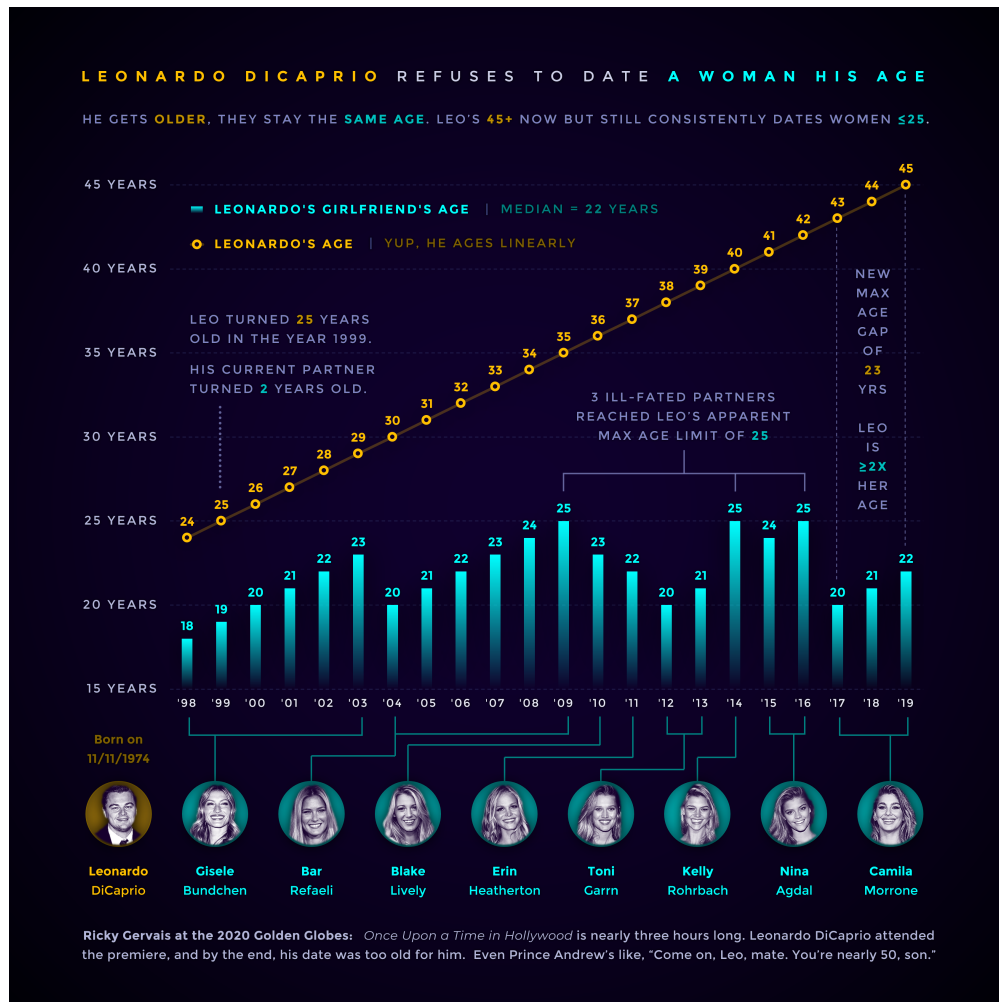


# CS171-HW1

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## 1 Good and Bad Visualizations

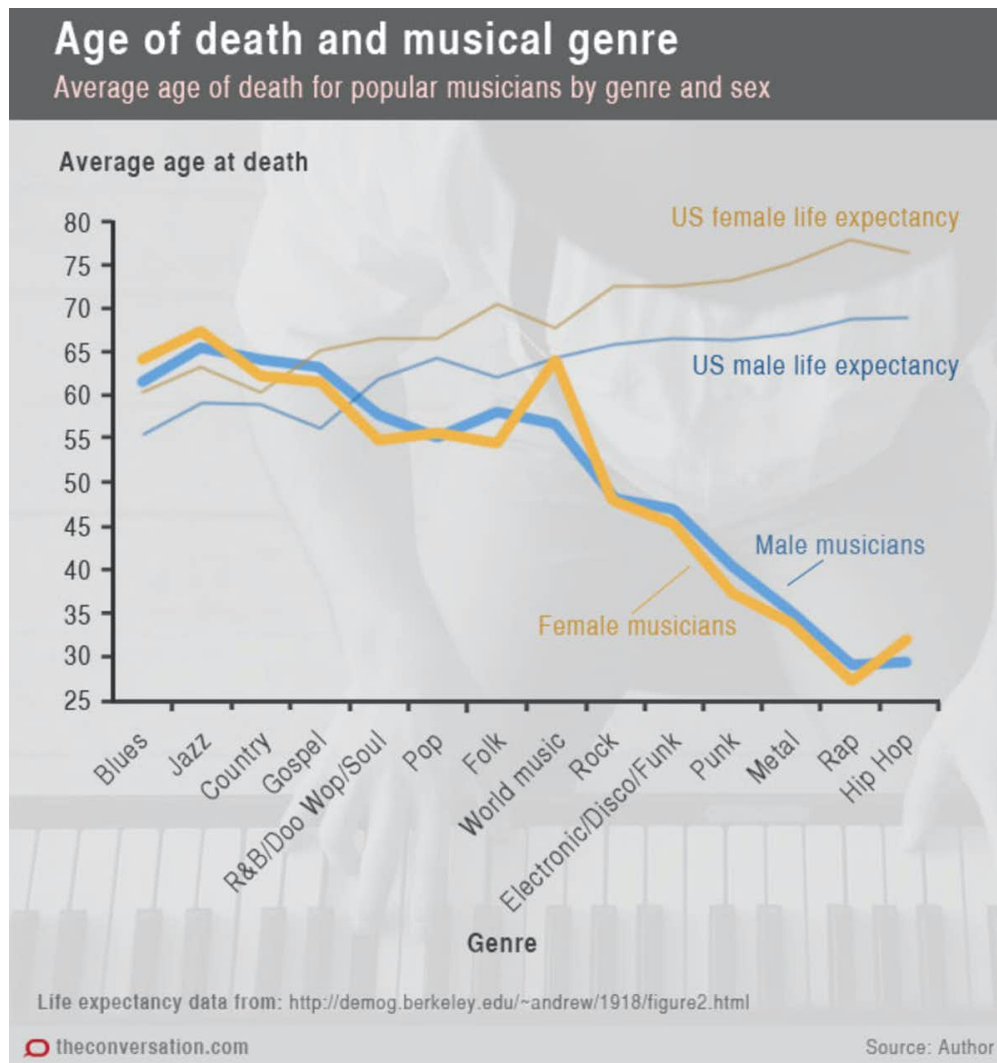
### Good Visualization



- **Source:** [Reddit](#), posted/made by u/TrustLittleBrother.
- **Relevant Information:** Data collected from various magazines and wikipedia. Graph made using Microsoft Excel (yes, really) .
- **Rating:** 4.5
- **Critique:** The overall design of this visualization is quite appealing and effective. The orange/blue coloring scheme is kept consistent throughout the entire graph, even in the notes/asides around the data, so the reader can get the same information (what is Leo's age and what are his dates' ages)

regardless of which part of the graph they read first (the axes, the title, the legend). The x-axis is beautifully designed, managing to convey three key pieces of information: the year, the partner and the duration they dated, and the partner's age in bar-graph form. The notes/asides scattered about the graph don't interfere with the main data, and also pull out key points/analysis, such as an apparent maximum age, as well as maximum age gaps. The legend also gives the median age of his dates, rather than trying to super-impose that on their data somehow. The only issue I can potentially see that violates a visualization rule is that the y-axis does not start at 0, but this is excusable as it is unlikely that Leo was dating from birth. However, what is less clear is if there is a lack of information about his dating history prior to his turning 24 or if it was excluded for a reason.

## Bad Visualization



- **Source:** The Conversation's article, "Music to die for: How genre affects popular musician's life expectancy."
- **Relevant Information:** The genres are arranged from "oldest" to "youngest" on the x-axis, and the Life Expectancy values for the general populations were calculated for the subset of the population born in the same year as the deceased artist, according to the article.
- **Rating:** 0

- **Critique:** Well. Where to start. First we can talk about the overall design of the graph. They are using a line graph, which gives the initial impression that we are tracking changes over time. However, the x-axis is actually by genre and not any sort of quantitative unit of time. At this point, you remember that the genres are sorted by ‘age’, so there’s some sort of chronological arrangement, but no dates/years are given at all, so you can’t reliably associate age/year with any of the data and can only go by genre. The y-axis is the average age of death - but the line graphs give no idea of the distribution for each genre, unlike a more suitable boxplot graph would. They use two different line widths to signal two different data sets, rather than changing the style of the line, which is more common. There is an increasingly larger issue of calculating life expectancy for ‘younger’ genres, as the generation probably isn’t old enough for a reliable life expectancy value to be calculated yet - so where is that data coming from and is it reliable? A couple of other issues: there’s no mention in relation to graph the number of artists included in each genre, which could skew the data. And there’s no “average age of artists in the field”, which could skew the data - if all the blues/jazz artists are older on average, then yeah, the average age of their death will be more in line with the average life expectancy. No redeeming qualities.
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## 2 Exploratory vs Explanatory Visualizations

### 2.1 You Draw it

#### a. Is it exploratory or explanatory, and why do you think so?

I believe it is explanatory because I’m not looking at raw data, but processed data included specifically to convey a point.

#### b. What question(s) about the data did the authors try to answer?

What do you, as the current reader, think this relationship is, and then subsequently, how did your guess compare to both the real data and everyone else’s guess?

#### c. What new insights did you learn from the visualization?

That affirmative action/initiatives to have a “well-rounded” student body barely make a dent. If it was, you might anticipate a more bimodal relationship than a linear one, where affirmative action would help increase the enrollment of the traditionally poorer minorities while not helping the dominantly white middle and upper classes. In terms of the visualization - that you can collect and process data in the DOM (I think?). Super cool!

#### d. Who is the likely audience of the visualization?

I feel like it’s aimed at a broad audience, as both the interaction and the article don’t make a whole lot of assumptions about what people do or do not already know.

#### e. Does it have a point of view or a message, and can you describe it?

I think the point is stated rather plainly: they asked the reader to draw their chart because they wanted the reader to actively think about these factors and the relationship between them. Coming up with a wrong answer and then finding out the correct one is a much stronger learning tool than simply telling the reader the right answer.

### 2.2 An Interactive Visualization

#### a. Is it exploratory or explanatory, and why do you think so?

I would honestly say both. It starts off as exploratory - here’s my data, here’s how it’s processed, feel free to play around with it - then moves into a section where the author pulls out a realization/conclusion she made by examining the data, which fits more with explanatory, and then returns to ‘play around with it some more.’

**b. What question(s) about the data did the authors try to answer?**

By examining the lyrics and associating them with broader themes, could she pull out any insights about characters, relationships with each other, and hidden plot lines?

**c. What new insights did you learn from the visualization?**

As someone who hasn't seen Hamilton, I can't speak to any particular insights about the musical and characters, as I have no base knowledge/context to build upon. However, I appreciated her ability to quantify something that is rather qualitative in nature - lyrics - and then also find a way to visually display everything. It's quite an impressive project to do simply for fun.

**d. Who is the likely audience of the visualization?**

Fans of Hamilton.

**e. Does it have a point of view or a message, and can you describe it?**

Well, the message of the explanatory part is that the lyrics reveal that Eliza has a much more interesting/fulfilling story than the author originally thought. I'm not sure exploratory visualizations have a message.

## **2.3 Bussed Out**

**a. Is it exploratory or explanatory, and why do you think so?**

I think it's explanatory - we are looking at data visualized in such a way to communicate something specific to the audience.

**b. What question(s) about the data did the authors try to answer?**

Broadly, how many people use this service, where do they go, who do they stay with on the other end?

**c. What new insights did you learn from the visualization?**

I mean, a lot, since I had never heard of this before. The visualizations were used quite effectively to tell the story. I really appreciated how, in the "Homeless relocations from New York City" visualization, distinct/separate parts of the animation were included to highlight key points - New Zealand as farthest destination, Puerto Rico as most common international destination, Orlando and Atlanta (my birth city and the city I grew up in, weirdly enough) as the most popular domestic destinations - before filling in all the data, ensuring that these stood out.

**d. Who is the likely audience of the visualization?**

General populace - doesn't presuppose any existing knowledge on the part of the reader.

**e. Does it have a point of view or a message, and can you describe it?**

The visualizations themselves don't include any message other than showcasing the data I think, beyond showing the data and key trends. Except for the last graph, perhaps, which includes a hypothetical situation. This is a prediction, suggesting that the bussing programs have largely reduced the potential homeless population in San Francisco, in comparison to what it could have been without the program.

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## **3 Effective Visualizations**

**a. What does Hans Rosling do and say to communicate his data effectively? Give a comprehensive list with your explanation for each observation.**

Hans first sets the axes and legend, gives the audience some possible trajectories about how we might see the data change, thus orienting the audience to what they are looking like and gets them thinking about the different ways the data could change and how those changes could be interpreted. He then runs through the entire interactive display very animatedly, providing lively commentary on top of what would just be watching bubbles move. Then he isolates two specific examples to compare, which involves both highlighting features of the interactive software (trails) and providing some explanations of factors contributing to the differences in trajectories.

**b. What strikes you about his visualization?**

Well, when I watched this for the first time back in...2008, 2009?...it was the first time I had seen interactive data, just not a stagnant graph, and it was extremely impressive. What strikes me now is how he managed to condense and showcase what is actually quite a lot of data in a relatively small amount of time, while pulling out the key patterns and takeaways.

**c. Provide some concrete examples of what you saw and how it worked for you.**

For example, he quickly and easily explains the drastic downturn in life expectancy in African countries by mentioning the HIV epidemic. He mentions that family planning becomes a prominent in the late 80s/early 90s and that factors into decreased fertility across the board.

**d. Overall, did his talk have an impact on you? Did you change your mind or did you learn anything new?**

The subject matter did not have a sudden impact on me, no, because I think I've watched this talk at least two or three times since it aired in 2007. However, this time I was paying closer attention to how the visualizations he chose helped convey the story, and how his narration (in contrast to just watching a moving graph) both helped keep the audience engaged and provided context and explanations of the factors contributing to the patterns of the data.