The three colours you cannot spend twice

Green, amber and red mean normal, moderate and severe to this audience before they read a legend. A chart that spends them on three districts has taught the reader to stop reading them as a measurement, and no legend buys that back.

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Lesson 3 of 8

Data Visualisation for Programmes — Conventions your reader already has

What this lesson covers

- Colour that already means something
- What repurposing costs
- Colour as encoding, and what it can carry
- Colour is the weakest channel; use position first
- Nine ways sector charts get colour wrong
- Report it whole
- What comes next

Colour that already means something

Palette	Means	Where it comes from
Green / yellow / red	Normal, moderate, severe	MUAC tape banding, triage
IPC phases 1–5	Minimal, stressed, crisis, emergency, catastrophe	IPC colour standard, fixed
JMP ladder	Safely managed → surface water	WHO/UNICEF joint monitoring
Blue	Water	WASH cluster convention

Colour that already means something

- The IPC palette is not a suggestion — Phase 3 is a specific orange and a map that uses a different one for Phase 3 will. . .
- The MUAC banding is why the signal palette is reserved on this platform — Green, amber and red are. . .

What repurposing costs — In Python

```
# Three districts, three signal colours. Nothing here is a severity.
COLOURS = {"Nord-Ouest": "#2f8f5b", "Centre": "#d9a02b", "Sud-Est": "#c0442f"}
```

What repurposing costs — In R

```
# A palette chosen because it is on the brand board, not because it means this.
```

What repurposing costs

- A reader who sees red on Sud-Est reads "severe" before they read the axis — If Sud-Est happens to be the worst district...
- The cost is cumulative and it lands on the next chart — Once a reader has seen the signal band used decoratively, they...
- So the rule is not aesthetic — Reserve the signal band for severity, quality flags and indicator status

What repurposing costs — In Python

```
INK, SPRUCE, SLATE = "#16211E", "#2F5D50", "#5A6B66"
ax.barh(labels, values, color=[SPRUCE if e else SLATE for e in emphasis])
```

What repurposing costs — In R

```
scale_fill_manual(values = c("TRUE" = "#2F5D50", "FALSE" = "#5A6B66"))
```

What repurposing costs

- Two colours is usually the whole palette a programme chart needs — one for the series, one for the thing you are. . .

Colour as encoding, and what it can carry

- Categorical — Distinct hues, at most about six before a reader stops distinguishing them
- Sequential — One hue, light to dark, for an ordered quantity
- Diverging — Two hues from a meaningful midpoint — change from baseline, above and below a target

Colour as encoding, and what it can carry — In Python

```
import matplotlib.pyplot as plt

fig, ax = plt.subplots()
ax.barh(districts, change, color=["#c0442f" if c < 0 else "#2f8f5b" for c in change])
ax.axvline(0, color="#16211E", linewidth=1)     # the midpoint, drawn
```

Colour as encoding, and what it can carry — In R

```
# If the midpoint is not drawn, the reader guesses where it is.
```

Colour as encoding, and what it can carry

- Here the signal colours are legitimate — because the encoding *is* a state: worse or better than the previous round,...

Colour is the weakest channel; use position first

Rank	Encoding	Use for
1	Position on a common scale	The main comparison
2	Length	Bars
3	Angle, slope	Lines over time
4	Area	Rarely; a bubble is read as its radius
5	**Colour intensity**	An additional dimension, never the main one
6	Colour hue	Category labels

Colour is the weakest channel; use position first

- If the finding is only visible in the colour, the chart has encoded it in the weakest available channel — A choropleth...
- Redundant encoding is not redundant — Marking the emphasised bars by colour *and* by a caption that names them means...

Nine ways sector charts get colour wrong

Mistake	Fix
Signal colours on non-severity categories	Neutral palette
A rainbow scale for an ordered quantity	Single-hue sequential
IPC-like oranges that are not IPC values	Use the published values, or do not imply phases
Red for "female", blue for "male"	Neutral pair; sex is not a severity
Diverging scale centred on the data mean	Centre on a real midpoint, and draw it
A legend for two categories	Label them directly on the chart
Colour carrying the finding	Move the finding to position or length
More than six categorical hues	Small multiples

. . .

Nine ways sector charts get colour wrong

- The last one is the most common in this sector — because a two-line chart looks finished

Report it whole — Example

Figure conventions used in this report

Charts use a neutral two-colour palette: one tone for the series, a darker tone for values the caption calls out.

Green, amber and red are reserved for severity and data-quality status -- MUAC banding, indicator status, completeness flags -- and are not used for geographic or demographic categories anywhere in this report.

IPC phase maps use the published IPC colour values without modification.

Where a chart uses a diverging scale, the midpoint is a stated reference (the previous round, or the national target) and is drawn on the chart.

Report it whole

- Four lines in the methods annex, and they answer the question a reviewer asks about every map in the pack — A report…

What comes next

- Colour intensity is the weakest encoding, and a choropleth puts the entire finding into it.

Read the full lesson, with runnable code

https://data-analysis.cassion.dev/courses/data-visualisation/viz-03-the-palette-you-must-not-repurpose