

Have you ever tracked your hours in a day?

We are often told that we all have the same 24 hours in a day. If you are curious about how your peers divide and allocate their hours, Nathan Yau has put together this insightful, clean and efficient visualisation ([How People Like You Spend Their Time](#)) illustrating the results of how different demographics spend their time. Using data taken from the American Time User Survey in 2015, (U.S. Bureau of Labor Statistics) Yau has created an interactive tool that allows the audience to filter the results they want to see from the following demographics:

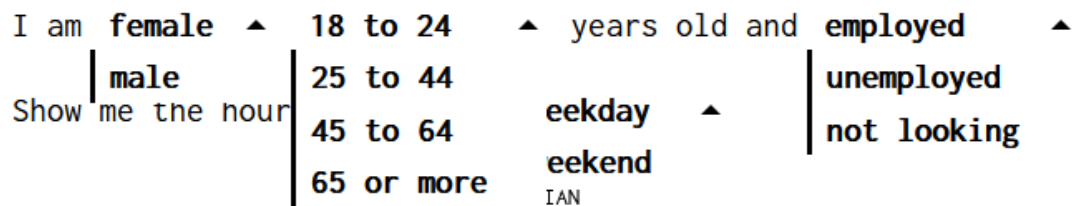
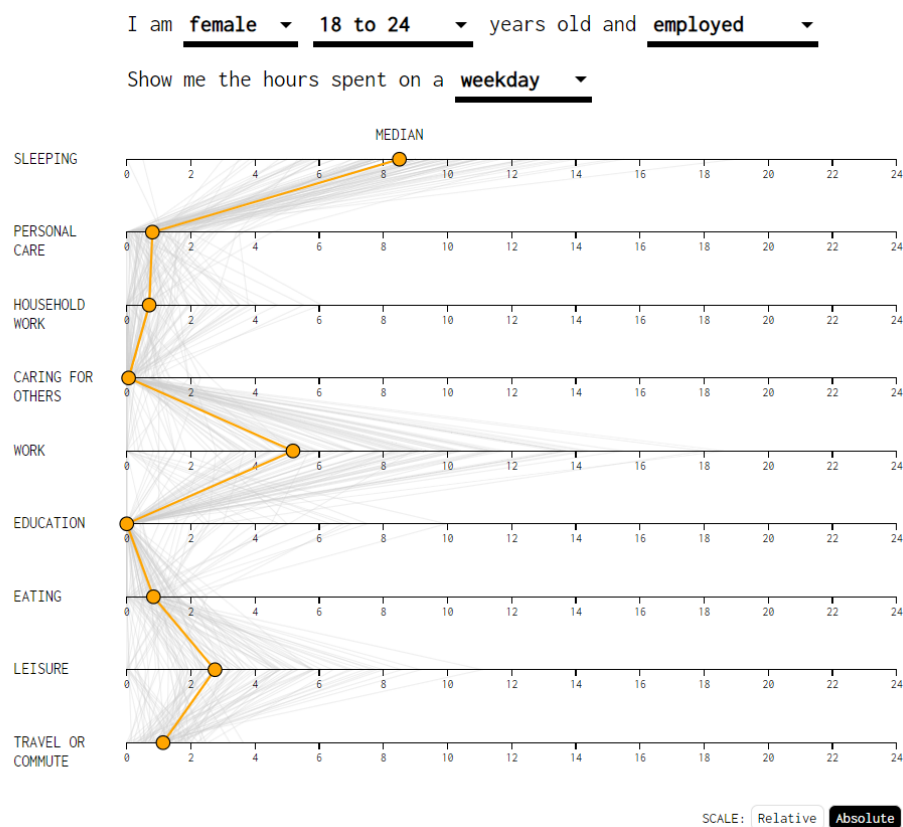


Fig 1 Demographics available to choose and compare

Yau has used parallel coordinates, whereby each row on the chart represents a specific activity, and each grey line represents the hours spent in one person's day. The only colour available in the visualisation is a bold orange line, which represents the median hours spent on that activity. This provides a clear reference point for understanding the typical time spent on that activity within each demographic group.



This results in a clean and clear graph that allows for easy comparison across demographic groups. A parallel plot is a powerful visualisation technique because these charts can find and show relationships or patterns between many different variables (Ribbecca 2021). By using parallel coordinates, the visualisation efficiently displays multiple variables simultaneously, allowing users to compare and analyse relationships between variables without needing separate plots for each use, saving space, and allowing functionality in one space.

Each of the interactive elements have been tested, and it is clear to the audience how to interact with the data. Interactive features enhance parallel coordinates plots, allowing users to engage with the visualisation by filtering or choosing specific data or subsets, thus enhancing the user's ability to explore the data and gain deeper insights. The interactivity enables users to switch between relative and absolute scales, allowing comparisons between demographics and activities. Using the absolute scale allows for a clearer comparison of time spent across the various demographics.

There is a wide range of variability in time spent among different individuals within each demographic group. This variability leads to criss-crossing lines which indicates that some people spend a lot of time on these activities while others spend less time. Criss-crossing lines can be difficult to understand. The outliers are noticeable but with multiple lines overlapping, a clear and specific trend can potentially be hard to see. This visualisation doesn't incur this problem too much but could be problematic if a larger sample size of the data was included. Providing tooltips for individual lines could counteract this issue and enhance its interpretability (Nielsen Norman Group 2019).

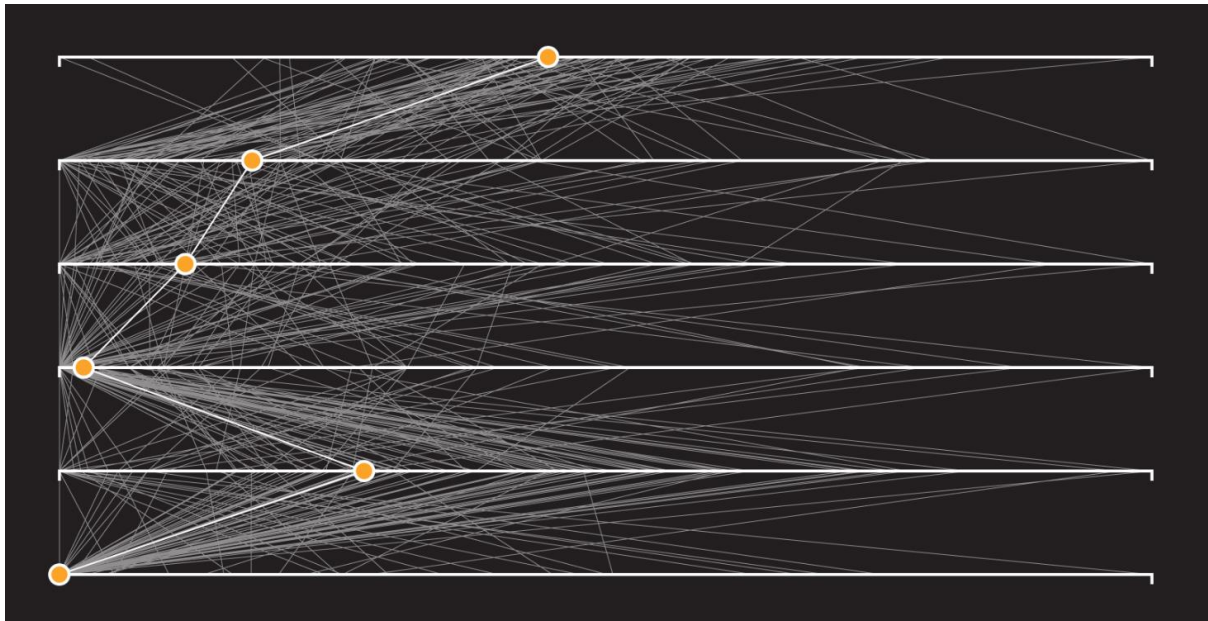
We all have our routines, but from person-to-person, the daily schedule changes a lot depending on your responsibilities, age and even gender. If you work, company hours dictate much of your schedule. What the visualisation doesn't delve into is what part of the day is being allocated to what activity. This gives the impression that time is a limited resource that is available equally. This is illustrated on the absolute scale. It's a shame that there aren't extra filters to add such as number of dependents or working patterns to gain a deeper understanding of the individuals behind the data.

“Above all else, show the data.”

– Edward Tufte (1983) The Visual Display of Quantitative Information

Yau has tagged this visualisation on his website as “Data Underload”, and this is a big factor in why the visualisation is so effective. We are often told less is more, and this is true when visualizing data. We want to avoid distracting from the data with graphics and colours and anything else that is unnecessary.

Tufte introduced the concept of maximizing the **data-ink ratio**, where every piece of ink in a chart should represent data and this is exactly what Yau has achieved with this piece. If anything from this visualisation was to be removed, context and meaning would be lost.



Even in all its simplicity, the visualisation remains eye catching, and draws attention with its minimal use of colour to easily distinguish the median line, allowing the viewer to get a global sense of the data. Isn't it ironic how a visualisation about how we spend our time, can save users their own time by being presented in a clear and effective way? There are limited choices, it is easy to navigate and understand, the data is clear, and the visualisation summarises a wealth of information and saves the user time and effort.

The main reason I like this visualisation so much is because the audience can be anyone. Choose your gender, age, employment status and start filtering and comparing. The audience and purpose are clearly related, it is personal and relatable to all of us. The activities listed are common daily activities and the title of this visualisation encourages the audience to take a closer look and spend some time working through the data.

An improvement to this visualisation, would be an option to see all the demographics at once and be able to compare in one chart at the same time. This would require colour coding to differentiate the demographic groups.

Key Message of this Visualisation

Are you making full use of the 24 hours available to you, and how do these compare to your peers? Are you surprised by these results?

I wasn't overly satisfied that as a 31-year-old, the demographic I belonged in was the age range between 25 and 44 years old. A lot of life changes occurs in this period, between graduating, marriage, having children, it seems illogical to represent this range as one age group. Further to this, as a full-time student who is also in employment, the choices available didn't fit my situation, making it difficult to compare myself to the data. And isn't this what I really want to do with this visualisation? It's hard to feel like this data is hugely relevant to me. The data that the author has chosen to use could have been expanded upon, Nathan Yau hasn't explained or

given any reasoning behind his choice of demographics used. After reviewing the source data approximately 10,900 individuals were interviewed, so the visualisation could be improved by using different demographics from the sample data.

Albert Cairo said that data visualisation should enlighten people, and that is something that this visualisation does well. What better way to enlighten people than to get them thinking about how and where they spend their time?