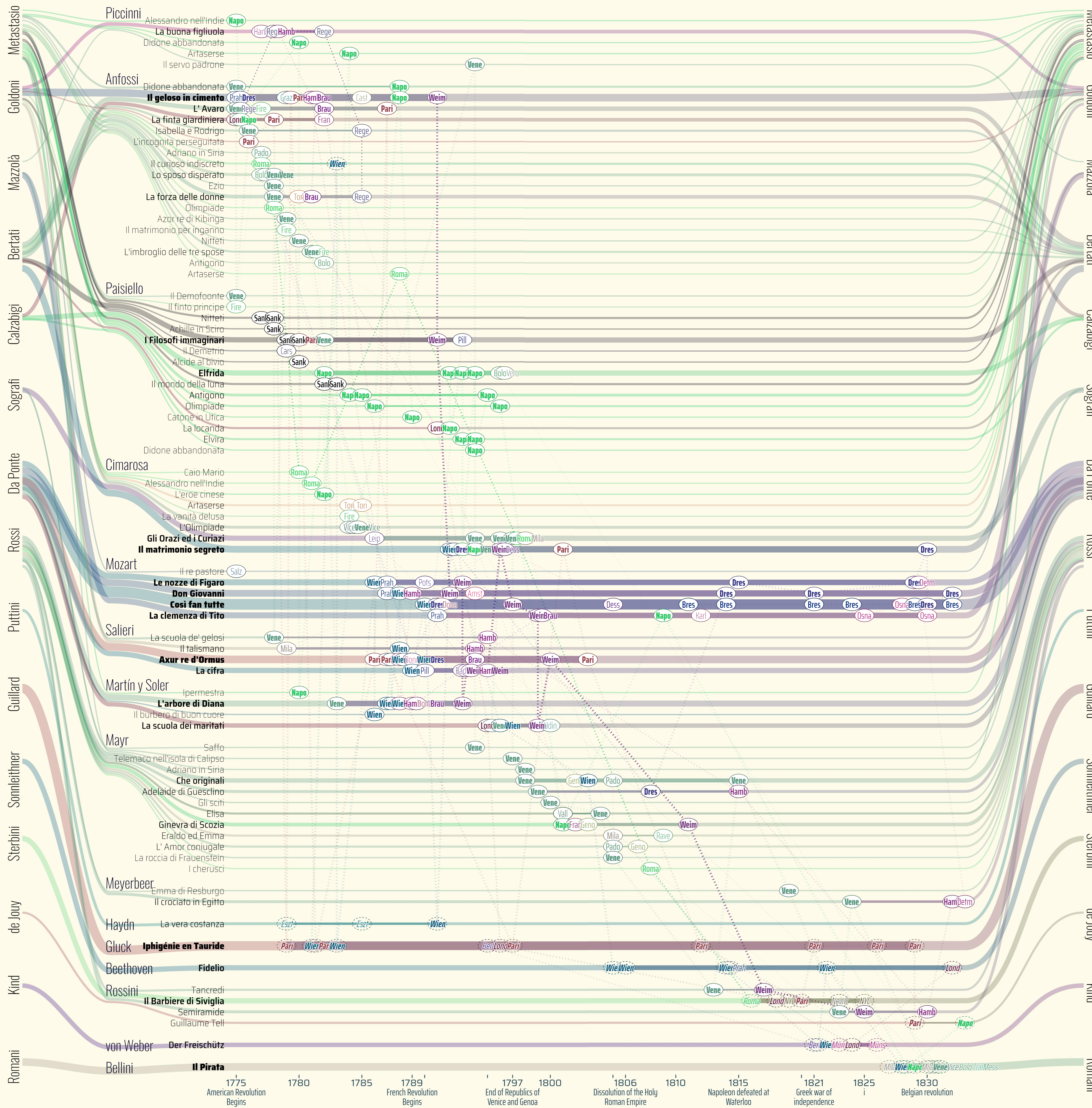
Opera movement can be observed by the range of city colors along an opera's timeline. *For example, Piccini, Anfossi and Paisiello have many greenish dots indicating most of their operas are performed across Italianate opera houses. However, each of their most popular operas are travelling; for example Il geloso in cimento has many differently hued cities, indicating it is widely performed across continental Europe: Praha, Graz, Paris, Hamburg, Castlenovo and Napoli before 1788.*

Composer movement. The edge connecting the first performance to the composer (and librettist) is colored by the city of first performance. Further, each opera is ordered by date of first performance. *Thus, if composers reside in city of first performance, then we can see movement of composers. For example, Paisiello is in Venice/Florence around 1775, then in Sankt Petersburg for a half decade before moving to Naples around 1784 with one interruption in London in 1791. The movement of composers may be helping spread operas across Europe.*

Distance of movement. The edges between the first staging and the last staging are colored by the average city color of all the stagings for that opera. Thus, an opera that does not range widely, tends to be a distinct color, while a wide ranging opera will become more greyish hue (the average of many different hues). *Paisiello's Elfrida has a green edge between first and last performance, indicating it does not leave central Italy, whereas Anfossi's Il geloso in cimento, has a greyish edge indicating broader geographic performances. Interestingly Mozart's edges tend towards purplish-blue indicating that most of his stagings were in Prussia/Austria, with a few exceptions. Generally, operas performing within similar color cities are performing within an area of the same language - making the jump to a different language region is presumably more difficult to achieve. Looking at sequences with many differently-colored cities with heavyweight fonts, it can be seen when breakout operas reach major opera cities, such as Il geloso in cimento (Dresden, Paris, Napoli by 1788), Paisiello's I Filosofi immaginari (Paris, Venezia, Weimar by 1791), Martin y Soler's L'arbore di Diana (Venezia, Wien, Weimar by 1793), and Salieri's slightly more saturated Axur re d'Ormus (Paris, Weimar, Dresden by 1789). By contrast, Mozart doesn't breakout of Germanic region until Napoli in 1809.*

Opera sequence per city is shown as a dotted edge zigzagging between operas. As there are many cities, most edges are transparent with a few opaque to facilitate discussion: *Regensburg occurs early, staging 5 operas between the two composers Piccini and Anfossi. Roma stages 6 operas between two Italian composers Anfossi and Cimarosa between 1777 and 1797 then moving on to Mayr in 1808. Weimar has an earlier diverse cross-section of composers, starting in 1791 with Anfossi, Paisiello, Mozart, Cimarosa, Salieri and Martin y Soler - 6 different composers by 1800.*

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CRITICAL ANALYSIS

Visualizations, including graph visualization, should support generating new hypotheses and critical questioning, not just insights. Can this visualization be trusted? Is there missing data?

This author (a non-expert of operas) has added some extra operas and stagings to the graph, with their performance cities shown as dash ellipses and italic text, as well as connections to their titles, composers and librettists; based on the following questions and answers from some Internet sources:

• Are there missing operas?
18 operas are provided in the dataset for Anfossi. Wikipedia lists 68 operas by Anfossi, although perhaps some have been lost?

• Are there missing composers?
The Guardian's list of Top 50 operas shows operatic composers active at this time, such as Beethoven, Gluck and von Weber - missing in this dataset. A few of their operas have been added at the bottom.

• Did operas begin to disseminate before 1775?
For example, the libretto Demolante by Metastasio was written in 1733, which led to 73 operas, including Paisiello's in 1775 Venezia, Galuppi's in 1749 Madrid, Duni's in 1737 London, Perez's in 1752 Lisbon. Metastasio's Alessandro nell'Indie was used in operas by Vinci in 1729 Roma, Handel in 1731 London, Hasse in 1731 Dresden, Lucchini in 1734 Praha, Corselli in 1738 Madrid, Wagenseil 1748 Wien, Jommelli 1760 Stuttgart, Sarti 1761 Copenhagen, and so on.

Thus, librettos were diffused across Europe well before 1775. Composers of operas were travelling before 1775 as well, for example Handel, composed and performed operas in Hamburg in 1705, Firenze 1707, Venice 1709, and more in London after 1711. Thus, the operatic form was being disseminated across Europe well before 1775.

• Are there missing cities? Or, over-represented cities?
In the prior bullet, operas were performed in cities such as Madrid, Lisbon, Stuttgart, and Copenhagen before 1775. Original documents associated with these cities may not exist in RISM. Similarly, some cities dominate, such as Venezia, Napoli, Wien, Dresden and Paris. Were operas not performed as frequently in other cities such as London, Amsterdam and Madrid, or were the citizens of these cities less adept at archiving documents, which in turn then appear less frequently in the RISM database?

• Are there missing continents?
For example, Rossini's IL Barbiere di Siviglia travelled to the Americas, performing in New York City and New Orleans in the 1820's.

• Are there other movements?
Operatic singers also moved across Europe, for example, Handel travelled to Italy to engage singers. Librettist Da Ponte's career spanned Wien, London and New York City.

• How is the movement facilitated?
Some of operas are performed at the same time in different cities. Thus, there is a need to create copies of operas and this period is coincident with the advent of music publishing. For example, at Lisztferbana in Hungary, Haydn conducted his own and others' operas, with more than a hundred performances per year, thus, Haydn needed copies of this music, potentially fulfilled by the music publishers. In 1779, Elpidio was permitted to sell compositions through music publishers, and achieved international popularity (but not his operas).*

How should the critical analysis be interpreted? The RISM catalog provides a graph which shows evidence from source documents regarding operas and their performances across Europe. Various patterns of dissemination are clearly visible, and thus represent a *ground truth* based on hard evidence.

There is additional information, beyond RISM, which may support additional insights, although the additional information is based on sources distant from the original documents. Any findings from this additional information should be validated from authoritative sources.

*Wikipedia and other Internet sources are acknowledged to have accuracy issues. For example, did Haydn really perform more than a hundred of operas per year? *The new Grove dictionary of opera*, edited by Christina Bashford and Stanley Sadie, Macmillan, 1992, is an authoritative resource, but not available to the author, and presumably not easily transformed into a graph.

*This graph visualization was created by processing the graph data in Javascript and drawing the graph using the visualization library D3.js. Only a small amount of supplemental data was added, and typically the author attempted to find a corresponding performance in the RISM database, e.g. von Weber's Der Freischütz in Berlin 1821 (id:454008436), Wien 1821 (1001064227), Münster 1823 (451502003), etc., although not all performances indicated on Wikipedia match a RISM document. See the on-line version of this graph, with some limited interactions, e.g. to click through to the RISM page for a performance, or click a composer or librettist for a Wikipedia page. Available at <https://codepen.io/Rbrath/full/ZEOYeb>

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