5 Establishing Your Editorial Thinking

It is very easy to introduce every chapter with claims that each of these reached is *the* important stage but you have really now reached a critical juncture. This is the place in the process where you need to start to commit to a definitive pathway.

The data you gathered during Chapter 4 was shaped by your trigger curiosity. You may have found qualities in the data that you feel reveal relevant insights in response to that pursuit. Alternatively, through exploring your data and researching your subject, you may have discovered new enquiries that might actually offer more interesting perspectives.

Ahead of commencing the design and development of your solution you need to decide what you are actually going to do with this data: what are you going to show your audience? This is where editorial thinking becomes important. In my view it is one of the most defining activities that separates the best visualisers from the rest, possibly even more so than technical talent or design flair.

In this this chapter you will learn about what editorial thinking means, the role it plays, what decisions you need to make and how you might do so.

5.1 What is Editorial Thinking?

You will have noticed the common thread of *curiosity* that weaves its way through the preparatory activities of this workflow process. From the opening curiosity that initiated your work, you then effectively sought, gathered and became acquainted with your data in pursuit of some kind of answer. In this third stage, you will need to make some decisions. The essence of editorial thinking is demonstrating a discerning eye for *what* you are going to portray visually to your audience; the matter of *how* follows next. This stage is the critical bridge between your data work and your design work.

In the first chapter I described how a single context can hold several legitimate views of the truth. The glass that is half full of water is also half empty. It is also half full of air. Its water contents might be increasing or decreasing. Depending on your perspective, there are several legitimate ways of portraying this situation. In a nutshell, editorial thinking is about deciding which of the many viable perspectives offered by your data you will decide to focus on.

To translate this to data visualisation, assume you have data that breaks down total organisational spend across many geographic regions over time. Your profiling of your audience has already informed your thinking that the main interest is in how this has changed over time. But at this point, having looked at the data closely, you have found some really interesting patterns in the spatial analysis. What are you going to do? Are you going to show your audience how this spend compares by region on a map, having now established that this might be of interest to them, or are you going to focus on still showing how it has changed over time by region? Perhaps you could show both. Do you need to show all the regions and include all the available time periods or just focus on some specific key moments? You have got to decide what you are going to do because you are about to face the task of picking chart types, deciding on a layout, possible interactivity, and many other presentation matters.

When trying to explain the role of editorial thinking I find it helpful to consider some of the parallels that exists between data visualisation and photography, or perhaps more specifically, photojournalism. By translating into data visualisation some of the decisions involved in taking a photograph, you will find useful perspectives to help shape your editorial thinking. In turn this will have a huge bearing on the design choices that follow. There are three particular perspectives to consider: angle, framing and focus.

'A photo is never an objective reflection, but always an interpretation of reality. I see data visualization as sort of a new photojournalism – a highly editorial activity.' Moritz Stefaner, Truth & Beauty Operator

Angle

Think of a chart as being a photograph of data. As with a photograph, in visualisation you cannot show everything at once. A panoramic 360° view of data is impossible to display at any moment and certainly not through the window of a single chart. You must pick an angle.

'When the data has been explored sufficiently, it is time to sit down and reflect – what were the most interesting insights? What surprised me? What were recurring themes and facts throughout all views on the data? In the end, what do we find most important and most interesting? These are the things that will govern which angles and perspectives we want to emphasise in the subsequent project phases.' Moritz Stefaner, Truth & Beauty Operator

In photography the angle would be formed by the position from where you are standing when taking a shot. In visualisation this relates to the angle of analysis you intend to show: what are you measuring and by which dimension(s) are you breaking it down? Are you going to show how product sales have changed over time, or how sales look organised by regional hierarchically or how they compare on a map and over time? There are many different angles you could choose. You could also choose to show data from multiple different angles using several charts presented together. Your key consideration in determining each angle is whether it is relevant and sufficient.

'It requires the discipline to do your homework, the ability to quiet down your brain and be honest about what is interesting.' Sarah Slobin, Visual Journalist

Relevant: Why is it worth providing a view of your data from *this* angle and not another one? Why is *this* angle of analysis likely to offer the most relevant and compelling window into the subject for your intended audience? Is it still relevant in light of the context of the origin curiosity – that is, have definitions evolved since familiarising yourself with the data, learning about its potential qualities as well as researching the subject at large?

The judgement of relevance would be similar to the notion of newsworthiness in journalism. In that context, terms like timeliness, proximity, novelty, human interest and current prominence are all ingredients that shape what ultimately becomes news content. The ecosystem in which your work is consumed is likely to be much narrower in size and diversity than it is for a newspaper, for example. Issues of human interest and novelty will seldom have a bearing on your judgement of relevance. Therefore, I believe it is realistic to reduce the list of factors that shape your thinking about relevance to three:

- What does your intended *audience* want or need to know? The various characteristics of your audience's profile, matters discussed in Chapter 1 (accessible design) and Chapter 3 (contextual circumstances), should provide a good sense of this. Sometimes, you can simply ask the members of your intended audience: you might know who they are personally or at least be able to gather information about their needs. On other occasions, with a larger audience, you might need to consider creating personas: a small number of imagined identities that may be demographically representative of the types of viewer you expect to target. Ask yourself, if you were them, what would you want to know?

- What makes something relevant in your context? Part of your judgement will be to consider whether relevance is a product of the normal or the exceptional; often the worthiness of an item of news is based on it being exceptional rather than going through the repeated reporting of normality. Reciting the famous journalistic aphorism, you need to determine if you are reporting news of 'dog bites man!' or 'man bites dog!'. A lack of relevance is a curse that strikes a lot of visualisation work. What you often see is evidence of data that has been worked up into a visual output just because it is available and just because visual things are appealing. There is almost a scattergun approach in hoping that someone, somewhere will find a connection to justify it as relevant.

- What do *you* want your audience to know? You might have the control to decide. Although you respect the possible expressed needs of your audience you might actually be better placed to determine what is truly relevant. Depending on the context, and your proximity to the subject and its data, you might have the autonomy to dictate on what it is you want to say, more so than what you think the audience want to see. Indeed, that audience may not yet know or be sufficiently domain aware to determine for itself what is relevant or otherwise.

Sufficient: This is about judging *how many* angles you need. If a chart (generally) offers a single angle into your data, is that sufficiently representative of what you wish to portray? As I said earlier, you cannot show everything in one chart. Maybe you need multiple charts offering a blend of different angles of analysis to sufficiently represent the most interesting dimensions of the subject matter. Perhaps showing a view of your data over time needs to be supplemented by a spatial view to provide the context for any interpretations.

It is easy to find yourself being reluctant to commit to just a singular choice of angle. Even in a small dataset, there are typically multiple possible angles of analysis you could conduct. It is often hard to ignore the temptation of wanting to include multiple angles to serve more people's interests.

It is important not to fall into the trap of thinking that if you throw more and more additional angles of analysis into your work you will automatically enrich that work. Just because you have 100 photographs of your holiday, that does not mean you should show me them all. When I reflect on some of the work I have created down the years, I wish I had demonstrated better selection discipline – a greater conviction to exclude angles – to avoid additional content creeping in just because it was available. I often found it far too easy to see everything as being potentially interesting. And I still do (it's the curse of the analyst). The real art is to find just enough of those angles that respond to the core essence of your – or your inherited – curiosity.

'I think this is something I've learned from experience rather than advice that was passed on. Less can often be more. In other words, don't get carried away and try to tell the reader everything there is to know on a subject. Know what it is that you want to show the reader and don't stray from that. I often find myself asking others "do we need to show this?" or "is this really necessary?" Let's take it out.' Simon Scarr, Deputy Head of Graphics, ThomsonReuters

Framing

The next perspective to define about your editorial thinking contributes to the refinement of the angles you have selected. This concerns framing decisions. In photographic parlance this relates to choices about the field of view: what will be included inside the frame of the photograph and what will be left out?

Just like a photographer, a visualiser must demonstrate careful judgement about what to show, what not to show, and how to show it. This is effectively a filtering decision concerned with which data to include and exclude:

- All category values, or just a select few?
- All quantitative values or just those over a certain threshold?
- All data or just those between a defined start and end date period?

Naturally, the type and extent of the framing you might need to apply will be influenced by the nature of your trigger curiosity, as well as factors like the complexity of the subject matter and the amount of data available to show. Further considerations like the setting (need rapid insights or OK for deeper, more prolonged engagement?) and output format will also have a bearing on this matter.

One of the key motives of framing is to remove unnecessary clutter – there is only so much that can be accommodated in a single view before it becomes too busy, too detailed, and too small in resolution. There is only so much content your audience will likely be willing and able to process. Inevitably, a balance must be struck to find the most representative view of your content. If you zoom in, filtering away too much of the content, it might hide the important context required for perceiving values. Conversely, if you avoid filtering your content you may fail to make visible the most salient discoveries.

Focus

The third component of editorial thinking concerns what you might choose to focus on. This is not a function of filtering – that is the concern of framing – it is about emphasising what is more important in contrast to what is less important.

The best photographs are able to balance light and colour, not just setting the mood of a situation but illuminating key elements within the frame that help to create depth. They provide a sense of visual hierarchy through their depth as well as the sizing and arrangement of each form.

What needs to be brought into view in the foreground, left in the mid-ground, and maybe relegated to the background simply for context or orientation? What needs to be bigger and more prominent and what can be less so?

Whereas framing judgements were about reducing clutter, this is about reducing noise. If everything in a visualisation is shouting, nothing is heard; if everything is in the foreground, nothing stands out; if everything is large, nothing is dominant.

Decisions about focus primarily concern the development of explanatory visualisations, because creating such a focus – surfacing insights through the astute use of colour or annotated accentuation – is a key purpose for that type of experience. Beyond colour, focus can be achieved through composition choices such as the way

elements are more prominently sized and located or the way contents are positioned within a view.

5.2 The Influence of Editorial Thinking

It is important to ground this discussion by explaining practically how these editorial perspectives will apply to your workflow process and, in particular, influence your design thinking.
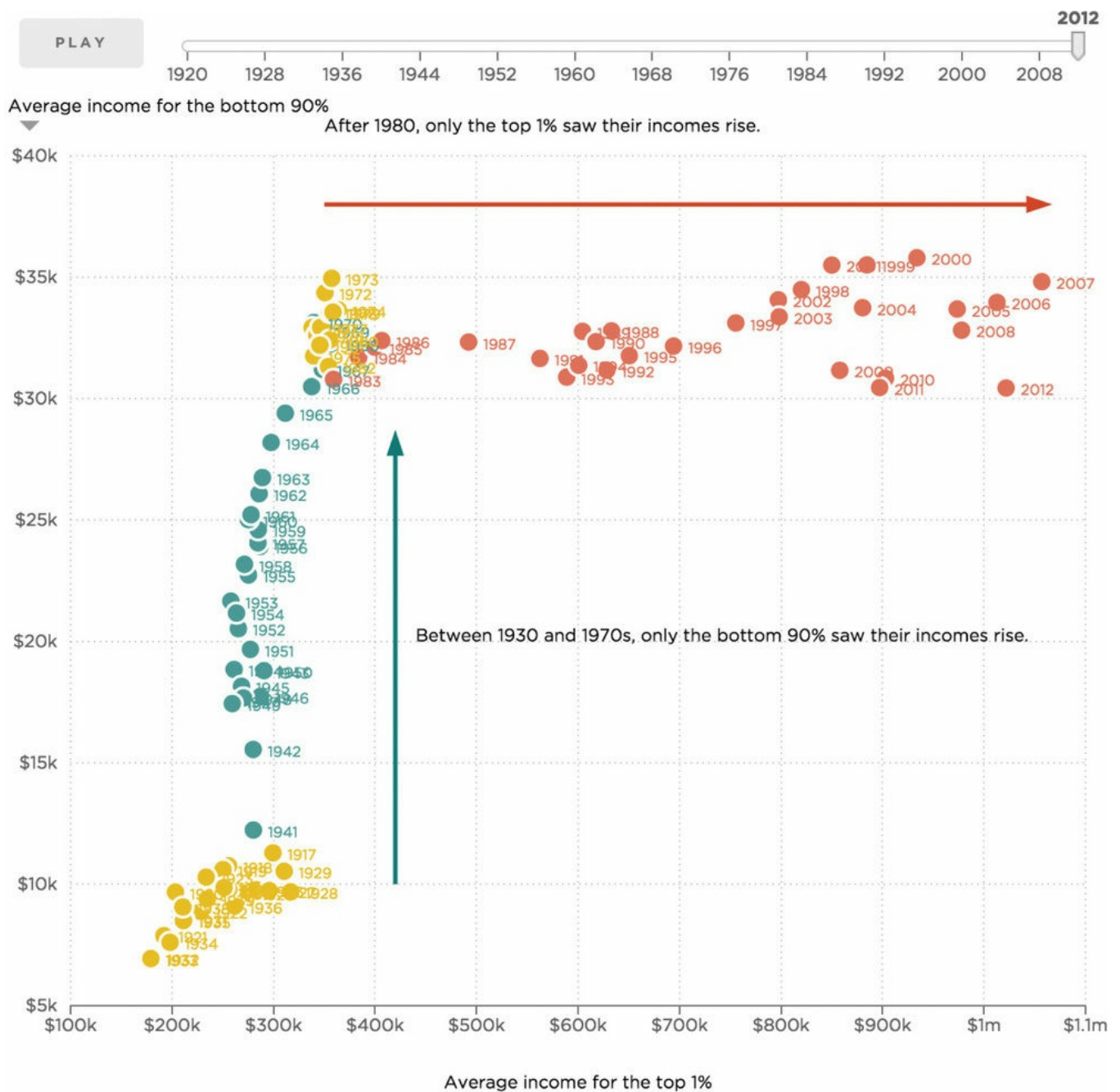
I described a chart as being like a photograph of the data, displaying a visual answer to a data-driven curiosity. Determining the choice of chart (technically, 'data representation') is just one part of the overall anatomy of a data visualisation. There are choices to be made about four other design layers, namely features of interactivity, annotation, colour and composition.

Your decisions across this visualisation design anatomy are influenced, in a large way, by the editorial definitions you have will make about angle, framing and focus. They might not lead directly or solely to the final choices – there are many other factors to consider, as you have seen – but they will signpost the type of editorial qualities the visualisation will need to accommodate. Let's look at two illustrations of the connection between editorial and design thinking to explain this.

Example 1: The Fall and Rise of us Inequality

The first example ([Figure 5.1](#)) is a chart taken from an article published in the 'Planet Money: The Economy Explained' section of the US-based National Public Radio (NPR) website. The article is titled 'The Fall and Rise of U.S. Inequality in 2 Graphs'. As the title suggests the full article includes two charts, but I just want to focus on the second one for the purpose of this illustration.

Figure 5.1 The Fall and Rise of U.S. Inequality, in Two Graphs

PLAY

1920   1928   1936   1944   1952   1960   1968   1976   1984   1992   2000   2008

Average income for the bottom 90%

After 1980, only the top 1% saw their incomes rise.

$40k

$35k — 1973 1972 1984 1970 1986 1985 1984 1987 1988 1990 1996 1997 2002 2003 1998 2004 2005 2006 2000 1999 2007

$30k — 1966 1983 1981 1993 1994 1992 1995 2009 2010 2011 2012

$30k

1965

1964

1963
1962

$25k — 1961 1960 1959 1956 1958 1955

1953
1954
1952

$20k — 1951 Between 1930 and 1970s, only the bottom 90% saw their incomes rise.

1950 1945 1946 1949

1942

$15k

1941

1917
1918 1929
$10k — 1928 1936

1935
1921
1934
1933

$5k
$100k $200k $300k $400k $500k $600k $700k $800k $900k $1m $1.1m

Average income for the top 1%

Notes

Income is inflation adjusted in 2012 dollars.

Source: World Top Incomes Database
Credit: Quoctrung Bui/NPR

Editorial Perspectives

Let's assess the editorial perspectives of angle, framing and focus as demonstrated by this work.

Angle: The main angle of analysis can be expressed as: 'What is the relationship between two quantitative measures (average income for the bottom 90% and for the top 1% of earners) and how has this changed over time (year)?'. This angle would be considered relevant because the relationship between the *haves* and the *have-nots* is a key indicator of wealth distribution. It is a topical and suitable choice of analysis to include with any discussion about inequality in the USA. As I mentioned there is a second chart presented so it would be reasonable to say that the two sufficiently cover the necessary angles to support the article.

Framing: The parameters that define the inclusion and exclusion of data in the displayed analysis

involve filters for time period (1917 to 2012) and country (just for the USA). The starting point of the data commencing from 1917 may reflect a simple arbitrary cut-off point or a significant milestone in the narrative. More likely, it probably represents the earliest available data. One always has a basic desire to always want every chart to include the most up-to-date view of data. While it only reaches as far forward in time as 2012 (despite publication in 2015) the analysis is of such historical depth that it should be considered suitably representative of the subject matter. To just focus on the USA is entirely understandable.

Focus: The visualisation includes a 'time slider' control that allows users to move the focus incrementally through each year, colouring each consecutive yearly marker for emphasis. The colours are organised into three classifications to draw particular attention to two main periods of noticeably different relationships between the two quantitative measures.

Influence on Design Choices

How do these identified editorial perspectives translate directly into design thinking? As you will learn in Chapters 6–10 any visualisation comprises five layers of design. Let's have a look at how they might be influenced by editorial thinking.

Data representation: The *angle* is what fundamentally shapes the data representation approach. In lay terms, it determines which chart type is used. In this example, the defined angle is to show the relationship between two quantitative measures over time (average income for bottom 90% vs. top 1% of earners). A suitable chart type to portray this visually is the scatter plot (as selected). As you will learn in the next chapter, the scatter plot belongs to the 'relational' family of chart types. Given there was also a dimension of time expressed in this angle, a chart type from the 'temporal' family of charts *could* have been used but with the main emphasis being on showing the relationships the scatter plot was the better choice. The *framing* perspective defines what data will be included in the chosen chart: only data for the USA and the time period 1917–2012 is displayed.

Interactivity: As you will discover in Chapter 7, the role of interactivity is to enable adjustments to *what* data is displayed and *how* it is displayed. The sole feature of interactivity in this project is offered through the 'time slider' control, which sequences the unveiling of the data points year by year in either a manual or automated fashion. The inclusion of such interactivity can be influenced by the editorial decisions concerning *focus*: unveiling the yearly values sequences the emphasis on the position – and emerging pattern – of each consecutive value.

Annotation: The primary chart annotations on show here are the two arrows and associated captions, drawing attention to the two prominent patterns that support the general fall and then rise of inequality. Again, the inclusion of the captions would be a consequence of editorial thinking (*focus*) determining these respective patterns in the data should be emphasised to the viewer.

Colour: As you will learn about in Chapter 9, one of the key applications of colour is to support editorial salience – how to emphasise content and direct the eye. As before, editorial *focus* would influence the decision to deploy four colour states within the chart: a default colour to show all points at the start of the animation and then three different emerging colours to separate the three clustered groups visually. Note that the final colour choices of red, green and orange tones are not directly informed by editorial thinking, as the identified value of using four different ones to draw out the focus is what drives this choice.

Composition: This concerns all of the physical layout, shape and size decisions. In this example, the dimensions of editorial thinking have had limited influence over the composition choices. Although,

recognising again that there are two charts in the full article, the focus perspective would have likely informed the decision to sequence the ordering of the charts: what made better sense to go first or last and why?
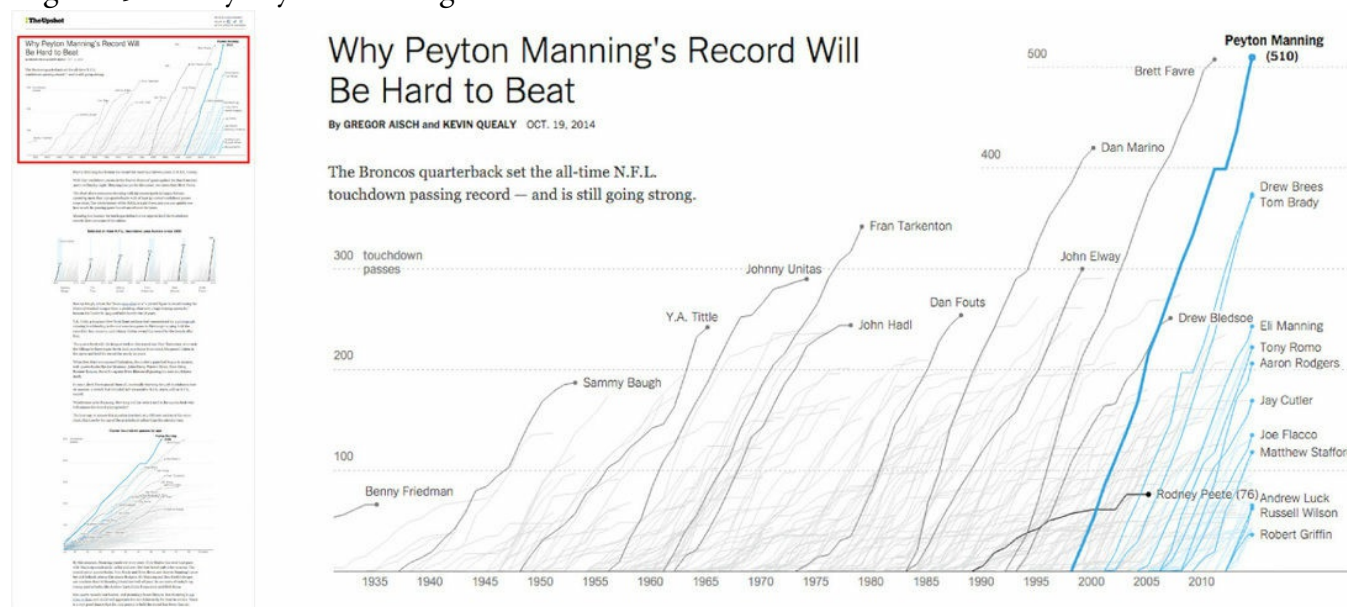
Example 2: Why Peyton Manning's Record Will Be Hard to Beat

In this second example, published on 'TheUpshot' section of the *New York Times* website, there are three charts presented in an article titled 'Why Peyton Manning's Record Will Be Hard to Beat'. Here I will look at all three charts.

Editorial Perspectives

Again, let's assess the editorial perspectives of angle, framing and focus as demonstrated by this work.

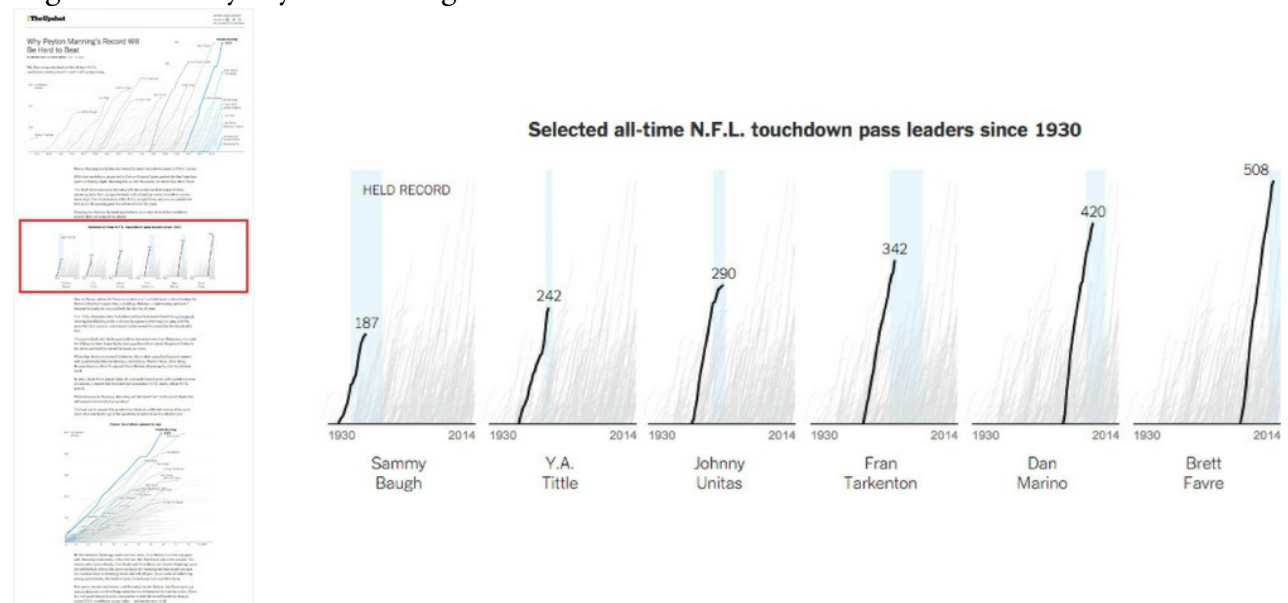Figure 5.2 Why Peyton Manning's Record Will Be Hard to Beat

Angle: The first chart ([Figure 5.2](#)) displays the angle of analysis expressed as 'How have quantitative values (NFL touchdown passes) broken down by category (quarterbacks) changed over time (year)?'. This analysis was relevant at the time due to the significance of Peyton Manning setting a new record for NFL quarterback touchdown passes, an historic moment and, according to the article, 'evidence of how much the passing game has advanced through the history of the game'. Inspired by this achievement, the question posed by this article overall is whether the record will ever be bettered – which would have likely been the origin curiosity that drove the visualisation project in the first place. The article was time relevant because the record had just been achieved. On its own, this analysis would be deemed insufficient to support the overarching enquiry, as evidenced by the inclusion of two further charts that we will look at shortly.

Framing: The parameters that define the inclusion and exclusion framing relate to the time period (1930 to 19 October 2014) and qualifying quantitative threshold (minimum of 30 touchdown passes). It is representative of the truth at the moment of production (i.e. up to 19 October 2014) though clearly the data would no longer be up to date as soon as the next round of games took place. The judgment of the 30 touchdown passes threshold would either be informed by knowledge of the sport

(and 30 TDs being a common measure) or more likely influenced by the shape of the data for every quarterback, indicating that it was a logical cut-off value.

Focus: The chart emphasises the record holder as well as the other current players in order to orientate the significance of the achievement and to highlight other contemporary players who *could* have a chance of pursuing this record. It also emphasises previous record holders or noted players to show just how special the new record is. If you want to know the achievements of any other player, their career 'lines' and values come into focus through mouseover-driven interactivity.

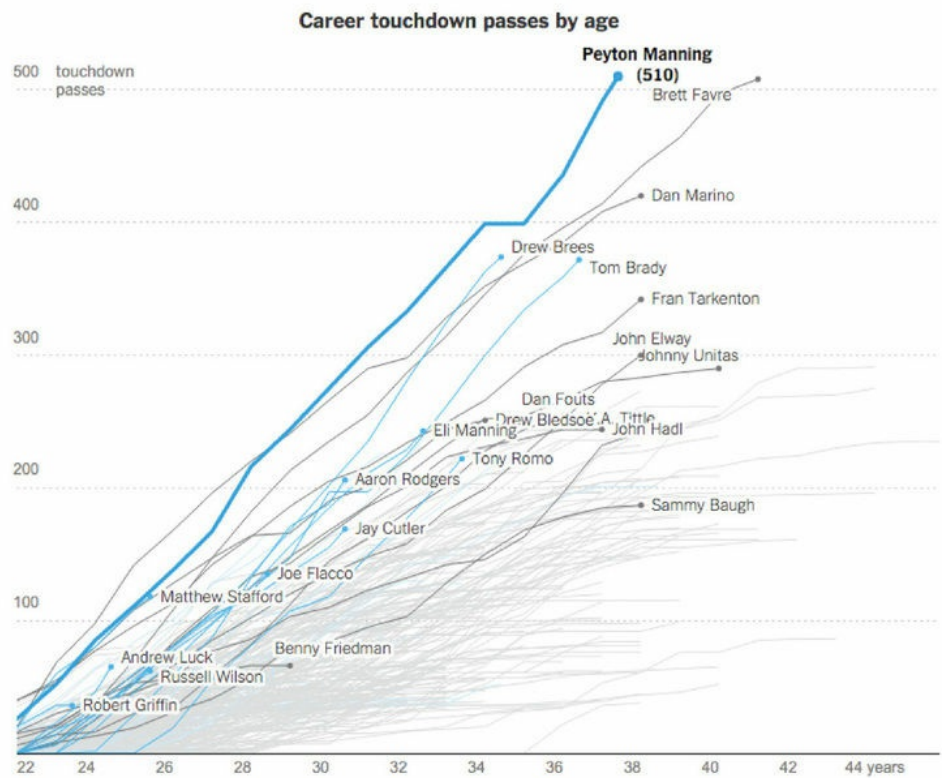Figure 5.3 Why Peyton Manning's Record Will Be Hard to Beat

In the second chart ([Figure 5.3]), the same definitions stand for the *angle* and *framing*, but the *focus* has changed. This chart shows the same angle of analysis as seen in the first chart but is now composed of several small repeated charts, each one focusing on the career trajectories of a selected previous record holder.

Focus: Colour is used to emphasise the previous record-holding players' career lines with an illuminating background banding used to display the duration/era of their record standing. Value labels show the number of touchdowns achieved.

The final chart ([Figure 5.4]) has many similarities with the first chart. Once again it maintains the same consistent definition for *framing* and it has the same *focus* as the first chart but now there is a subtle difference in *angle*.

Angle: This is now expressed as: 'How have cumulative quantitative values (NFL touchdown passes) broken down by category (quarterbacks) changed over time (age)?'. The difference is the time measure being about age, not year. This is relevant as it provides an alternative view of the time measure, switching year for age to continue pursuing the curiosity over how long Manning's record might last. More specifically it enquires if 'the quarterback who will surpass Manning's record is playing today?'. Incidentally, as the article concludes, it is going to be a very difficult record to beat.

Figure 5.4 Why Peyton Manning's Record Will Be Hard to Beat

Influence on Design Choices

Now, let's switch the viewpoint again and look at how this visualisation's design choices are directly informed by the editorial thinking.

> Data representation: As I have stated, the *angle* and *framing* dimensions are hugely influential in the reasoning of chart type requirements. In each of the charts used we are being shown different perspectives around the central theme of how touchdown passes have changed over time for each qualifying quarterback. A line chart showing cumulative values for all the players was the most appropriate way of portraying this. Naturally, the line chart belongs to the 'temporal' family of chart types. Alternative angles of analysis may have explored the relationship angle between the measures of age and total touchdown passes. A scatter plot would have been ideal to display that angle, but the inclusion of the cumulative touchdown passes statistic, as portrayed using the line, made for a much more striking display of the trajectories.
>
> Interactivity: The only feature of interaction determined necessary here is achieved through a mouseover event in the first and third charts to reveal the names and total passes for any of the players who are presented as grey lines. This serves the interests of viewers who want to identify these background data values for 'everyone else'. By introducing value labels only through interactivity it also means the busy-ness of labelling all values by default could be elegantly – and wisely – avoided.
>
> Annotation: This interactive labelling is a joint decision concerned with annotation. Elsewhere, the decision to include permanent annotated labels in each chart for category (player) and value (touchdown passes) provides emphasis in the first and third charts on the career achievements of Peyton Manning, the other current quarterbacks, and previous record holders. The second chart only labels the respective record holders who are the subject of each separate display.
>
> Colour: The approach to creating focus is further achieved with colour. In the main chart, emphasis is again drawn to Peyton Manning's line, as the record holder (thick blue line), other current players (highlighted with a blue line) as well as previous record holders or noted players (dark grey line). For the

second chart the light-blue coloured banding draws out the period of the records held by selected players down the years. This really helps the viewer to perceive the duration of their records.

Composition: The further influence of the editorial decisions for *focus* would be seen through the sequencing of the charts in the article. Given the rigid dimensions of space in which the article exists, the decision to order the charts in the way they are presented will have been informed by the desired narrative that was required to present analysis to support the articulated statement in the title.

A closing point to make here is that the influence of editorial thinking does not just flow forwards into the design stages. Although presented as separate, consecutive stages, 'working with data' and 'editorial thinking' are strongly related and quite iterative: working with data influences your editorial perspectives; and your editorial perspectives in turn may influence activities around working with data. In the earlier stages of your development it is useful to create this sequential distinction in activities but in reality there will be much toing and froing. The data transformation activity, in particular, is essentially the key wormhole that links these two stages. Editorial definitions may trigger the need for more data to be gathered about the specific subject matter or some consolidation in detail to support the desired angles of analysis and the framing dimensions. The acquisition of new data will always then trigger a need to repeat the data examination activity. Editorial definitions might also influence the need for further calculations, groupings or general modifications to refine its preparedness for displaying the analysis.

Summary: Establishing Your Editorial Thinking

In this chapter you learnt about the three perspectives that underpin your editorial thinking.

Angle

- Must be relevant in its potential interest for your audience.
- Must have sufficient quantities to cover all relevant views – but no more than required.

Framing

- Applying filters to your data to determine the inclusion and exclusion criteria.
- Framing decisions must provide access to the most salient content but also avoid any distorting of the view of the data.
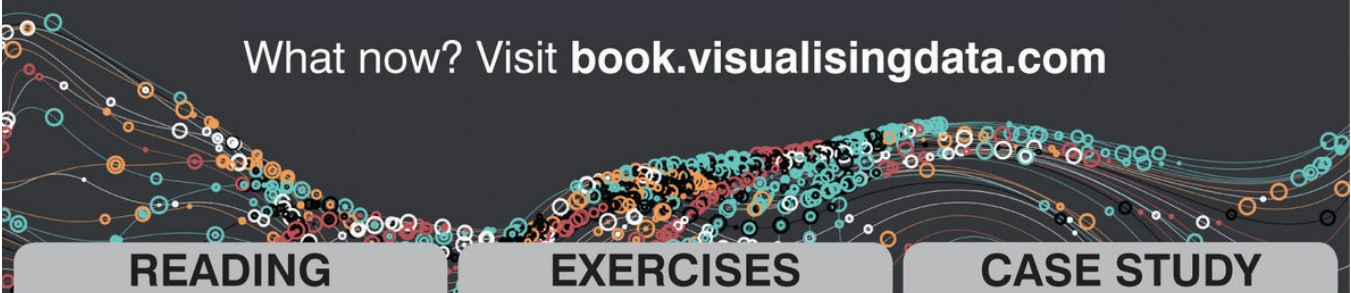
Focus

- Which features of the display to draw particular attention to?
- How to organise the visibility and hierarchy of the content?

Tips and Tactics

- Data shapes the story, not the other way round: maintain this discipline throughout your work.
- If your data was especially riddled with gaps, perhaps consider making *this* the story: inverting attention towards the potential consequence, cause and meaning behind these gaps?
- There is *always* something interesting in your data: you just might not be equipped with sufficient domain knowledge to know this or it may not be currently relevant. Get to know the difference between relevant and irrelevant by researching and learning more about your subject.

- Communication: ask people better placed than you, who might have the subject knowledge, about what is truly interesting and relevant.
- A good title will often express the main curiosity or angle of analysis from the outset, giving viewers a clear idea about what the visualisation that follows will aim to answer or reveal.

What now? Visit **book.visualisingdata.com**

READING

Visit the chapter's library of further reading and references to continue your learning about editorial thinking

EXERCISES

Undertake these practical exercises to help refine your skill and understanding about editorial thinking

CASE STUDY

Work through the next instalment of the Filmographics case-study narrative, discussing the editorial perspectives that were established