Respecting User Preferences *on the Web*

Eric Eggert · AccessU · May 2020

Eric Eggert

Eric Eggert is a Web Developer and Teacher who works with Knowbility on improving the Web for People with Disabilities, and everyone else.

2013–2020: W3C/Web Accessibility Initiative

Users
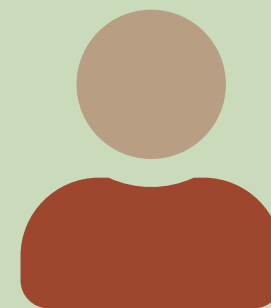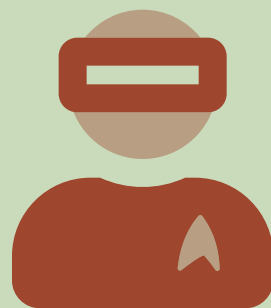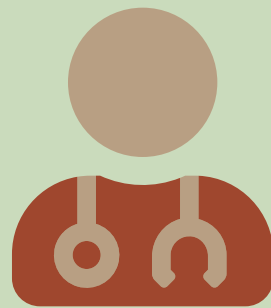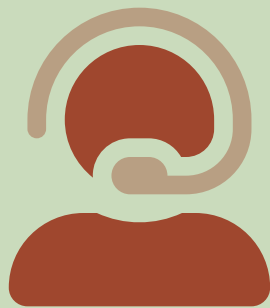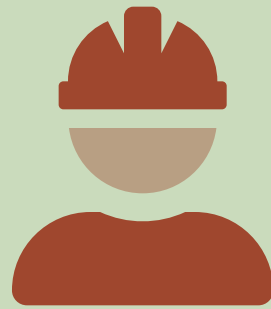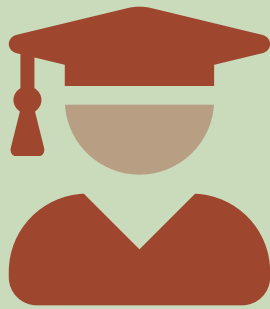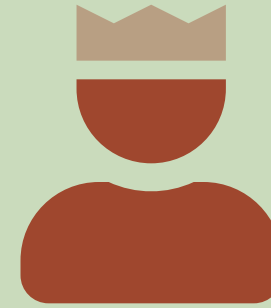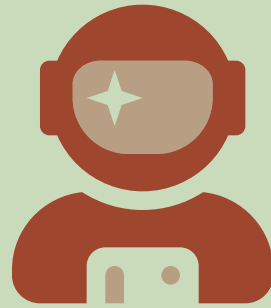
No User is the Same

The "Average Man"?

AERO MEDICAL LABORATORY

AND

E. CHURCHILL

ANTIOCH COLLEGE

SEPTEMBER 1954

WRIGHT AIR DEVELOPMENT CENTER

200211104059

Thanks Matt!

Why do we design like they are?

Why do we develop like they are?

What Does *Inclusive Design* Even Mean?
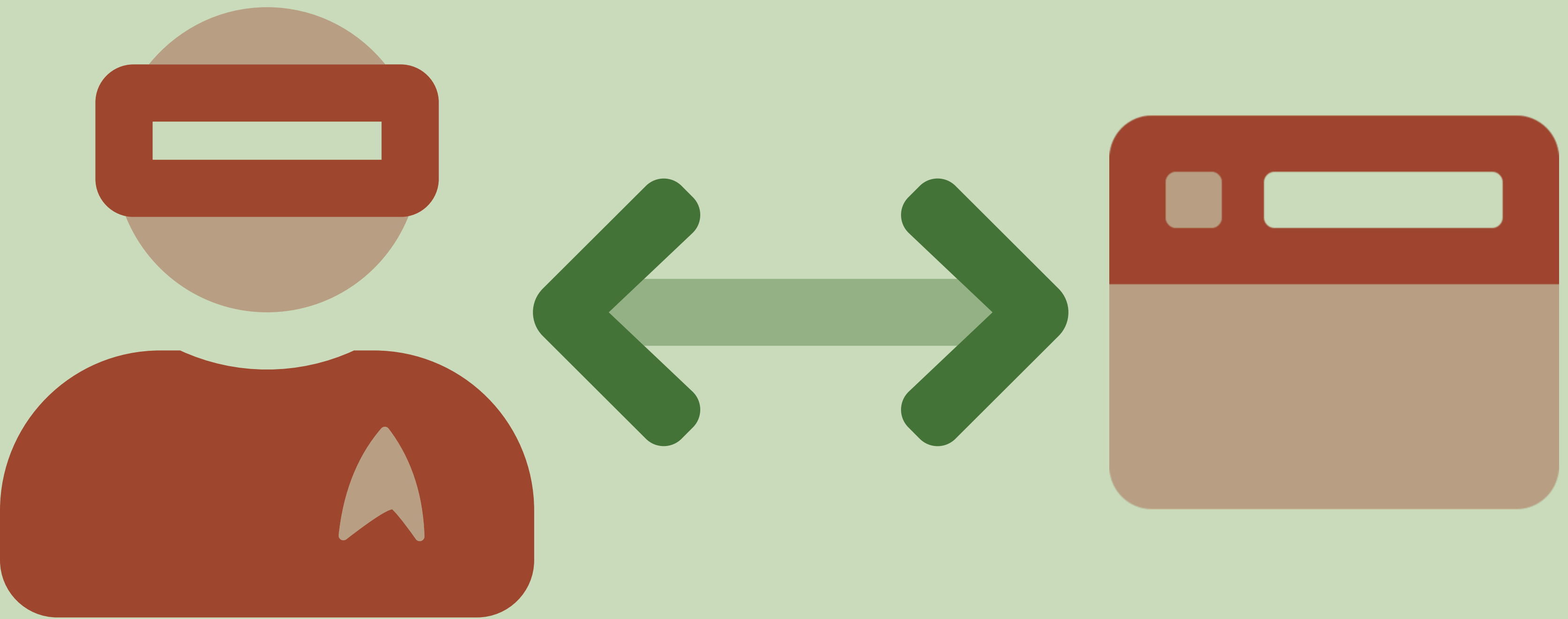
Screen Reader
Differences
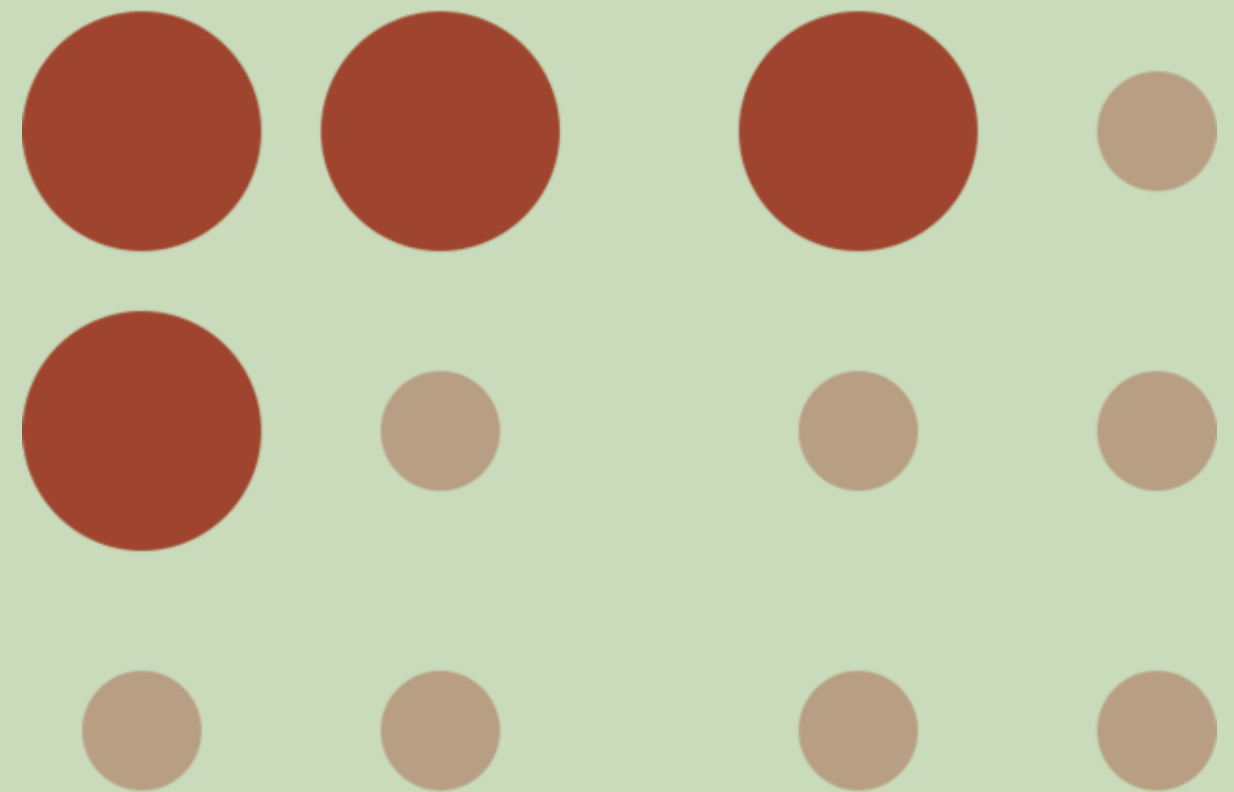
"VoiceOver and Safari remove list element semantics when list-style: none is used."

— Scott O'Hara: "Fixing" Lists

- Lorem ipsum dolor, sit amet consectetur adipisicing elit. Ex tempora omnis asperiores autem delectus necessitatibus iure illo. Beatae odio error recusandae vitae? Rerum aperiam porro cumque, maiores ducimus quae nulla.

- Eaque ea vitae voluptatum repudiandae reprehenderit magnam repellendus deleniti, quos voluptates autem odit assumenda ducimus corrupti nam ratione dolorem voluptatem dolore ipsam doloremque veniam. Quibusdam recusandae ipsam quae nihil quod?

- Ipsam, numquam provident explicabo, labore enim laborum iste soluta ad architecto ex fugit et quasi reprehenderit recusandae voluptatum temporibus placeat odio nemo commodi doloribus officia nisi. Aliquid est voluptates ab.

Lorem ipsum dolor, sit amet consectetur adipisicing elit. Ex tempora omnis asperiores autem delectus necessitatibus iure illo. Beatae odio error recusandae vitae? Rerum aperiam porro cumque, maiores ducimus quae nulla.

Eaque ea vitae voluptatum repudiandae reprehenderit magnam repellendus deleniti, quos voluptates autem odit assumenda ducimus corrupti nam ratione dolorem voluptatem dolore ipsam doloremque veniam. Quibusdam recusandae ipsam quae nihil quod?

Ipsam, numquam provident explicabo, labore enim laborum iste soluta ad architecto ex fugit et quasi reprehenderit recusandae voluptatum temporibus placeat odio nemo commodi doloribus officia nisi. Aliquid est voluptates ab.

Web Developers were like:
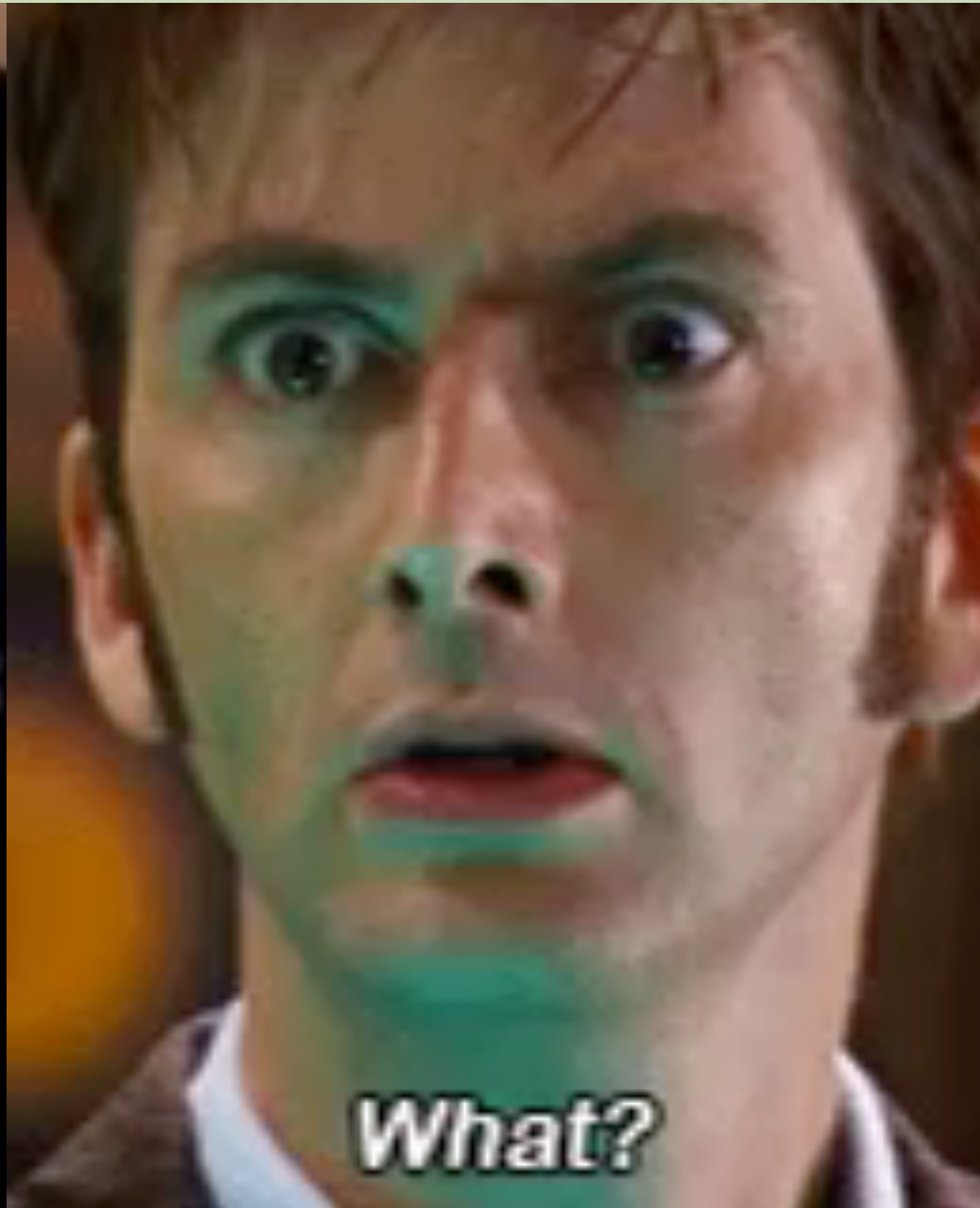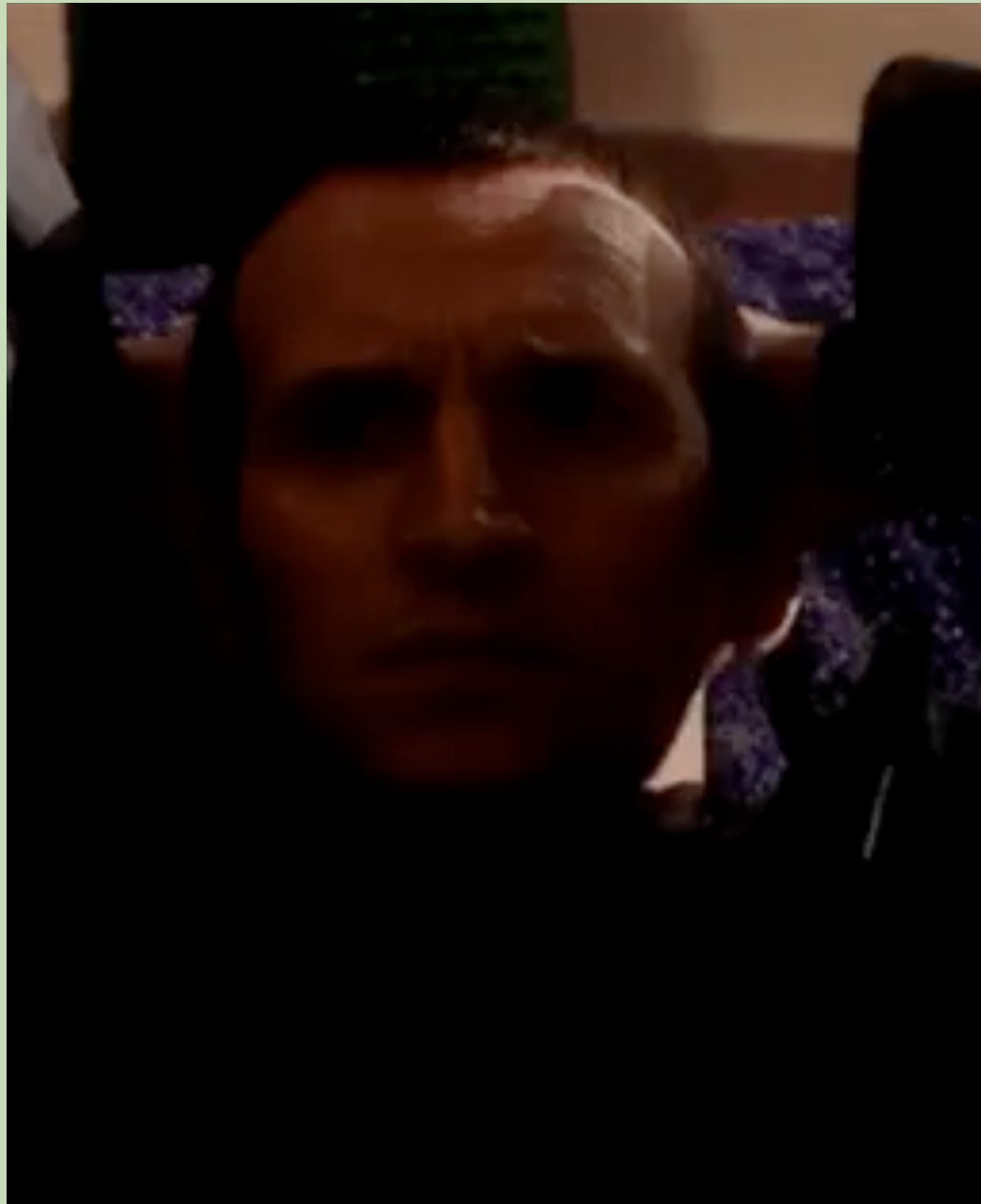
"This was a purposeful change due to rampant 'list'-itis by web developers."

— James Craig, Apple, bugs.webkit.org

What? No, hang on a sec!

"What does it mean for me, as a web developer, that Safari is not reading lists, when they don't look like a list?"

— John Doe-veloper

Nothing.

A Time Line

→ 2014: First Commit

→ 2015: Additional Code

→ ...

→ 2019: The Web Notices

"Customers seem much happier in the 3 years since this change went in."

— James Craig, Apple, bugs.webkit.org

NO!

The same it true
for screen readers:
They don't all need to
produce the same output.

VoiceOver Utility

General

Verbosity

Speech

Navigation

Web

Sound

Visuals

Commanders

Braille

Activities

Speech | Braille | Text | Announcements | Hints

Default Speech Verbosity: Medium

Control	Verbosity	Description
App	Default	Name
Button	Default	Name, Status, Type
Column View	Default	Name, Status, Type
Combo Box	Default	Name, Status, Type
Disclosure Triangle	Default	Name, Status, Type
Dock Item	Default	Name, Status
Drawer	Default	Name, Status, Type
Heading	Default	Status, Type, Name
Image	Default	Name, Status, Type
Incrementor	Default	Name, Status, Type
Layout Area	Default	Name, Status, Type
Layout Item	Default	Name, Status, Type

VoiceOver Utility

General	
Verbosity	
Speech	
Navigation	
Web	
Sound	
Visuals	
Commanders	
Braille	
Activities	

Speech   Braille   **Text**   Announcements   Hints

Punctuation: | Some |

Repeated punctuation: | First 3 Times |

While typing speak: | Characters and Words |

When moving the cursor: | Speak text that the cursor passes |

When text attributes change: | Do Nothing |

When encountering a misspelled word: | Speak Attributes |

When encountering a link/attachment: | Speak |

Read numbers as: | Words |

When reading a capital letter: | Change Pitch |

When deleting text: | Change Pitch |

VoiceOver Utility

Search

General

Verbosity

Speech

Navigation

Web

Sound

Visuals

Commanders

Braille

Activities

Voices | Pronunciation

Text	Substitution	Application	Ignore Case
:(	frown	All Apps	✅
:)	smiley	All Apps	✅
!	exclaim	All Apps	⬜
?	question	All Apps	⬜
"	quote	All Apps	⬜
(	leftparen	All Apps	⬜
)	rightparen	All Apps	⬜
&	and	All Apps	⬜
<	less	All Apps	⬜
>	greater	All Apps	⬜
802.11b	8 oh 2 dot eleven b	All Apps	✅
802.11g	8 oh 2 dot eleven g	All Apps	✅
GIF	giff	All Apps	⬜
GUI	gooey	All Apps	⬜
qty	quantity	All Apps	✅

+ | −

There is
no control.

ARIA *can* help, but not in every situation.

Accessibility is not only Screen Readers

Most non-Screen-Reader assistive technology does not work well with ARIA.

Nuance released the lucky version 13 of [Dragon Naturally Speaking](). I've been doing some preliminary testing and here's what Dragon 13 supports (so far) in terms of ARIA:

- `role="button"`

- `role="link"`

- `role="radio"`

- `role="checkbox"`

- `aria-label`

That's just in about 30 mins of testing, so there's definitely more to test, but this is a huge step.

How Dragon Naturally Speaking works with ARIA » Simply Accessible *(2014)*

High Contrast Mode

I'm a real link | As am I

___

I'm a placeholder link (no href)

___

I'm an ARIA link made out of a div

___

I'm an ARIA link made out of a button

I'm a paragraph of text with an ARIA link within me. Where I be?

I'm a real link | As am I

I'm a placeholder link (no href)

I'm an ARIA link made out of a div

I'm an ARIA link made out of a button

I'm a paragraph of text with an ARIA link within me. Where I be?

Normal Button   aria-disabled button   Actually Disabled Button

Users!

Knowledge Levels Vary Greatly

*Users often **don't know** what their computers can do for them.*

*Other Users **hack** their assistive technology to work with inaccessible sites.*

Some users write CSS and JavaScript to change websites to their needs.

User =
Disability Type ✕
Proficiency ✕
Accessibility Support

Type of Disability

Accessibility Support

Proficiency

Your Users are Everywhere here.
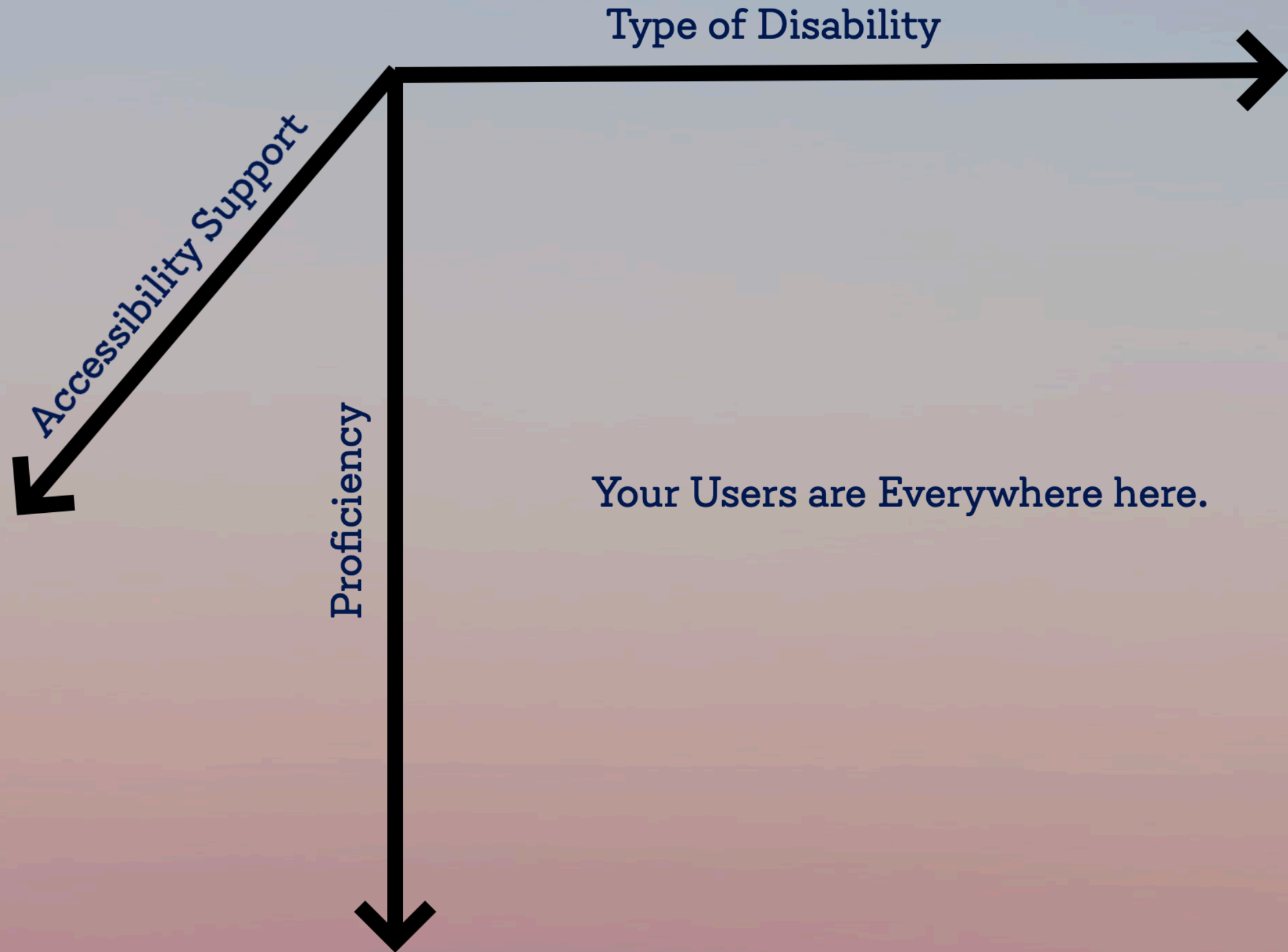
Test with Diverse Users

Give Users Agency

Allow use of assistive technology that suits a particular user's needs.

Try not to prescribe how to use a component.

Use HTML to describe elements.

Don't expect any proficiency from users.

Don't break conventions!

Users get a lot more tools to use!

yatil.net

EN   13 May 2020   speaking tips

Better Online Presentations

Here are some of the tips I have gathered from doing online Zoom talks since 2015. I hope they help with your talk as well.

Sound

The sound on Zoom meetings is usually really compressed to be efficiently transmitted to the attendees, therefore investing into sound gear should not be the highest priority. That said, clear, intelligible sound is much more important than everything else. If you're hard to understand or if there's a constant noise

A   A

Hide Reader View   🧭

Font   New York   ›

Website Settings   ⚙

tations

...thered from
... I hope they

...ually really
compressed to be efficiently transmitted to the
attendees, therefore investing into sound gear
should not be the highest priority. That said,
clear, intelligible sound is much more
important than everything else. If you're hard
to understand or if there's a constant noise
from your line, attendees might not be able to
follow you.

Always use headphones. I have seen guidance
that headphones look amateurish, but that is
not true from my point of view. You want to
understand audience questions or your
moderator. That's just much more reliable
when they are actually in or on your ears.

Reader Mode

Native Support:

→ Safari (since 2010, can set to default since 2015)

→ Firefox (2015)

→ Edge (2015)

→ Chrome (soon???)

Introduction to Web Accessibility

w3c_wai

7-9 minutes

Page Contents

Accessibility in Context

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

The Web is fundamentally designed to work for all people, whatever their hardware, software, language, location, or ability. When the Web meets this goal, it is accessible to people with a diverse range of hearing, movement, sight, and cognitive ability.

Thus the impact of disability is radically changed on the Web because the Web removes barriers to communication and interaction that many people face in the physical world. However, when websites, applications, technologies, or tools are badly designed, they can create barriers that exclude people from using the Web.

Accessibility is essential for developers and organizations that want to create high-quality websites and web tools, and not exclude people from using their products and services.

Web Accessibility

7-9 minutes

Page Contents

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https://www.w3.org/WAI/fundan

Sans-serif

Serif

Light   Dark   Sepia

Web Accessibility

xt

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More Website Settings

🔒 medium.com/s/story/how-a-tv-sitcom-triggered-the-downfall-of-western-civilization-

outline ⌄   ♿ ⌄   misc ⌄

POWER TO...   W3C SVG Aut

When visiting this website:

✅ Use Reader when available

✅ Enable content blockers

Page Zoom: 100 %
Auto-Play: Never Auto-Play
Pop-up Windows: Block and Notify

Camera: Ask
Microphone: Ask
Location: Ask

Websites

General | Tabs | AutoFill | Passwords | Search | Security | Privacy | **Websites** | Extensions | Advanced

General

- Reader
- Content Blockers
- **Auto-Play**
- Page Zoom
- Camera
- Microphone
- Location
- Notifications
- Pop-up Windows

Plug-ins

☑ WebEx64 General Plu...
Version 1.1.0

Allow the websites below to automatically play media:

Currently Open Websites

duckduckgo.com	Never Auto-Play
giphy.com	Stop Media with Sound
knowbility.org	Never Auto-Play
lynda.com	Never Auto-Play
medium.com	Never Auto-Play
noti.st	Never Auto-Play
slides.com	Allow All Auto-Play
talks.yatil.net	Never Auto-Play
w3c.github.io	Never Auto-Play

Configured Websites

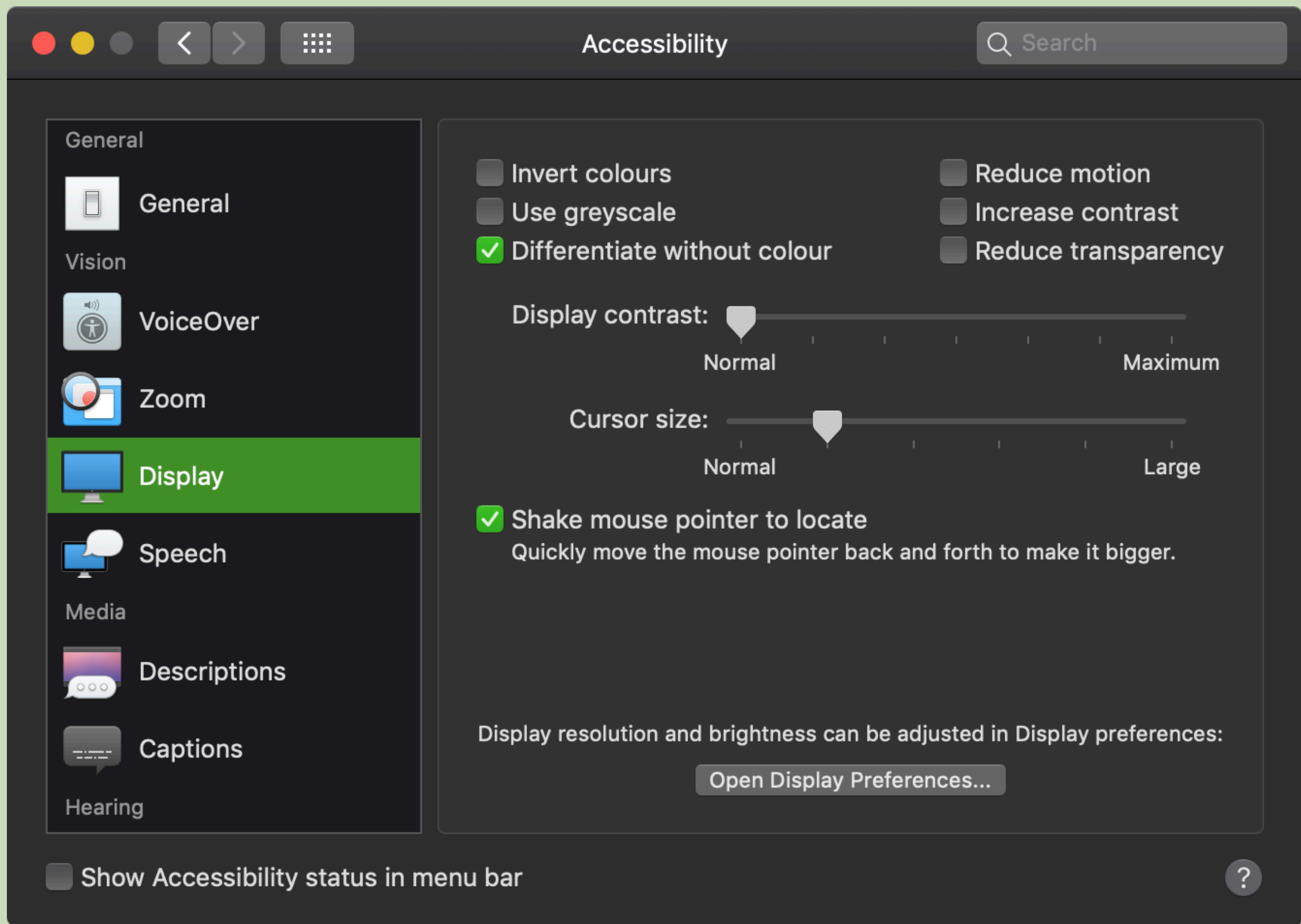|	
apple.com	Stop Media with Sound
ct-com-wci-bff-tst.us-south.containers.ap...	Allow All Auto-Play

Remove   When visiting other websites: Never Auto-Play

Leveraging Operating System Preferences

Search

General

General

Vision

VoiceOver

Zoom

Display

Speech

Media

Descriptions

Captions

Hearing

☐ Invert colours
☐ Use greyscale
☑ Differentiate without colour

☐ Reduce motion
☐ Increase contrast
☐ Reduce transparency

Display contrast:

Normal   Maximum

Cursor size:

Normal   Large

☑ Shake mouse pointer to locate
Quickly move the mouse pointer back and forth to make it bigger.

Display resolution and brightness can be adjusted in Display preferences:

Open Display Preferences...

☐ Show Accessibility status in menu bar

prefers-reduced-motion
Media Query

```css
@media (prefers-reduced-motion: reduce) {
  * {
      transition: none !important;
      animation: none !important;
  }
}
```

Or, better, progressively enhance:

```css
@media (prefers-reduced-motion: no-preference) {
   /* All animation code */
}
```

see "Defensive use of prefers-reduce-motion" à la <u>Patrick H. Lauke</u>

Support

prefers-reduced-motion media query

CSS media query based on a user preference for preferring reduced motion (animation, etc).

IE	Edge	Firefox	Chrome	Safari	iOS Safari	Opera Mini	Chrome for Android	Android Browser	Samsung Internet
9	18	72	78	12	13.1			4.4	9.2
10	79	73	79	12.1	13.2			4.4.4	10.1
11	80	74	80	13	13.3	all	80	80	11.1
		75	81	TP					

✓ ✗ Partial Support

Global: 84.05% + 0% = 84.05%

Data from caniuse.com | Embed from caniuse.bitsofco.de

12 March 2020

<u>Source: Can I Use</u>

On Windows
...it's complicated

Short note on prefers-reduced-motion and puzzled (Windows) users

Patrick H. Lauke @ TPG Blog

prefers-color-scheme Media Query

```css
:root {
  --color: #333;
  --bgcolor: #eee;
}

@media (prefers-color-scheme: dark) {
  :root {
    --color: #eee;
    --bgcolor: #333;
  }
}

html {
  color: var(--color);
  background-color: var(--bgcolor);
}
```

DEMO

We³ also get a lot more tools to use!

³ Designers & Developers

Media Queries Level 5(?)

inverted-colors[4]

→ none

→ inverted

Supported in Safari macOS & iOS.

[4] Planned in <u>Media Queries Level 5</u>

prefers-reduced-transparency[4]

-> no-preference

-> reduce

No support yet.

[4] Planned in <u>Media Queries Level 5</u>

prefers-contrast[4]

→ no-preference

→ high

→ low

No support yet.

forced-colors[4]

→ none

→ active

No support yet.

[4] Planned in <u>Media Queries Level 5</u>

Environment MQs[4]

[4] Planned in Media Queries Level 5

light-level[4]

→ dim

→ normal

→ washed

No support yet.

[4] Planned in Media Queries Level 5

environment-blending[4]

→ opaque

    → The document is rendered on an opaque medium, such as a traditional monitor or paper. Black is dark and white is 100% light.

→ additive

    → The display blends the colors of the canvas with the real world using additive mixing. Black is fully transparent and white is 100% light.
    For example: a head-up display in a car.

→ subtractive

    → The display blends the colors of the canvas with the real world using subtractive mixing. White is fully transparent and dark colors have the most contrast.
    For example: an LCD display embedded in a bathroom mirror.

No support yet.

[4] Planned in Media Queries Level 5

Conclusion

-> Do not make assumptions about users and the tools they use

-> Prepare your content and design for different circumstances

-> Embrace the uncertainty

Thank You!

Eric Eggert

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E-Mail: mail@yatil.net

Social: @yatil

Never be cruel, never be cowardly. And never ever eat pears! Remember – hate is always foolish… and love, is always wise. Always try, to be nice and never fail to be kind. […] Laugh hard. Run fast. Be kind.

— 12th Doctor