

[Open in app](#)[Get started](#)

Published in UX Collective



Jovina Rahardjo

[Follow](#)Nov 3, 2021 · 8 min read · [Listen](#)

Save



How research builds the designer

The symbiotic relationship of research and design, and why need to do both effectively as a designer.

Photo by [mentatdgt](#) from [Pexels](#)

[Open in app](#)[Get started](#)

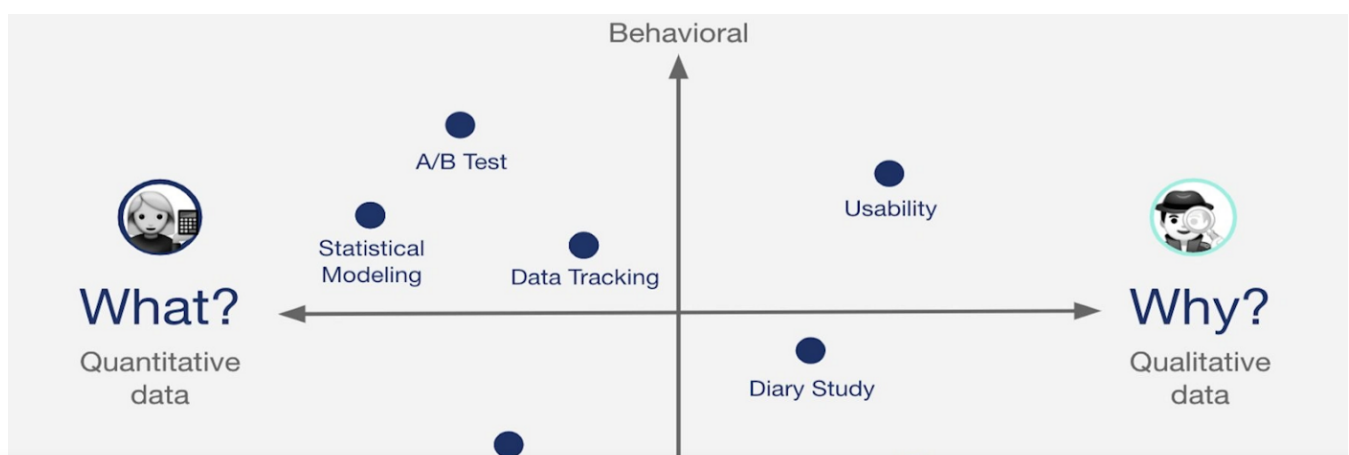
result of this diffuse designing is a newfound sensitivity towards the world and the

potential for innovation. However, design as an expert profession did not exist up until recently.

Design Requires Research

So what differentiates a designer, and someone who designs? In order to understand what makes an expert designer, it needs to be understood that “Design is a service first backed with profound knowledge” (Manzini, 2003). This knowledge is better known as the act of research and can be generated either through proper methodologies, or through mere cultural awareness. I believe that in order to produce meaningful insights or tools for the audience, both are needed. We cannot design accessible products for colorblind people, without first doing proper study on the different types of colorblindness and surveying actual colorblind people.

An example of a holistic research approach is by the team over at Spotify Design, combining qualitative and quantitative data, following a What-Why framework as shown in figure 1. Data scientists work together with user researchers to make more user-centric product decisions through their combined information. For example, a 3-week diary study was conducted to study the experience of freemium Spotify users, which basically limits the number of song skips a day to 6. Users were prompted with questions about their experience, and they input “diary entries”, providing insight for the user research team about their perceived experience. This data was then compounded with behavioural data, such as how long they listened for, how many ads they received, and which ads they skipped (Kolenda, 2019).



[Open in app](#)[Get started](#)

Research Requires Design

Other than the fact that research is crucial to good design, the presentation of research also needs to be designed for it to be effective. In such an objective field such as information and data, people tend to overlook the integral role in which design plays. It's a double-edged sword, in the sense that it delivers data in the most efficient way possible through visualisation treatments, yet in the hands of a designer with an agenda, it may be misleading. Humans are comforted by truth, which they associate with research and rationale, hence why data is an integral part in influencing choices, be it social or economic ones.

It's a double-edged sword, in the sense that it delivers data in the most efficient way possible through visualisation treatments, yet in the hands of a designer with an agenda, it may be misleading.

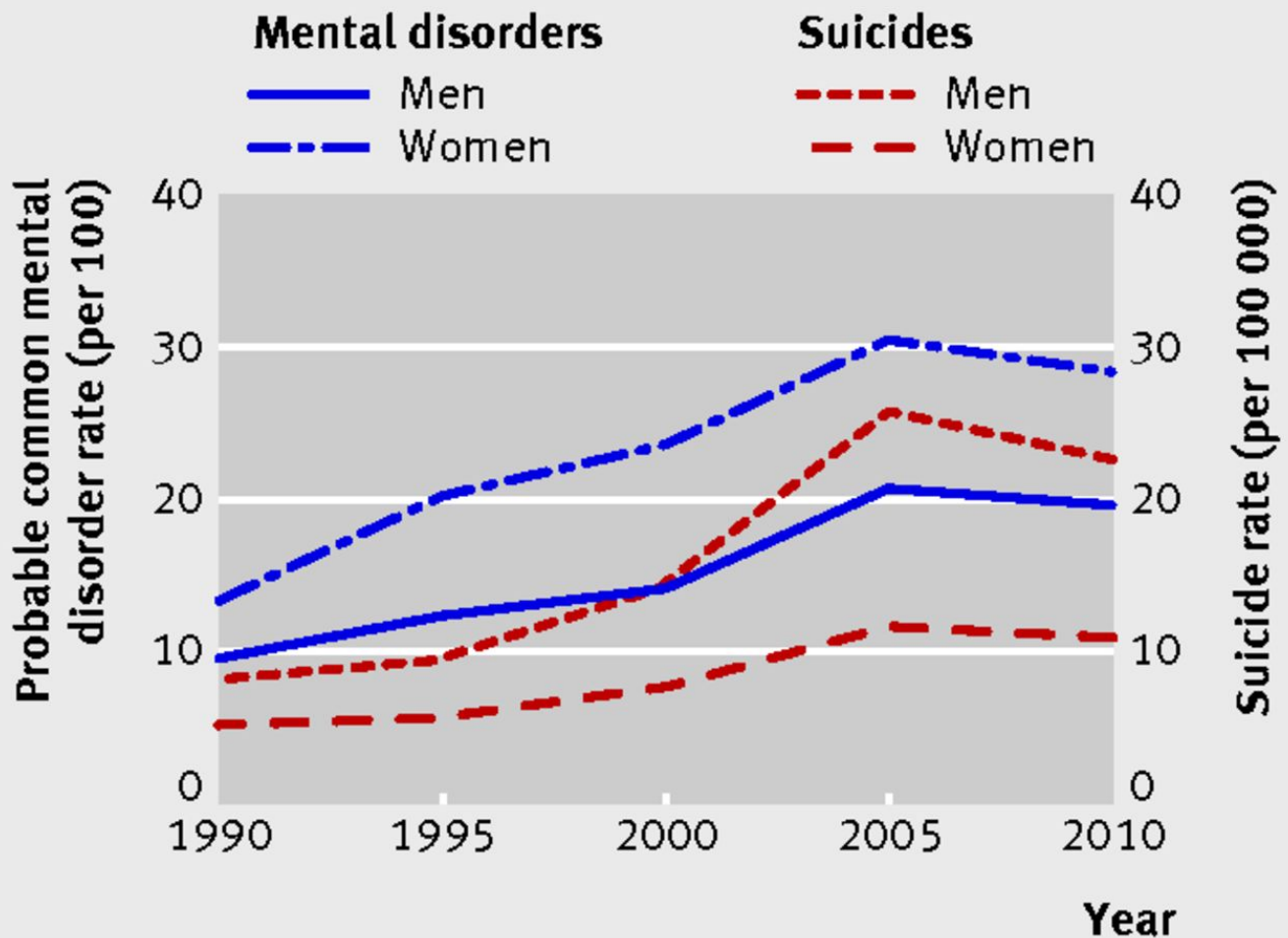
In certain cases, visualisation errors happen due to bad use of color scheme, or unnecessary decorative elements (such as the 3D pie chart). Sometimes it happens because it's intended to hyperbolise discrepancies and enlarge the scale, or imply certain things to elicit a certain emotional response (Colclough, 2019). This may be the case for "cherry-picked" data, or deliberately limiting the scope/methodology of datasets to produce a specific outcome. These types of misleading data treatments happen all the time, in the news, in a classroom setting when students are trying to prove their arguments, in social media meme pages and even in scientific papers. The one thing these bad visualisations all have in common, regardless of the Whys, Hows, and Wheres, is that they all fail to represent their quantitative counterparts. Contrary to popular belief, numbers cannot speak for themselves.

A study on the changing trends in the prevalence of Common Mental Disorders in Taiwan is an example of how even research in scientific journals may incorporate bad visualisation. Refer to figure 2.




[Open in app](#)
[Get started](#)

Common mental disorders and suicide in Taiwan



The chart shows a dual axis graph of probable CMDs and suicide rate in men and women in Taiwan. The X-axis is a timeline and the Y-axis is the rate of suicides and CMDs. Dual axes graphs are commonly employed to show a causation effect, which is apparent here as the rise of CMDs correlates with suicide rates in Taiwan. However, there are a few issues with this graph:

1. The first issue lies in the difference of sample size of the graph, which magnifies and makes it seem more drastic than it is. The CMD rate is calculated per 100 people but the suicide rate is per 10000. Yet from the get go, it may seem like the suicide rate is catching up with CMD rate, meaning something completely other



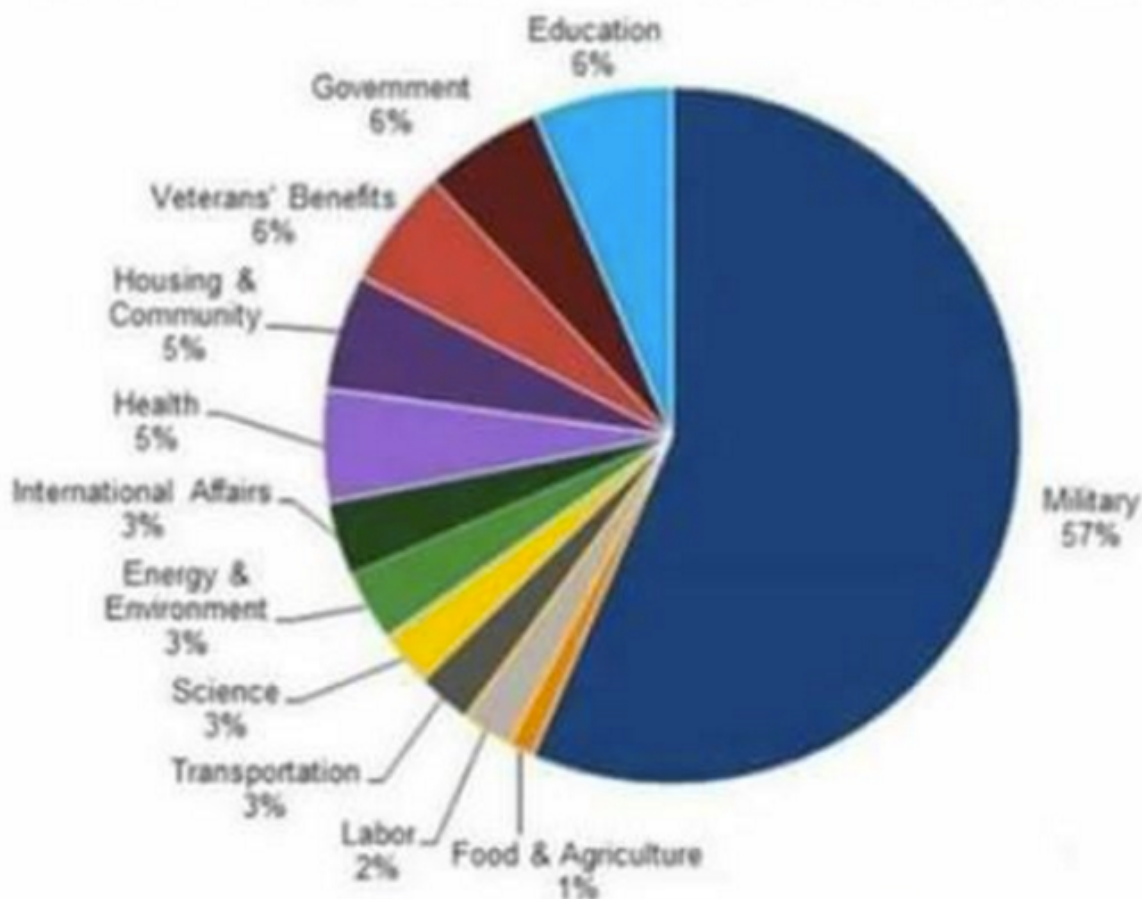
[Open in app](#)[Get started](#)

differentiation of the two gender samples be through varying shades instead confuses the reader, who'll have to refer to the legend for clarification.

This was an example of a bad visualisation. However, it's not one that is entirely detrimental and it doesn't obscure the purpose of the research, which is still in line with whatever the data is trying to say. However, the next dataset I'll be showing is one that can qualify under misleading information, trying to stir up a response and perhaps even just fundamentally wrong.

In 2015, a meme circulated in Facebook, about a pie chart of what the US government's federal spending looks like.

Look closely at this chart of federal spending.



Somewhere within the tiny orange sliver at the bottom is the food stamp program that Republicans blame for our budget deficit.



[Open in app](#)[Get started](#)

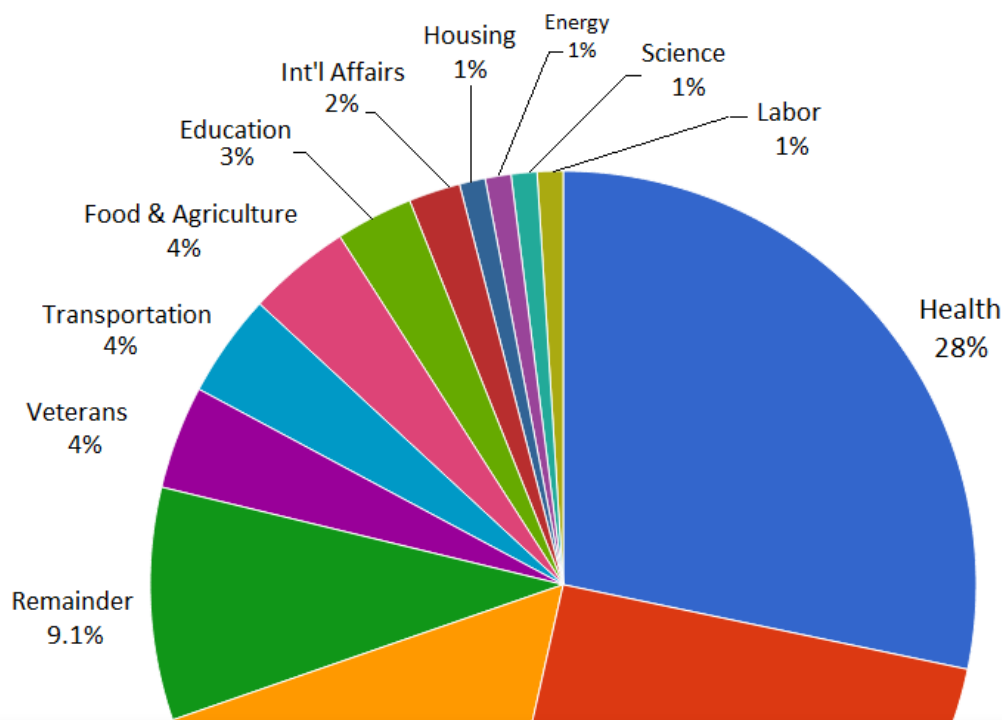
background information about federal spending to provide context. According to

National Priorities (n.d.), it's divided into discretionary spending and mandatory spending, with the former being composed of programs with budgets that allow for ad-hoc adjustments through a process called "appropriation", meaning it's agreed upon by the president and congress.

The other category is mandatory spending, whereby the allocated budget is determined from a formula of the number of people eligible by age or income. In other words, this budget is fixed and independent from change subjected by anything other than the formula or the variables themselves. This category comprises Social Security, Medicare, and Medicaid.

The problem with this pie chart is that it completely leaves out mandatory spending, when in fact 60 percent of all federal spending is considered mandatory, with 34 percent considered discretionary and 6 percent devoted to interest. Politifact, a fact-checking US website, recreated the chart to include all of the federal spending.

Percent of spending, including discretionary and mandatory



[Open in app](#)[Get started](#)

If we compare it, the military budget drops from 56% to 16% and the majority of spending ends up being taken by healthcare and social security. The previous pie chart mentions that food stamps program amounts to just 1%, whereas it actually is 4% of the budget (Jacobson, 2015). From this, we can conclude that in order to properly digest what a chart entails, context needs to be provided with an unbiased methodology. Another takeaway from this analysis is that research into context is extremely relevant, not just for the designer, but for the users digesting the information.

The symbiotic relationship between research and design is a beautiful one that many people still struggle to make sense of. One confusing design with art might argue that design exists purely for aesthetes. However, if there's one thing that I learned in design school, it's that though we pay homage to the aesthetic quality, what anchors everything designers do is that we do it with the end-user in mind. Whereas art, on the other hand, doesn't care much if people observing Edward Hopper in a dimly-lighted museum understand the reflection of urban loneliness in themselves or not.

However, if there's one thing that I learned in design school, it's that though we pay homage to the aesthetic quality, what anchors everything designers do is that we do it with the end-user in mind.

The emergence of design-thinking-focused disciplines such as service design and UX design has shifted the paradigms of many who think this way. Afterall, it requires the incorporation of scientific research into the design process, whilst still not negating the artistic influences in design (especially not when visual design principles are always derived from art).

The style and substance of design errs on a case-to-case basis, and it's entrancing to appreciate it all. I collect graphic design posters and prints, and I also deeply enjoy when a web app is intuitive and caters to my needs. Hence to me, at its core, one unshakable quality that holistic design will always check off is purpose, a thesis statement, if you will. There's not a much more appropriate adage for the modern designer than "The whole is always bigger than the sum of its parts." The idea that



[Open in app](#)[Get started](#)

play.

Just a few months shy of finishing my 3rd semester in design school, I know that there are hard skills I still need to cultivate, principles I always seem to forget to apply, frameworks I find hard to follow. **Yet in the pursuit of being a designer, not just someone who designs stuff, I know that my greater purpose is to nourish myself as a thinker before a maker.** This means, having design be my main concern, but not letting it eclipse my purpose, my care for my users and my other interests. When British writer Iain Sinclair was asked if he did research for his books, he replied that his whole life was research. To spin things into a grander scale, if our whole lives and all of human history is the research that backs one decisive design solution, then the whole world is the end-user which has to benefit from it. Design has to exist for the world beyond it, the world that needs it.

References

Campbell, J. (2013, November 1). *Iain Sinclair: 'I take a walk every morning. It's opening up your system to the world, charging circuits to be able to write'*. The Guardian. <https://www.theguardian.com/books/2013/nov/01/iain-sinclair-interview>

Colclough, A. (2017, December 29). *When Data Visualization Goes Wrong*. Digital Writing & Research Lab. <https://www.dwrl.utexas.edu/2017/12/29/when-data-visualization-goes-wrong/>

Fu, T., Lee, C., Gunnell, D., Lee, W., & Cheng, A. (2013). Changing trends in the prevalence of common mental disorders in Taiwan: a 20-year repeated cross-sectional survey. *The Lancet*, 381(9862), 235–241. doi: 10.1016/s0140-6736(12)61264-1
[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(12\)61264-1/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(12)61264-1/fulltext)

Jacobson, L. (2015, August 17). *Pie chart of 'federal spending' circulating on the Internet is misleading*. Politifact. <https://www.politifact.com/factchecks/2015/aug/17/facebook-posts/pie-chart-federal-spending-circulating-internet-mi/>



[Open in app](#)[Get started](#)

Manzini, E. (2015). *Design When Everybody Designs*. Massachusetts Institute of Technology Press.

This article is a critical reflection essay I did for one of my courseworks.

Sign up for The UX Collective Newsletter

By UX Collective

A weekly, ad-free newsletter that helps designers stay in the know, be productive, and think more critically about their work. [Take a look.](#)



Get this newsletter

