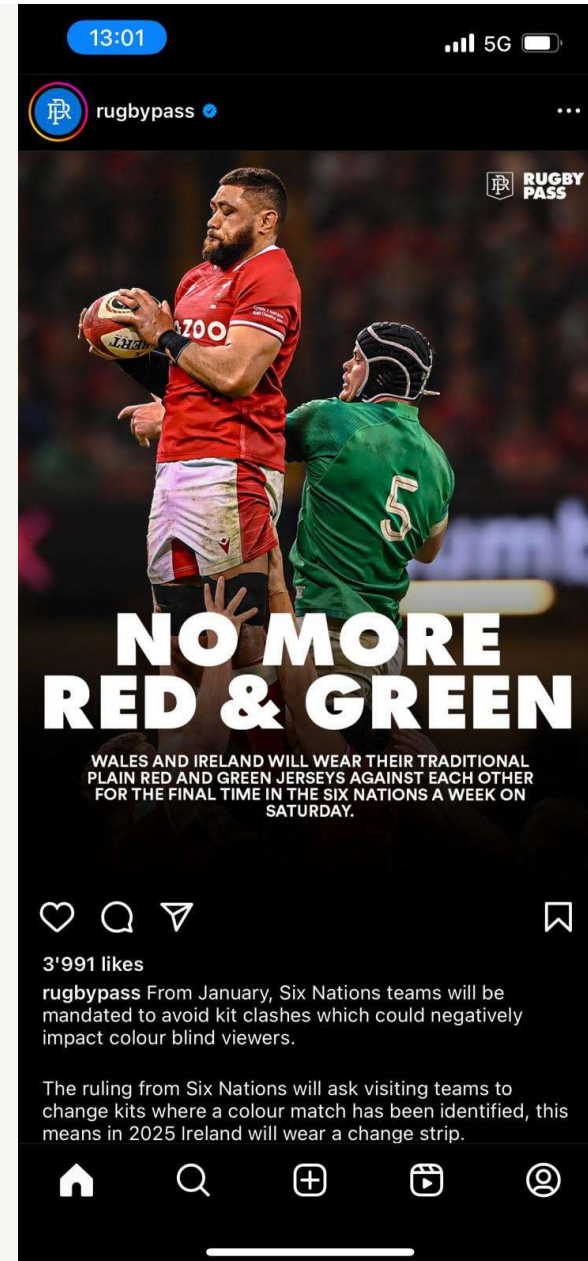


(Digital) Accessibility

Ursula Becker



Font size & contrast are crucial to readability

Evidence				Size 6
Evidence				Size 8
Evidence				Size 10
Evidence				Size 12
Evidence				Size 14
Evidence				Size 24

PSI Presentation Design (recommendations)

- Use high contrast colors; light text on dark background or vice versa.
- Minimum font size = 24.
- Maximum 8 lines per slide, and 8 words per line. Use of suitable pictures/images/diagrams rather than lots of bullet pointed text is recommended.
-

What is Digital Accessibility?



information can be **reached**, **used** and **understood** by everyone & everywhere

- all users
- at different stages of their life

Existing & Future Employees

Customers

Patients

Investors

Suppliers

Impact of digital accessibility

"The power of the Web is in its universality. Access by everyone regardless of disability is an essential aspect."

Tim Berners-Lee (the inventor of the web) also heads up the W3C

Social

Technical

Financial

Legal

Types of Access Challenges ...



Visual

(e.g., blindness, low vision, color blindness)



Auditory

(e.g., deaf and hard of hearing)



Motor

(e.g., limited motor control, slow response time)



Cognitive

(e.g., inability in memory, attention/focus, text processing)

... and solutions



Visual



Auditory



Motor



Cognitive

Make it ...

... easy to see

... easy to hear

... easy to interact with

... easy to understand

Who can benefit?

It benefits everyone, not only people with disabilities

- people not fluent in English
- older people
- people with “temporary disabilities” (e.g., accident)
- people with “situational limitations” (e.g., an environment where they cannot listen to audio)
- slow internet connection/ legacy browsers



■ people not fluent in English

■ older people

■ people with “temporary disabilities” (e.g., accident)

■ people with “situational limitations” (e.g., an environment where they cannot listen to audio)

■ slow internet connection/ legacy browsers



Good accessibility is good usability

Usability

Accessibility can be seen as a sub-case or overlapping concept of usability, which aims to improve a product or service's ease of use and user experience.

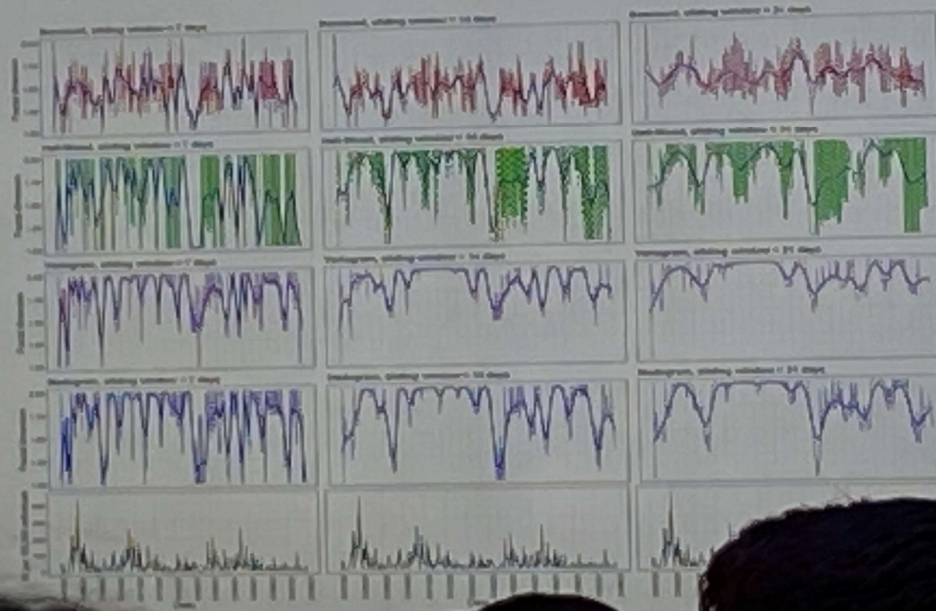
SEO / Findability

the goals of web accessibility and SEO are aligned





Vlaamse Controletoeren: Fractal dimension



Examples for good digital accessibility

Contrast between Foreground & Background

Insufficient

Some people cannot read text if there is not sufficient contrast between the text and background. For others, bright colors (high luminance) are not readable; they need low luminance.

Sufficient

Some people cannot read text if there is not sufficient contrast between the text and background. For others, bright colors (high luminance) are not readable; they need low luminance.

Do not use colour alone to convey information

Colour only

Required fields are in red

Name

Email

Do not use colour alone to convey information

Colour only

Required fields are in red

Name

Email

Colour and symbol

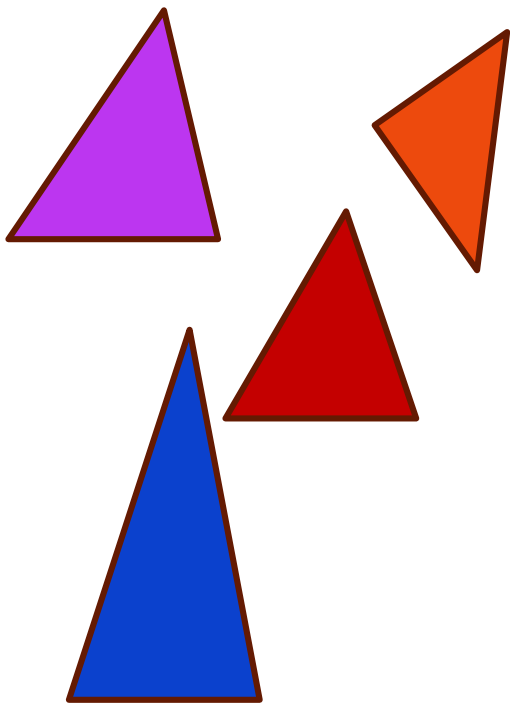
Required fields are in red
AND marked with an asterix

Name

Email*

Do not use colour alone to convey information

Colour only

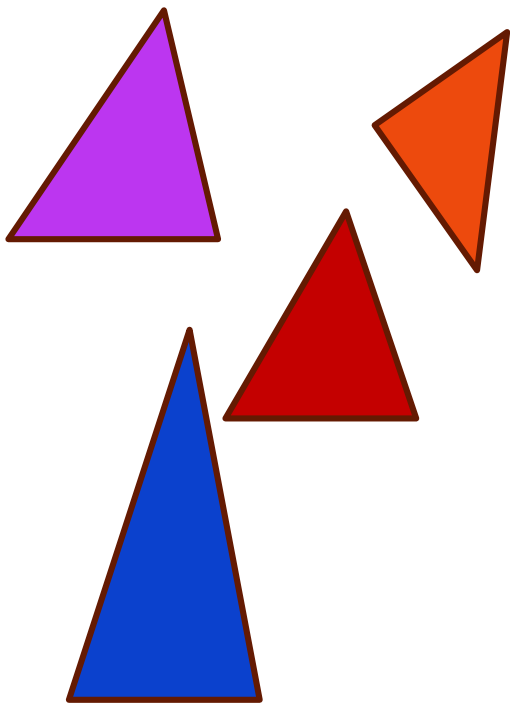


Where is the
90° angle?

- Purple
- Orange
- Red
- Blue
- Don't know

Do not use colour alone to convey information

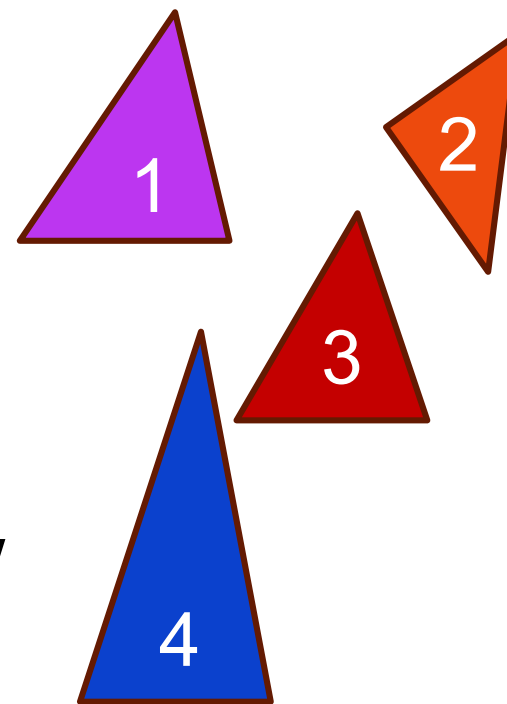
Colour only



Where is the 90° angle?

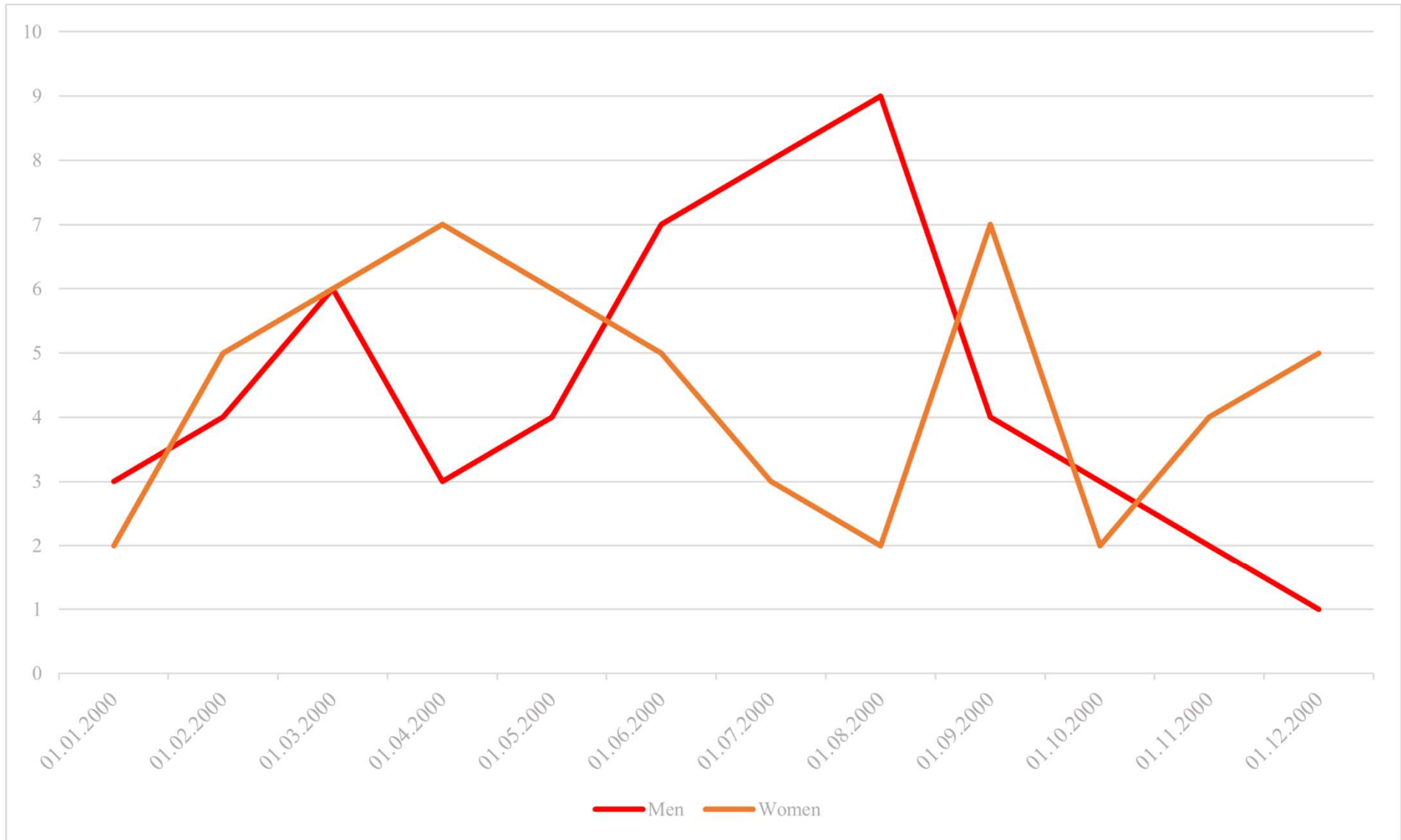
- Purple
- Orange
- Red
- Blue
- Don't know

Colour and number



Where is the 90° angle?

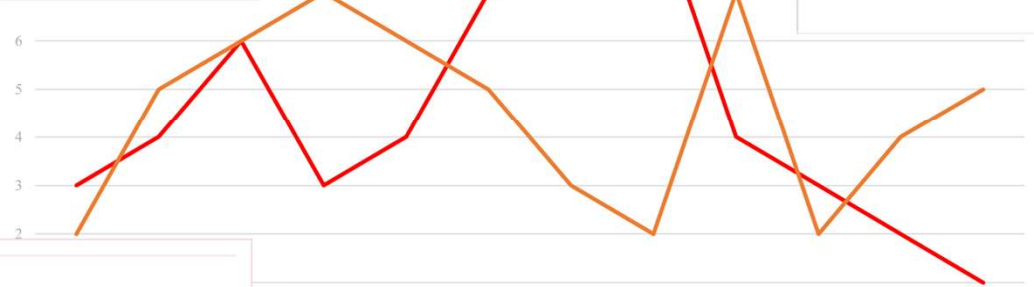
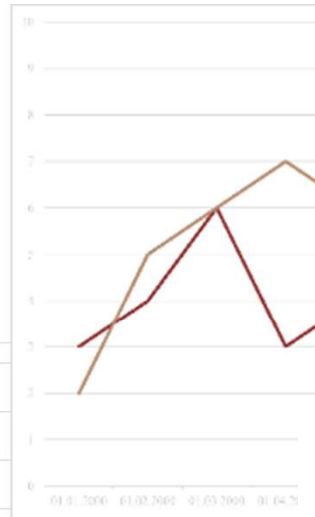
1. Purple
2. Orange
3. Red
4. Blue
5. Don't know



Blue-Blind / Tritanopia

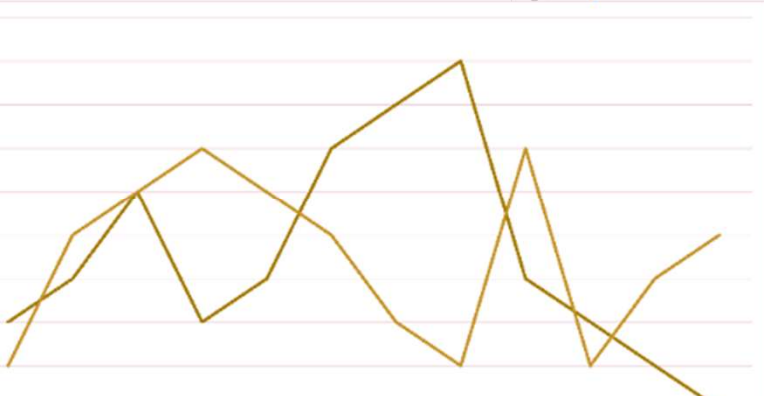


Blue Cone Monochromacy

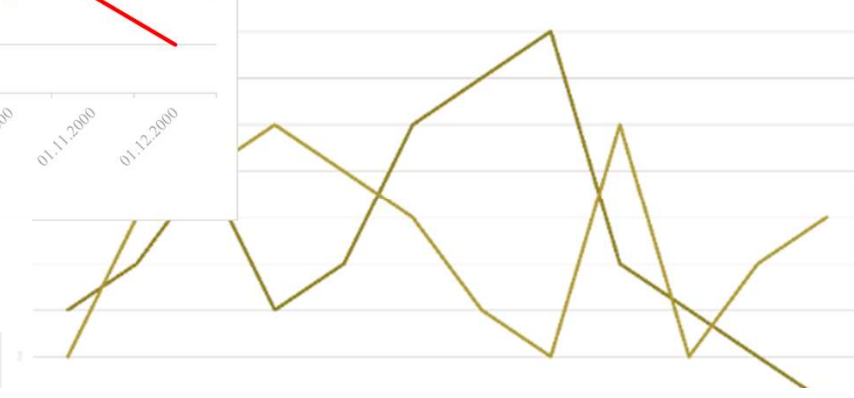


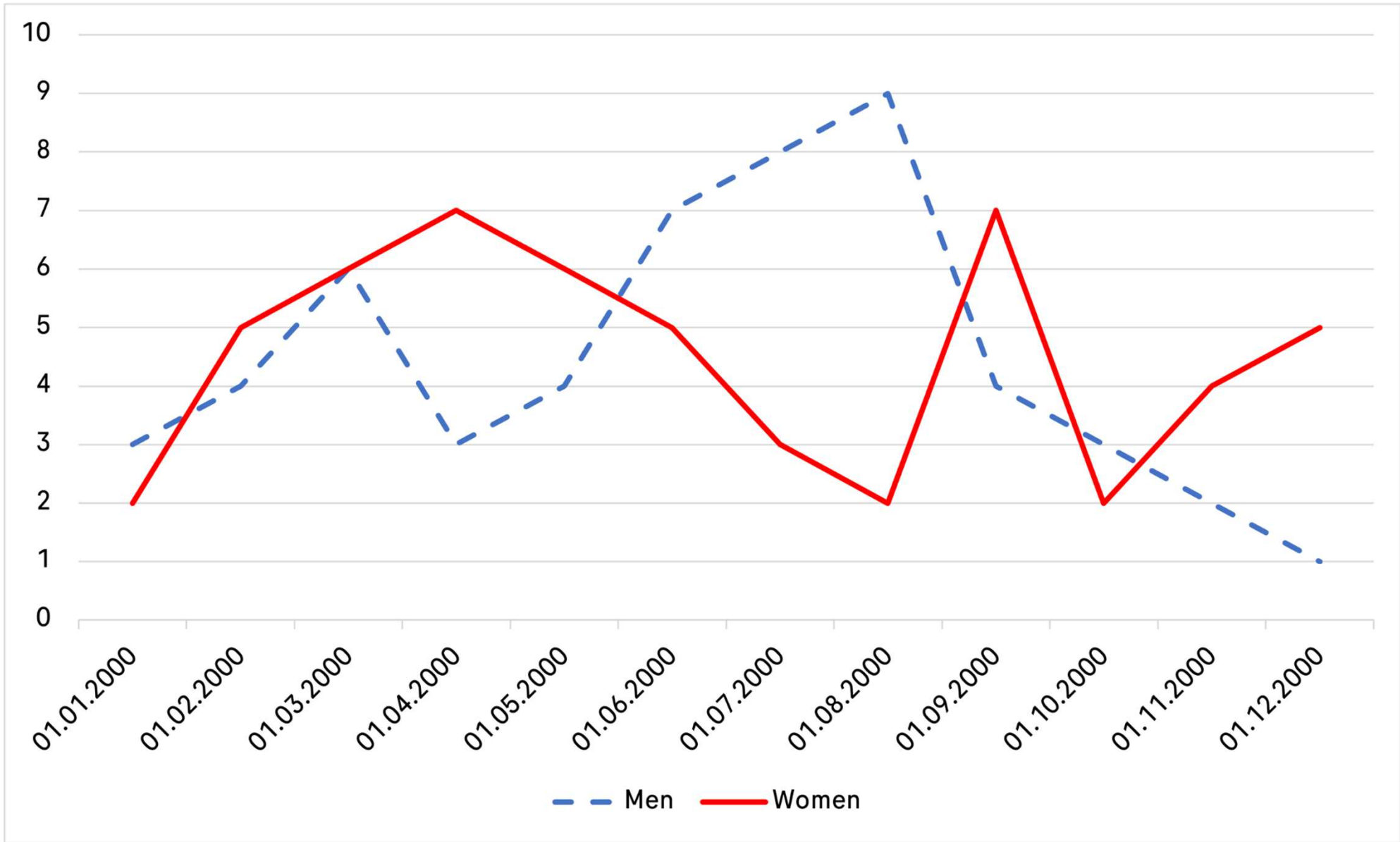
Bad graph

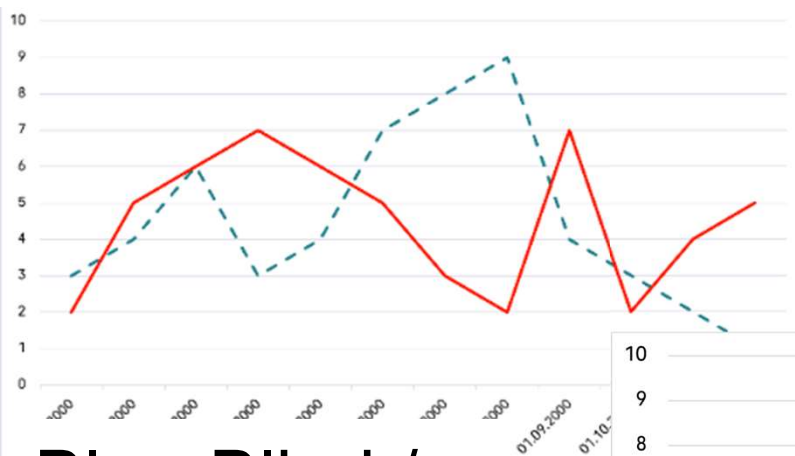
Green-Blind / Deuteranopia



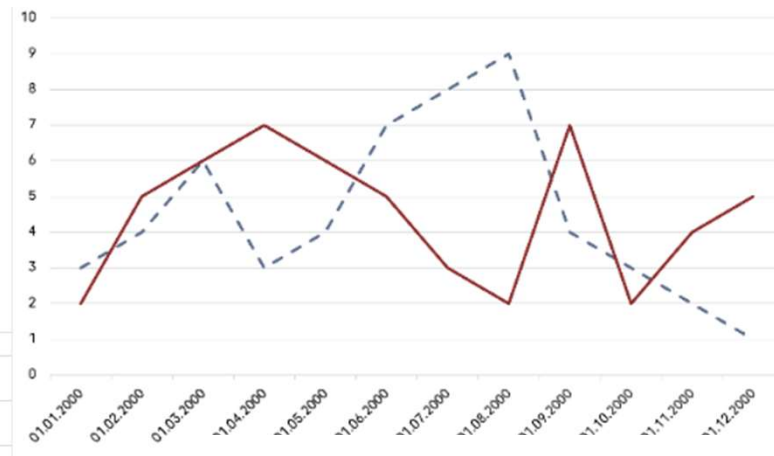
Red-Blind / Protananopia



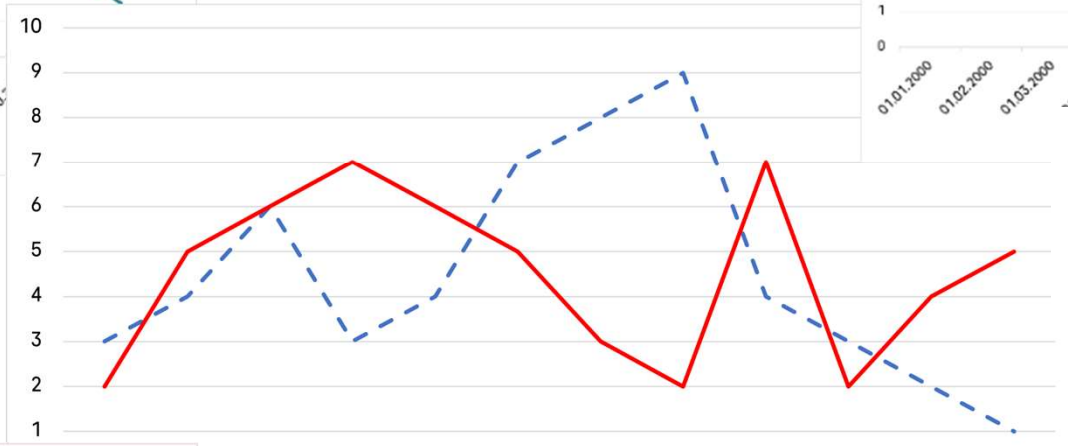




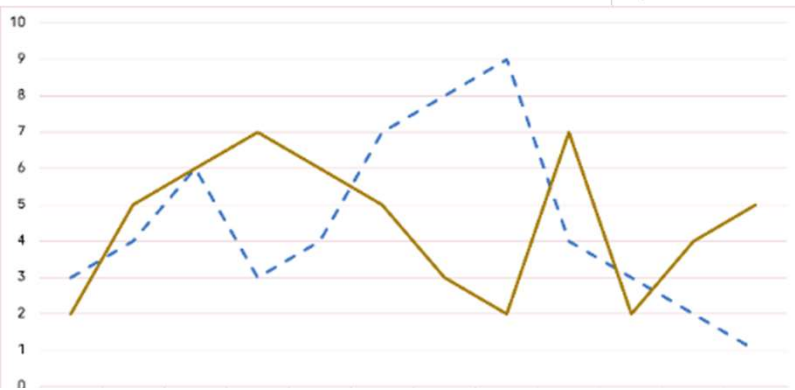
Blue-Blind /
Tritanopia



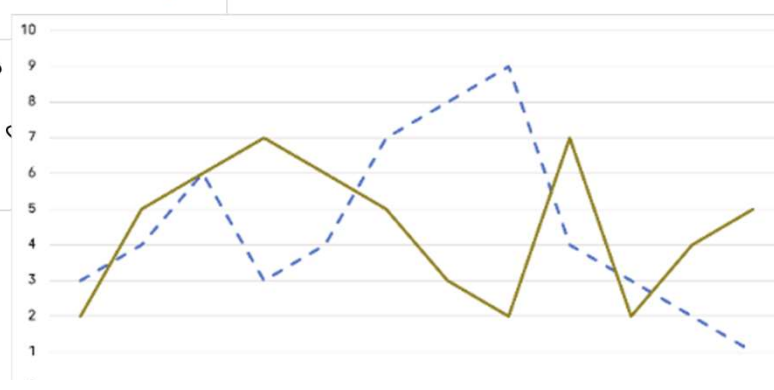
Blue Cone
Monochromacy



Accessible
graph



Green-Blind / Deuteranopia



Red-Blind / Protanopia

Further considerations for accessibility


- Make interactive elements easy to identify
- Clear & consistent navigation options
- Provide easy feedback (e.g., input & error messages)
- Group related content with headings & spaces
- Consider different device sizes
- Include image & media alternatives
- Provide visible controls for content

Bottom Line

- Providing access or information in more than 1 version will automatically remove hurdles
- Big Fonts \Rightarrow people will listen to you since not busy reading
- Slides for presentations \neq slides for documentation / reading
- Enough Contrast

<https://www.w3.org/WAI/>

Making the Web Accessible

Hide Section 

Strategies, standards, and supporting resources to help you make the Web more accessible to people with disabilities.



W3C

The World Wide Web Consortium (W3C) develops international standards for the Web: HTML, CSS, and many more.



WAI

The W3C Web Accessibility Initiative (WAI) develops standards and support materials to help you understand and implement accessibility.



You

You can use W3C WAI resources to make your websites, applications, and other digital creations more accessible and usable to everyone.

<https://www.w3.org/WAI/>

- [Introduction to Web Accessibility](#)
- [Accessibility Principles](#)
- [How people with disabilities use the web](#)
- [Web Accessibility Tutorials](#) –guidance, for example, [providing alternative text for images](#)
- [Before and After Demonstration](#)
- [How to Meet WCAG \(Quick Reference\)](#)
- [Web Accessibility Evaluation Tools List](#)

Some more stuff

- Several R-packages to help chose colours, e.g., ColorBrewer
- Many resources also publically avaiable, e.g. on YouTube:
[data visualization accessibility](#)
- [Colour Blindness Simulator](#) - quickly check

Doing now what patients need next