

Decoding the Impact

**Accessibility Overlays
through a Scientific Lens**

ACCESSIBILITY OVERLAYS



What is web accessibility?

ISO Norm 9241-210:2019

Accessibility refers to the extent to which products, systems, services, environments, and facilities can be used by individuals with a wide range of user needs, characteristics, and capabilities to achieve identified goals in specific contexts of use, including both direct use and access technology.

ISO Norm 9241-210:2019



People with impairments must be able to
*perceive, understand, navigate, interact with and
contribute to the web.*

ISO Norm 9241-210:2019



People with impairments must be able to
use the web

Visual Impairment

impairment

Visual Impairment

Visual Impairment

Presentation Slide, web content.

You are currently on web content. To enter the web area, press Control-Option-Shift-Down arrow.

Presentation Slide, web content.

Heading level 1, visual impairment.

You would need captions for spoken content, in, for example, videos.

Physical/Motor Impairment



© www.youtube.com/watch?v=cPs-RdWoVc0

Cognitive, Learning, Neurological Impairments

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Cognitive, Learning, Neurological Impairments

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Cognitive, Learning, Neurological Impairments

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Cognitive, Learning, Neurological Impairments

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Cognitive, Learning, Neurological Impairments

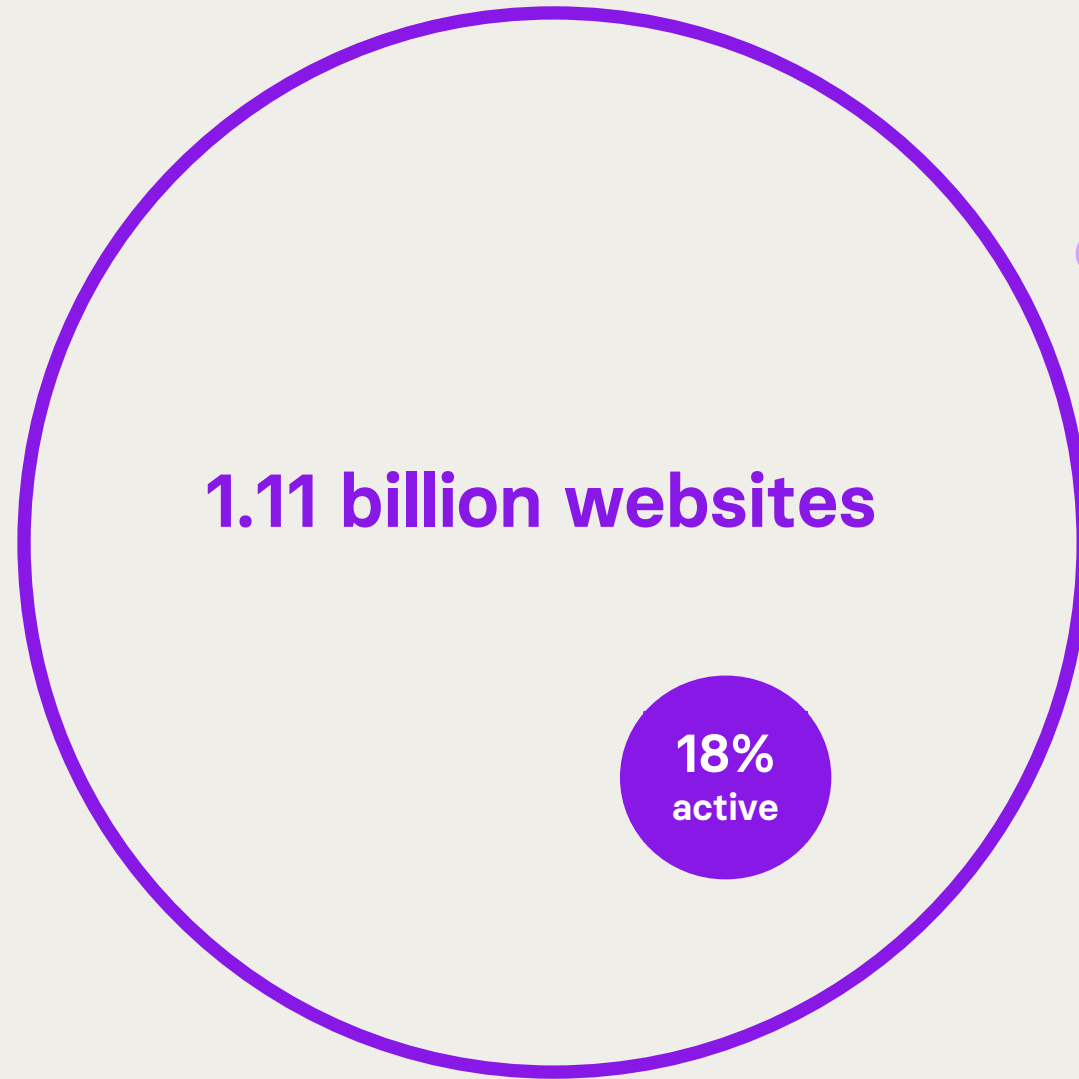
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Cognitive, Learning, Neurological Impairments

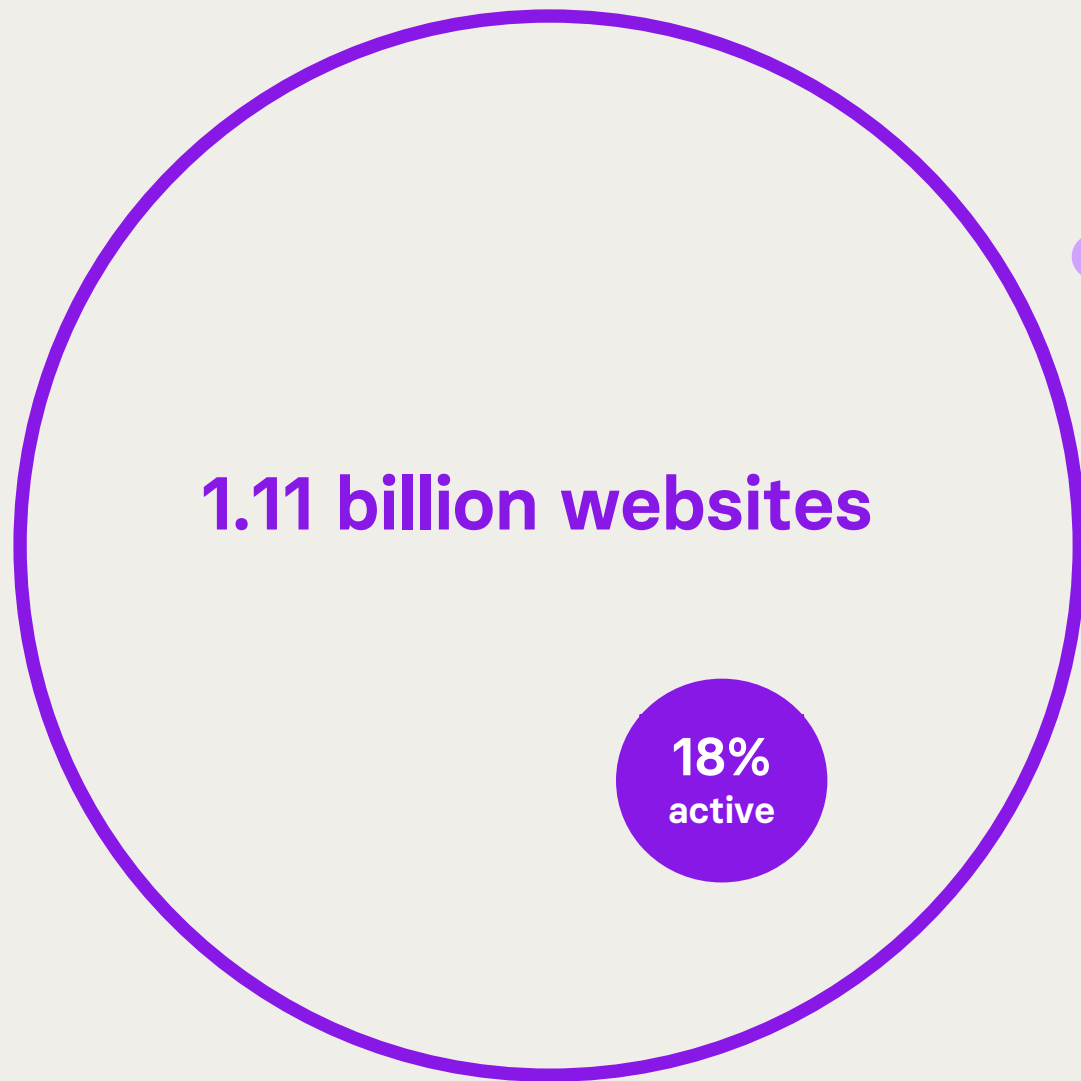
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Cognitive, Learning, Neurological Impairments

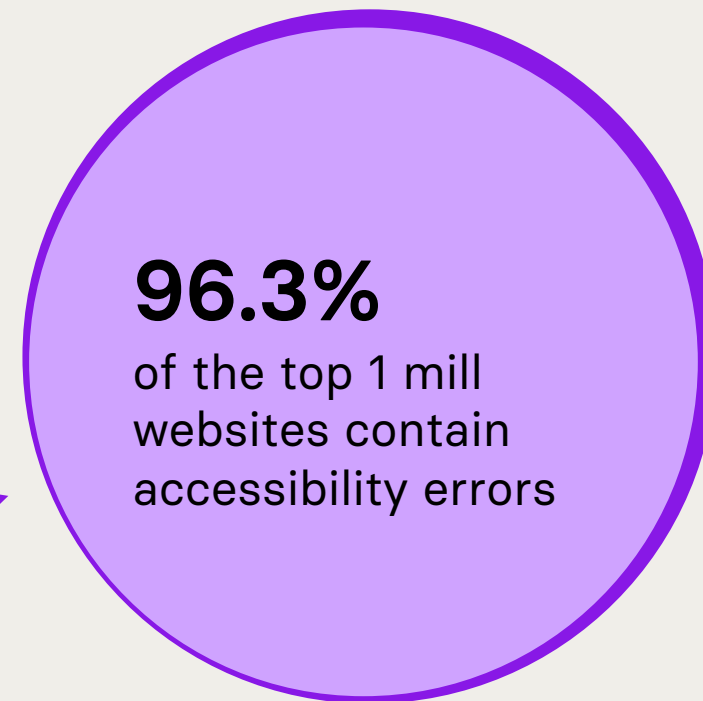
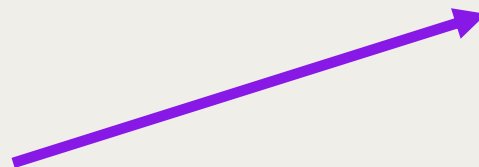
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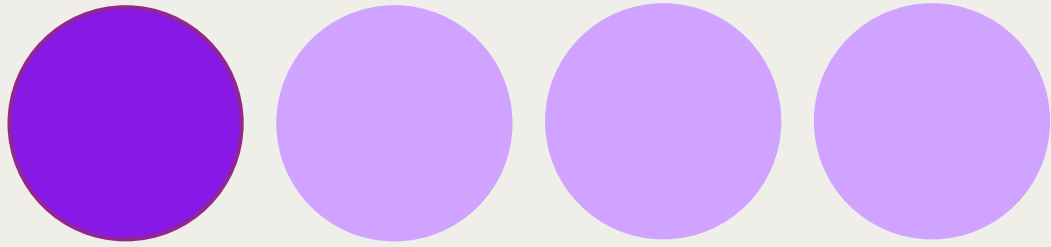


+ 252000
per day

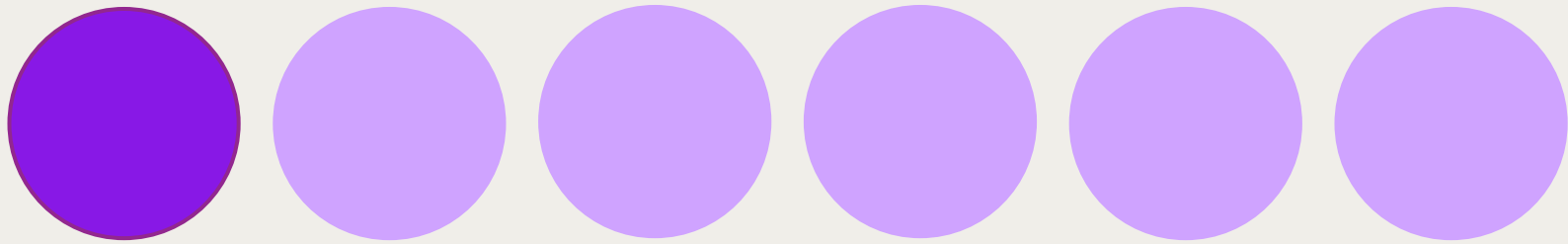


+ 252000
per day





In Europe, 1/4 adults [87 million people] has **some form of impairment.**



Globally, 1/6 individuals [1.3 billion people] experiences a **significant impairment.**

**Everyone benefits from an
accessible website.**

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

– Sir Tim Berners-Lee

✨ Accessibility Overlays ✨



Accessibility Menu (CTRL+U)



English (USA) ▾

Accessibility Profiles ▾



Motor Impaired

Blind

Color Blind

Dyslexia

Visually-impaired

Cognitive & Learning

Seizure & Epileptic

ADHD

XL Oversized Widget



Screen Reader

Contrast +

Smart Contrast

Highlight Links

Bigger Text

Text Spacing

Dyslexia

ON

OFF

Navigation Adjustment



Screen Reader Adjustment

Keyboard Navigation

Smart Navigation



Adjust Letter Spacing



Default



Align Right

Color Adjustments

Reset

Close

☐ Show shortcuts (d)

Page Structure

Visual Toolkit

Focus

Cursor

Highlight
...

Contrast
...

Color Shift

Animation

Text Size
...

Spacing

Font
...

Guide

Window

Images

AudioEye Trusted Certification

Settings

Help

Accessibility Adjustments

Reset Settings

Statement

Hide Interface

Unclear content? Search in dictionary...



Choose the right accessibility profile for you

OFF ON

Seizure Safe Profile
Clear flashes & reduces color



OFF ON

Vision Impaired Profile
Enhances website's visuals



OFF ON

ADHD Friendly Profile
More focus & fewer distractions



OFF ON

Cognitive Disability Profile
Assists with reading & focusing



OFF ON

Keyboard Navigation (Motor)
Use website with the keyboard



OFF ON

Blind Users (Screen Reader)
Optimize website for screen-readers



HOME — BRACELETS

Center stone shape ▾ Collection ▾ Designer ▾ Diamond setting ▾ Gender ▾ Gemstone color ▾ Metal type ▾ Metal color ▾ Price ▾ Featured ▾

SKU 5524421



SWAROVSKI

SWAROVSKI SILVER TONE CRYSTAL BRACELET

\$85.00

SKU SB236FY



TACORI

TACORI OPEN CRESCENT DIAMOND BRACELET

\$990.00

SKU SB236FW



TACORI

TACORI OPEN CRESCENT DIAMOND BRACELET

\$990.00

SKU SB236FP



TACORI

TACORI OPEN CRESCENT DIAMOND BRACELET

\$990.00

SKU SB234FY

SKU SB234FW

SKU SB234FP

SKU FB825EC55X4LDY



**Accessibility Overlays are
simply AMAZING!?**

Decoding the Impact

**Accessibility Overlays
through a Scientific Lens**

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Accessibility Engineer*

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LinkedIn @danikubesch

Web dnikub.dev



a11yphant.com

The easy way to learn web accessibility



mindscreen.de

Scaling digital accessibility



Study Design

Technical Evaluation

Against WCAG 2.1 AA

User Study

21 individuals with permanent visual impairments

Expert Interviews

2 consultants, 2 company representatives

**In their current state,
accessibility overlays do not
deliver on their promises and
are a disability dongle.***



BUT



**In their current state,
accessibility overlays do not
deliver on their promises and
are a disability dongle.***

***But people with impairments are still optimistic and hopeful
that accessibility overlays will be useful in the future.**



Three Guiding Principles

1.

Do not prioritise some users' experience over the deterioration of others.

26 – 2 (+ 2)

WCAG 2.1 A / AA Violations

Issue

Element Order



Music Festival
07.-24.09.2023



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COOKIES
AKZEP-
TIEREN

Issue

Element Order



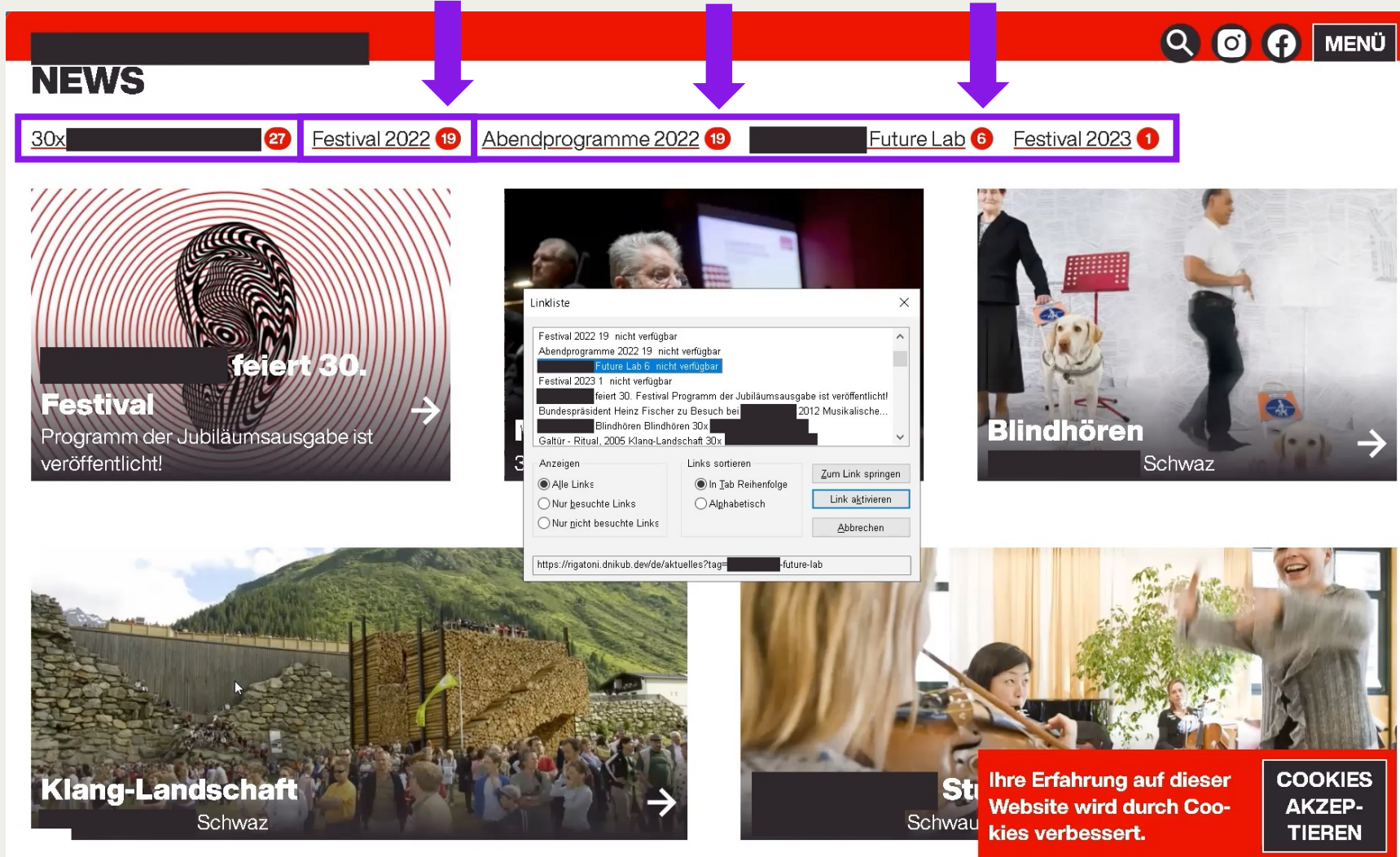
- **Festival**
- **Future Lab**
- **Kinder/Jugend**
- **News**
- **Service**
- **Kontakt**
- **Über uns**

Suche nach Veranstaltungen oder

SUCHE

Missing Context

On



Visual Display

Festival 2022 (19)

Screen Reader

Festival 202219

Screen Reader w/ Overlay

Festival 2022 19

Illogical Headings



Martin Brandlmayr Schwaz, Firma Trigonos

Komponist und Perkussionist: Martin Brandlmayr

span.italic 262.75 x 32.5

<H3>



- Martin Brandlmayr: ***Dance around the Table.*** 2022, UA, 55'

Martin Brandlmayr (*1971, AUT), Komponist und Perkussionist, Grenzgänger zwischen akustischer und elektronischer Musik, zwischen Notation und Improvisation und Mitglied der Avantgarde-Band Radian, spielt in seinem

Illogical Headings



Music Festival <H1>

Presse <H1>

Sehr geehrte Medienvertreter,

hier finden Sie Presseinformationen, Pressebilder (alphabetisch sortiert) zum Festival und für Ihre Berichterstattung. Darüber hinaus verfügen wir über weitere Pressefotos und senden Ihnen gerne eine Auswahl zu. Alle Bilder sind bei Nennung des Urhebers honorarfrei, solange sie für die Berichterstattung über Schwaz verwendet werden.

Wenn Sie an unseren Presseinformationen interessiert sind, geben Sie uns gerne Ihre Daten bekannt.

Pressekontakt:

Presseaussendungen <H2>

Schwaz: 31. Festivalsausgabe unter dem Motto "Konspirationen"
28.05.2024 | Das Festival steht in diesem Jahr unter dem Motto Konspirationen und will in Zeiten der zunehmenden Polarität den Fokus auf Verbindendes richten. Konspiration lässt sich dabei – im Gegensatz zum landläufigen Verständnis des Begriffes als Aufruf zur Verschwörung – als Inspiration zum kollektiven Erleben verstehen. Programmiert vom künstlerischen Leiter Christof Dienz und "Curating Artist" Eva Reiter.

-Schwaz-2024---Pressemappe.pdf



Pressebilder <H2>



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COOKIES
AKZEP-
TIEREN

Illogical Headings

Music Festival

<H1>

Presse

<H1>

Sehr geehrte Medienvertreter,

<H4>

hier finden Sie Presseinformationen, Pressebilder (alphabetisch sortiert) zum Festival und für Ihre Berichterstattung. Darüber hinaus verfügen wir über weitere Pressefotos und senden Ihnen gerne eine Auswahl zu. Alle Bilder sind bei Nennung des Urhebers honorarfrei, solange sie für die Berichterstattung über Schwaz verwendet werden.

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Pressekontakt:

<H4>

Presseaussendungen

<H2>

<H3>

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-Schwaz-2024---Pressemappe.pdf

<H4>

Pressebilder

<H2>

<H3>

<H4>



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COOKIES
AKZEP-
TIEREN

Participant Opinion

“Just because it looks like many elements have now been made accessible doesn’t mean it’s optimal. If I have one thousand headings, it doesn’t really help me to get an overview.”

– Participant T5

Issue

Image Description



A close-up of a cat's face



Issue

Image Description



A group of people in a room



What about improvements?!

Improvement Legibility



Issue or Improvement?

Clarity



? role="presentation"

attensam quartett© Barbara Brandstätter

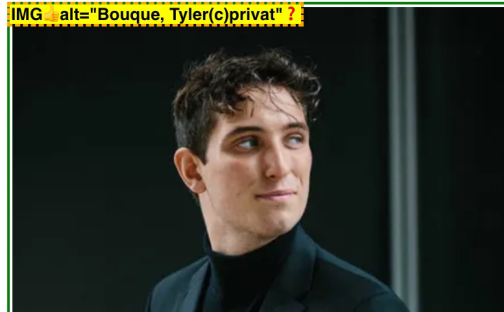
↓ [Herunterladen](#)



? role="presentation"

Bauckholt, Carola (c)Astrid Ackermann

↓ [Herunterladen](#)



“Link, Download”



“Link, This Link Opens
An Image Download”

**Do these improvements make it
okay to use *Accessibility Overlays*?**

**No. Do not prioritise some users' experience
over the deterioration of others.**

2.

**Nothing about us,
without us!**

~36%

Did not detect an Accessibility Overlay

Issue

Accessibility Overlay Recognition



Opinion

“Is this the symbol for the accessibility overlay?
Such a stick figure does not automatically mean
that it is an overlay, it is just a stick figure.”

– Participant T14

Issue

Terminology

Blind?

Visually Impaired?

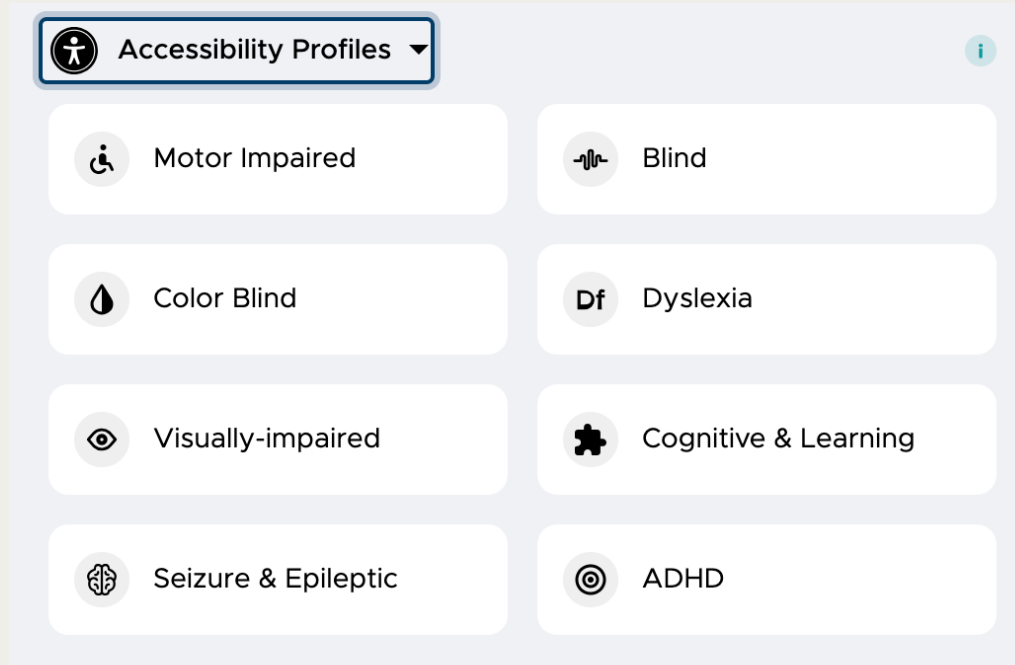
Accessibility?

Approachability?

Issue

Terminology

Impairment Profiles



The screenshot shows a user interface for selecting accessibility profiles. At the top, there is a header bar with a dropdown menu labeled 'Accessibility Profiles' and an information icon. Below this, there is a grid of eight selectable profile buttons, each with an icon and a label. The profiles are: Motor Impaired (person in wheelchair icon), Blind (eye with slash icon), Color Blind (color drop icon), Dyslexia (Df icon), Visually-impaired (eye icon), Cognitive & Learning (puzzle pieces icon), Seizure & Epileptic (brain icon), and ADHD (target icon).

Profile	Icon
Motor Impaired	Person in wheelchair
Blind	Eye with slash
Color Blind	Color drop
Dyslexia	Df
Visually-impaired	Eye
Cognitive & Learning	Puzzle pieces
Seizure & Epileptic	Brain
ADHD	Target

Opinion

“Do I have to choose a profile now?
What if multiple apply to me?”

– Participant T8

Opinion

“I would have to be very interested in this website to work my way through this.”

– Participant T1

Before

Interaction

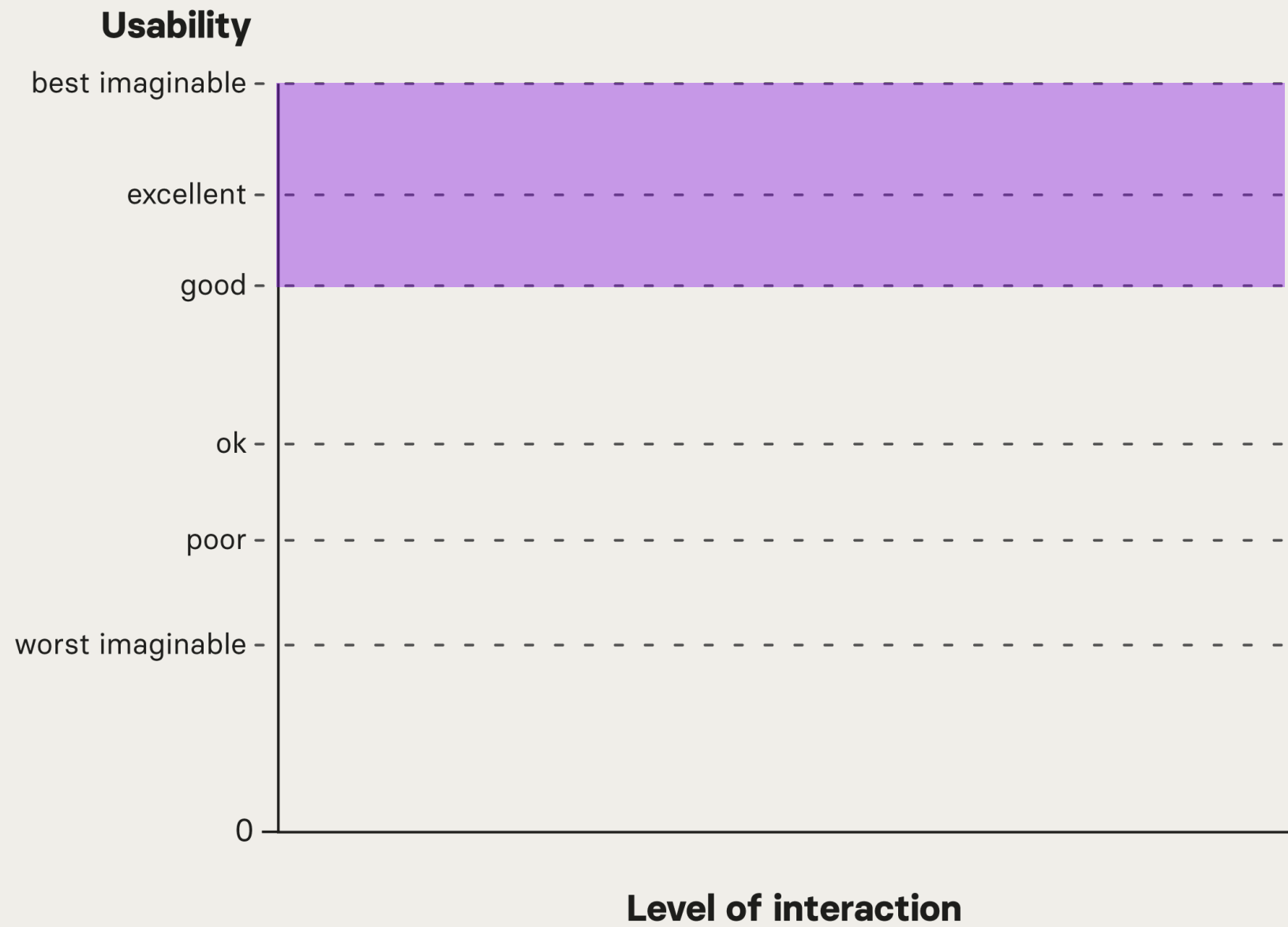
After

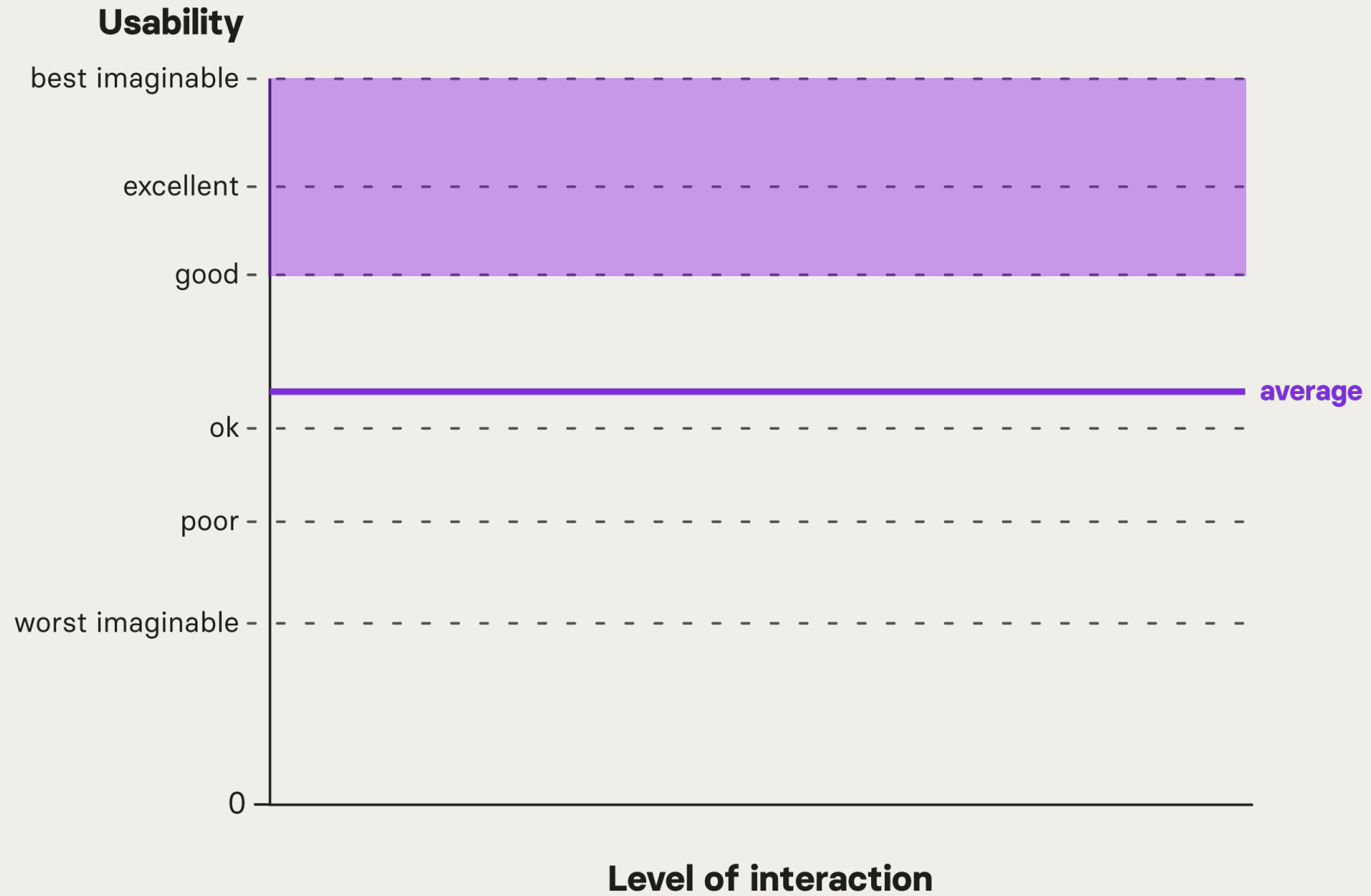
Usability

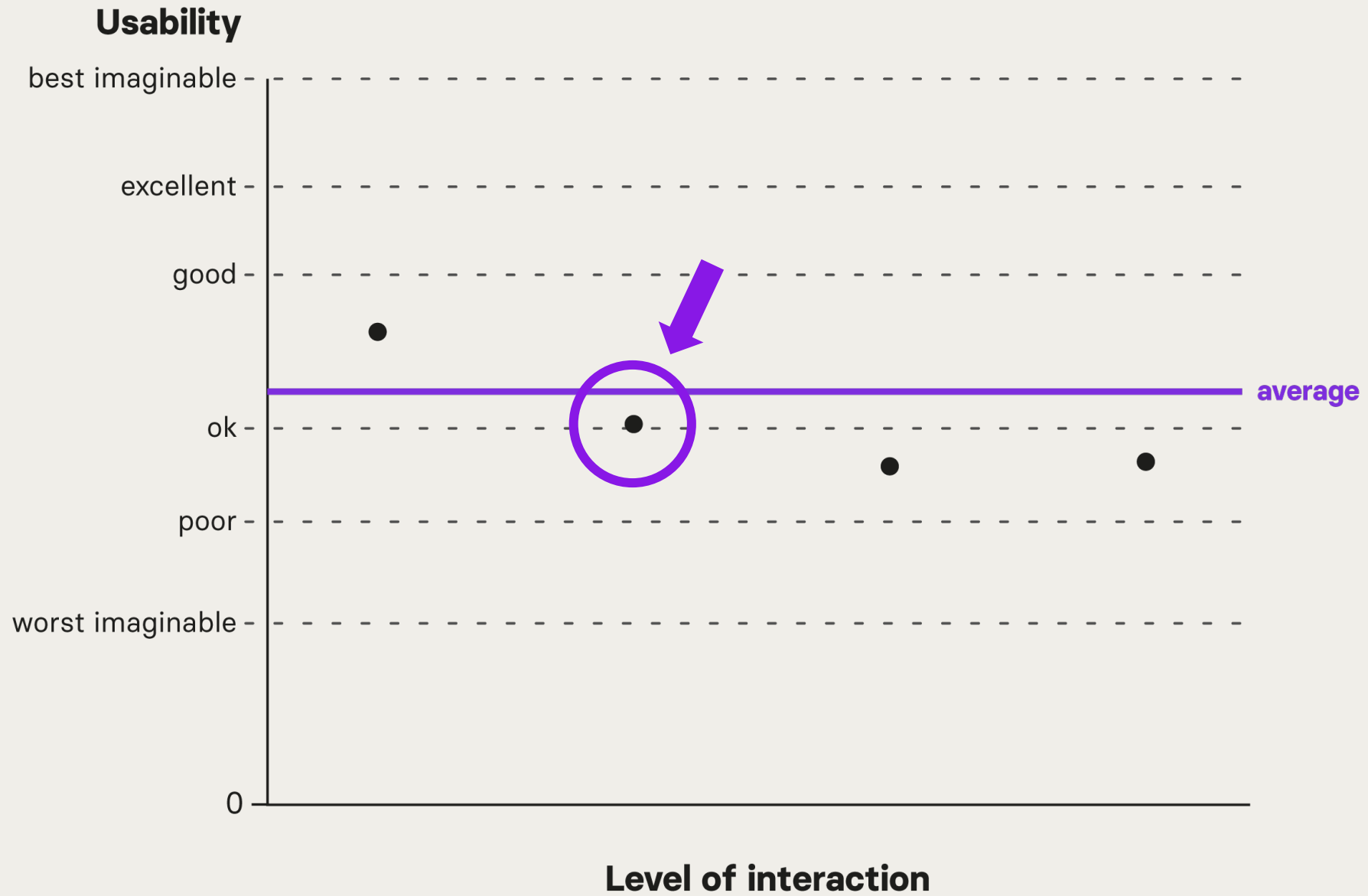
How effectively, efficiently, and satisfactorily users can achieve their goals.

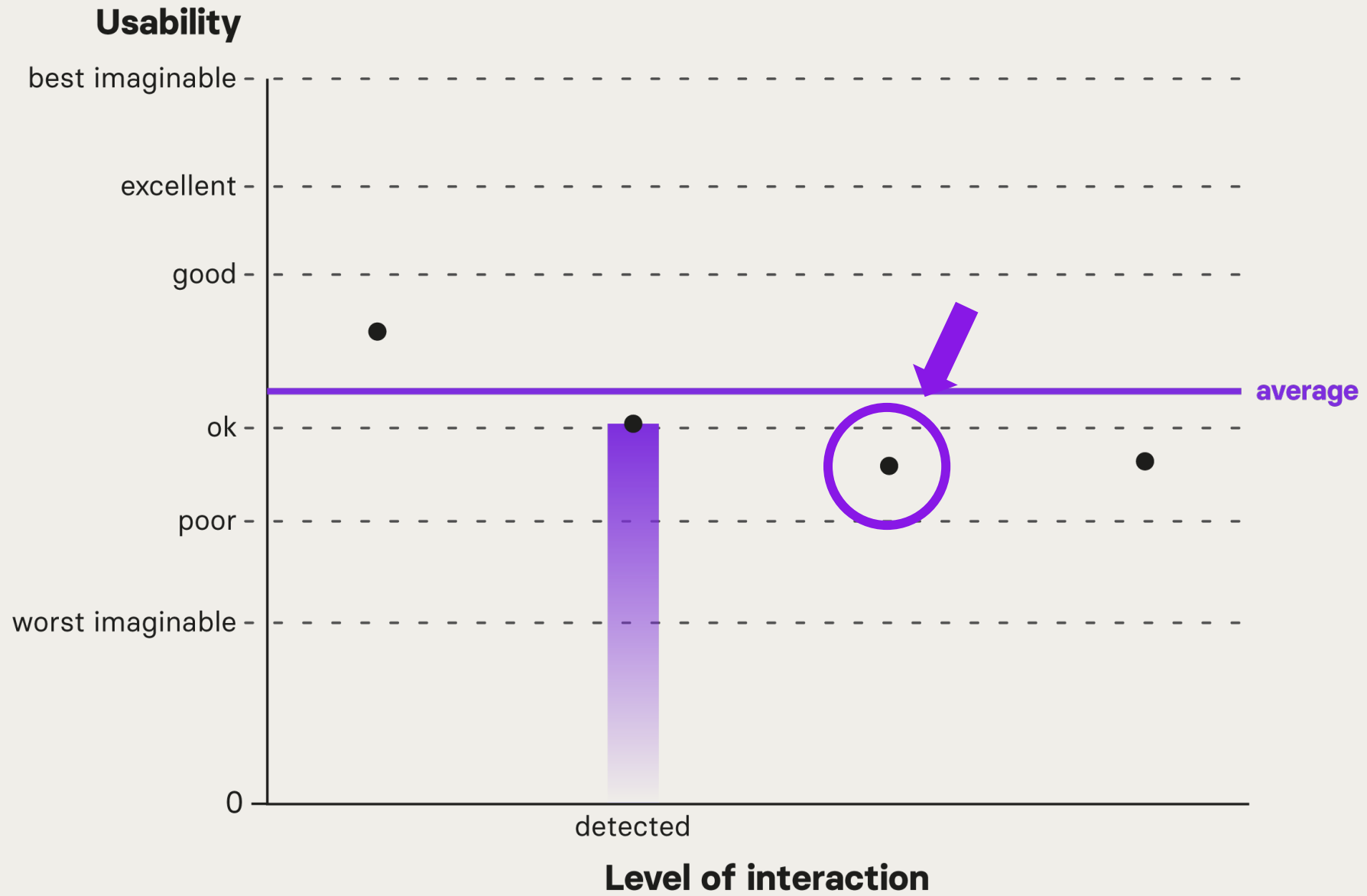
User Experience

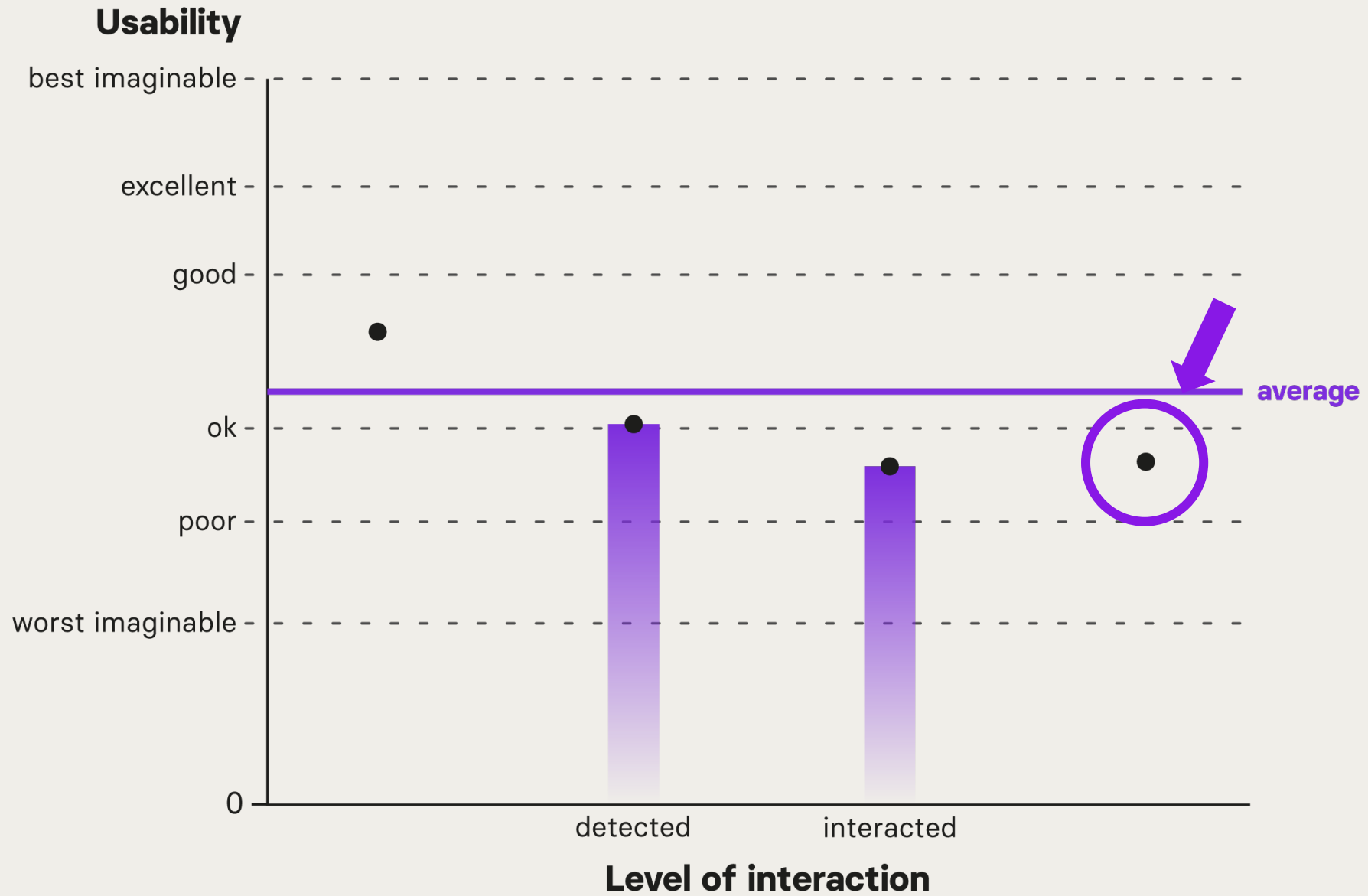
A person's actions, sensations, considerations, feelings, and sense-making before, during and after interaction.

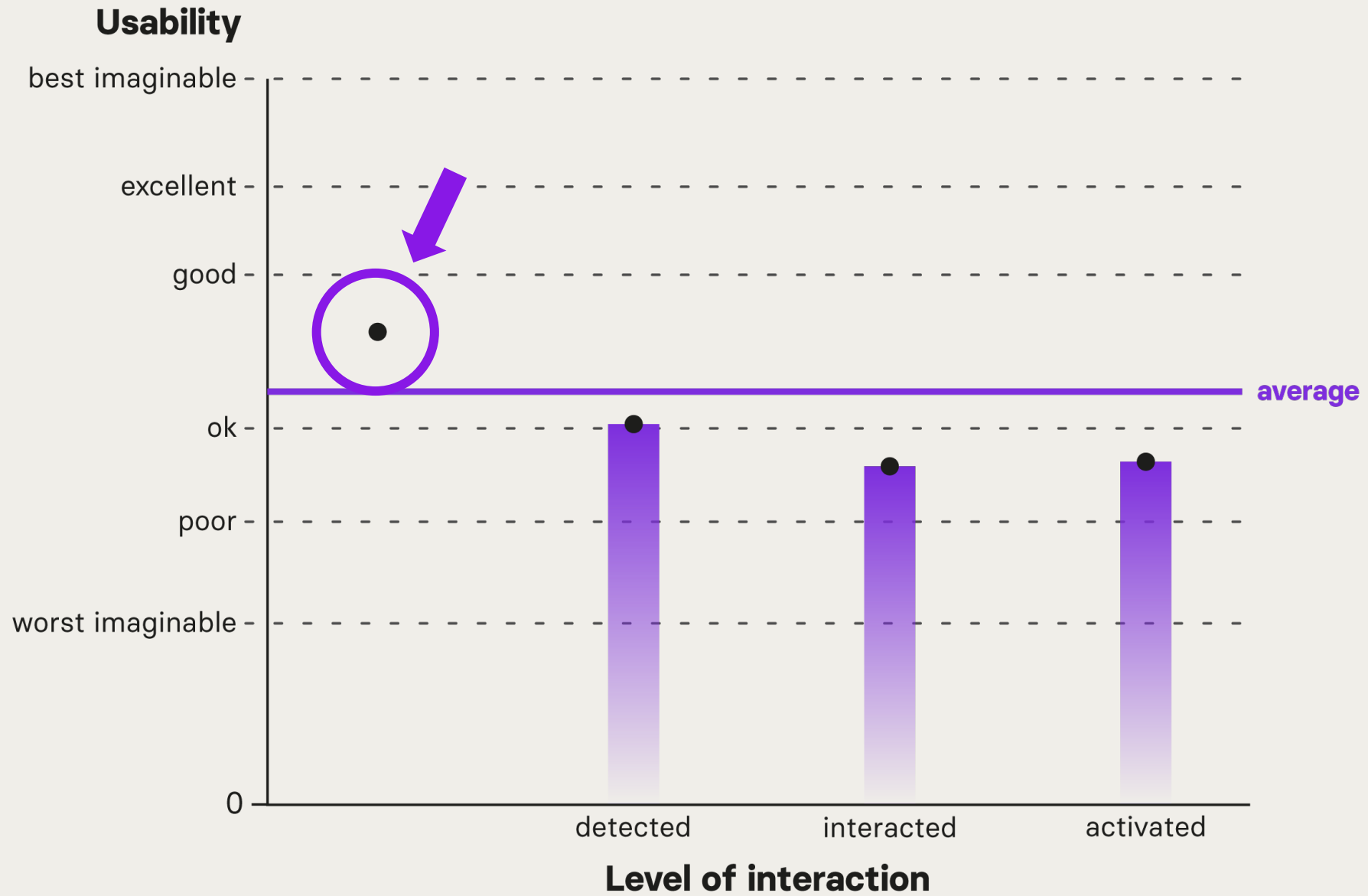


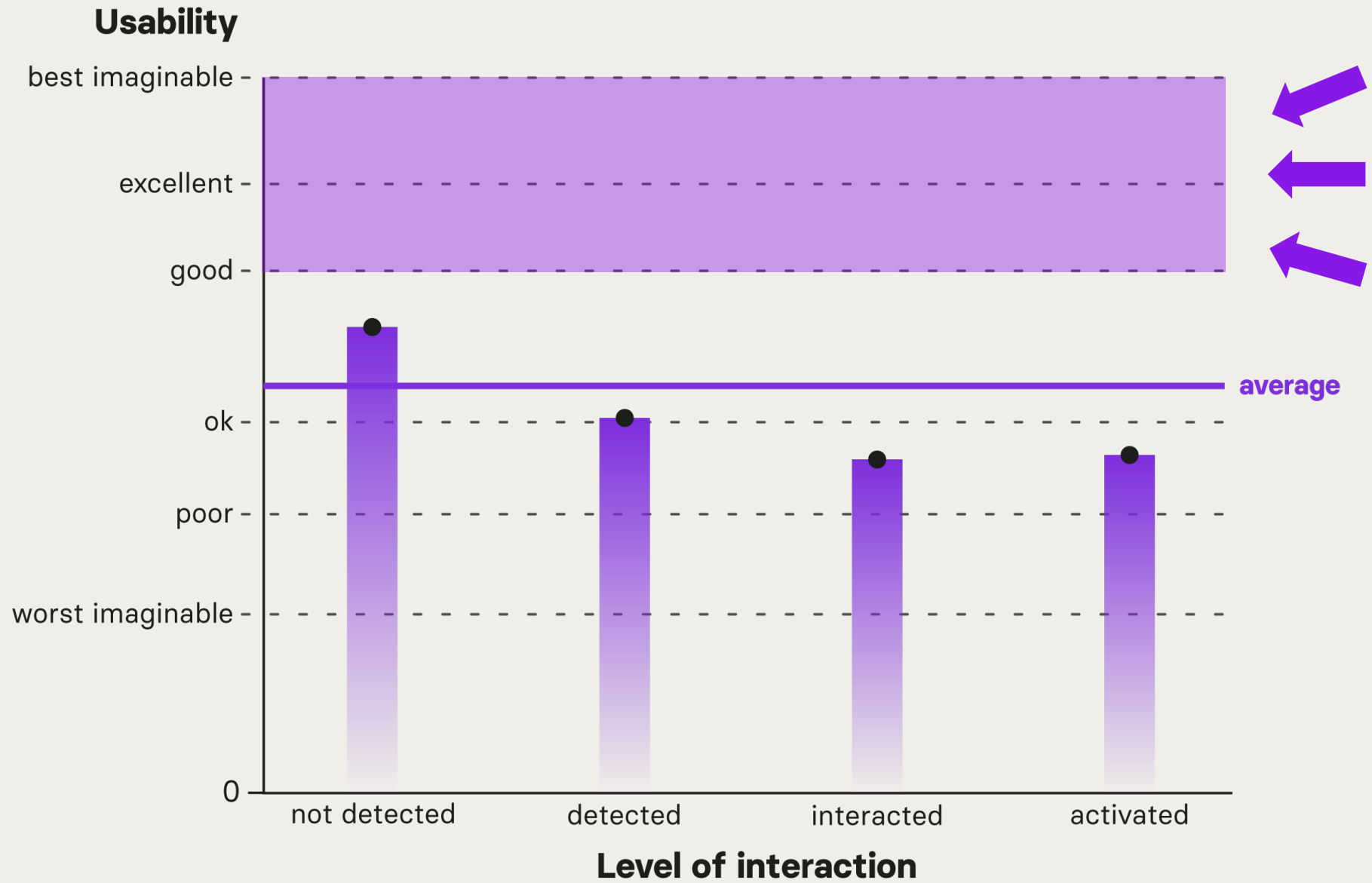












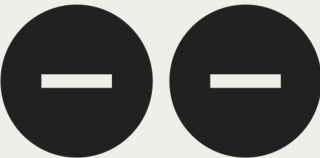
Opinion

"I wonder how such an overlay would really work, how can software do that? [...] A website is such an individual product that I think it's almost impossible to put something clever on top of it."

– Participant T10

Post-Study

Navigation Preferences



No comment



Browser/System Settings +
Access Device



Opinion

"After a brief investigation, I haven't found anything suitable for me. When I'm surfing a website, I don't want to spend half an hour going through a list of what I can activate."

– Participant T10

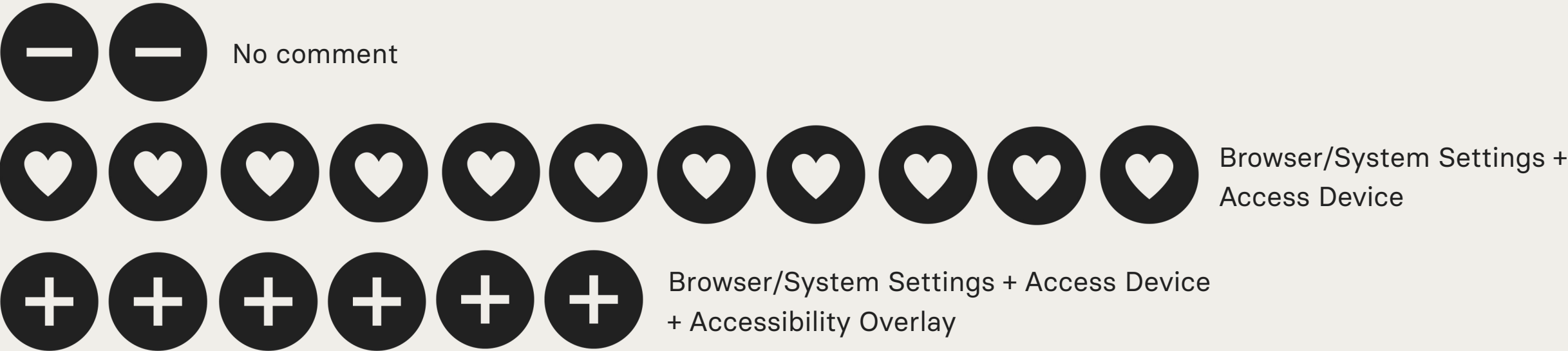


Opinion

“Personally, I prefer to use system and browser options because then it is simply a global setting and does not have to be readjusted from website to website.”

– Participant T11

Navigation Preferences





Opinion

"I have set my accessibility settings so that it works for me. But when navigating websites, I sometimes change these settings or use accessibility overlays because then I don't have to change my system settings again when I go to another website."

– Participant T21



Opinion

“For example, if I’m in a hotel on someone else’s computer, I can imagine using the accessibility overlay [...] but I think I’ll fail because not everything is so intuitive. However, it’s probably better than nothing. But I don’t see any point in using it on my computer now.”

– Participant T4





Opinion












"If I'm only looking for a single piece of information then it would be too complicated for me to take an extra look at the accessibility overlay. But if there's an accessibility overlay on a site that I use often, then I'd be up for it straight away if the website itself isn't quite optimal yet."

– Participant T8







Navigation Preferences




No comment



Browser/System Settings +
Access Device



Browser/System Settings + Access Device
+ Accessibility Overlay



Accessibility Overlay



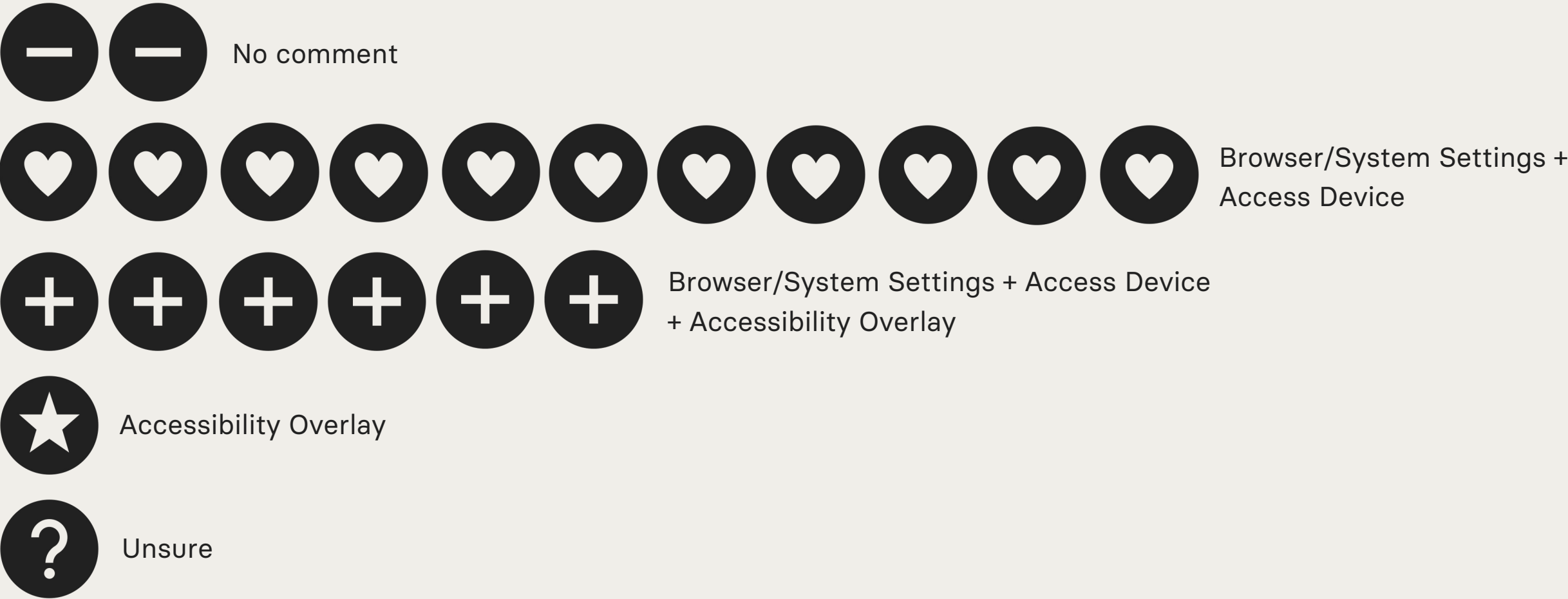
Opinion

"I would like it if [the accessibility overlay] was on every website. That would be a help. I could imagine that. Then I can also make settings quickly on other devices. You're not necessarily always on the same device."

– Participant T2

Disclaimer: This participant has never noticed an accessibility overlay on any of the websites.

Navigation Preferences





Opinion

"It always depends on how much energy I have and what I have planned for the rest of the day. Sometimes it's just too hard for me to click through and search, especially if every accessibility overlay is different. Then I'm also disappointed when I stumble across one that doesn't work so well."

– Participant T14

**Individuals with impairments
must be incorporated into the
design, development and
decision process.**

Opinion

“Maybe I’m just not very experienced, but then [Accessibility Overlays] have to be so good that I can use them intuitively and don’t have to take an extra course to be able to use them.”

– Participant T18

3.

The debate about
Accessibility Overlays should
not only exist in a vacuum.

why?

Result

In Favor of Accessibility Overlays

- 1. Positive response bias**
- 2. Strong desire to explore new solutions**
- 3. Desire for access**

What can we do?

The Different Discourses

The **legal** discourse

The **web accessibility** discourse

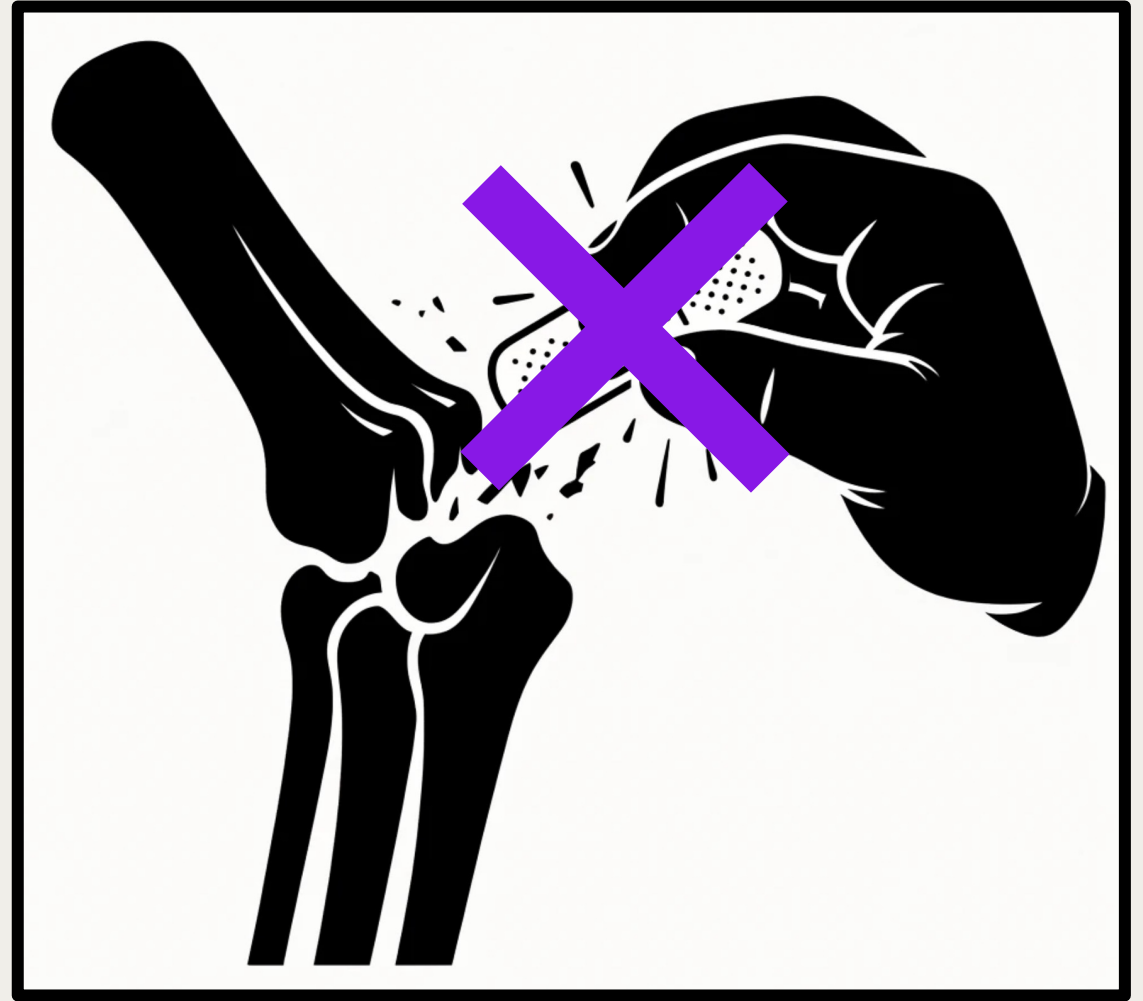
The **digital divide** discourse

The **social construction of disability** discourse

It is the responsibility of society to ensure that the internet and web are accessible.

While there may be a general desire for a more equal and fair society, the deeper social and cultural structures that contribute to inequality are often overlooked.

Summing up.



- 1. Do not prioritise some users' experience over the deterioration of others.**
- 2. Nothing about us, without us!**
- 3. The debate about Accessibility Overlays should not only exist in a vacuum.**

Further information on the thesis

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