

# An Intersectional Perspective on Web Accessibility

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**Abstract:** Socially marginalised groups experience hostility in daily life, and hostility online adds to psychological pressure. For example, hate speech, typically defined as attacks on an individual or socially marginalised group, may impact access to web content for socially marginalised groups. In addition, rendered invisibility, for example being unable to choose your gender in a web form, may act as a psychological and practical barrier to accessing web content for groups, such as genderqueer, intersex and transgender persons. Research has yet to investigate the intersectionality of web accessibility. Preliminary results from semi-structured interviews with a select group of persons that experience multiple forms of discrimination suggest that marginalized individuals expect to experience oppressive content and consider oppressive content as a part of interacting with the web. In this paper, we examine a variety of oppressive mechanisms, including ableism, racism, and transphobia, and how in combination they relate to accessing and using web content. We argue that by ensuring the accessibility of web content substantively, future researchers and practitioners can promote a more universally accessible web. By taking into consideration experiences of hostility, web developers can better support access to information and communication on the web for everyone.

## 1 Introduction

Research on web accessibility has typically focused on the promoting and ensuring the usability of web content for persons with disabilities as a means for achieving social inclusion. Web accessibility relates to the legal principle of equal opportunity, which, according to legal scholars, obligates service providers to take positive steps to prevent discrimination by designing web content for use by persons with disabilities. Contiguously, architects, technology developers, and disability rights advocates began to argue that information and communication technology (ICT) should be designed for the broadest possible population, i.e., for the universal design of ICT.

While research in a variety of disciplines such as cognitive and clinical psychology, anthropology and sociology have empirically examined gender

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discrimination in a variety of contexts, this article focuses in particular on the intersectional identities of persons that experience multiple forms of discrimination based on the combination of characteristics such as disability, gender, age, or race. Thus, research has yet to examine fully the intersectionality of web accessibility or the social barriers that occur at the intersection of multiple forms of discrimination, which affect access to and use of web content. In other words, research has typically focused on the usability of web content for persons with specific impairments (e.g., the blind and partially sighted or deaf and hard of hearing) and has yet to investigate substantively the experiences of persons belonging to multiple socially marginalised groups. In this paper, we use an interdisciplinary perspective that combines computer science with disability and gender studies to examine the experiences of people that face multiple forms of discrimination online and investigate a variety of oppressive mechanisms including ableism, racism, and transphobia. This paper asks, “How, in combination, do persons experience multiple forms of discrimination, which act as barriers, in accessing and using web content?”

To illustrate the point using a hypothetical case, consider the experiences of a black gay man with a sight impairment. If information about their sexual identity could put them at risk, a gay community webpage that is designed to be compatible with screen reader would be accessible in a technological sense, but the audio broadcasting done by the reader would make the page inaccessible from a security standpoint. Considering this, one could argue that screen reader compatibility alone is not enough to make this content usable for persons experiencing multiple forms of discrimination. There would need to be a way to access the content without the risk of someone eavesdropping.

If the page has implemented alternatives to the screen reader, the audio broadcasting is no longer an issue. However, there is still the risk of someone seeing what page is being accessed. Logging out and leaving the page might not take much time, but in a situation where you have few seconds to react, it’s not a viable option. Some pages have implemented a panic button that instantly logs the user out and redirects the browser to an “innocent” looking webpage, like a major newspaper. But if the person has a sight impairment, they might not be aware of the button, since the awareness of the button relies heavily on observing the visual queue. Even if the user is aware of the button, there is still the issue of navigating the page’s structure fast enough to get back to the button in time.

By taking into account the context in which a person lives, we can make the web more accessible. However, security is not the only issue in the example. Assuming that the security measures are in place, there is still the question of what happens once a person is accessing the content. If you ask a gay black man what messages he receives from other users on a gay web community, you can be fairly certain that one of the types mentioned will be a messages containing one single question: “Is it true what they say about black men?”

In this example, ableism manifests in the assumption that people with disabilities are a homogenous group, homophobia manifests in the threat of physical abuse and racism manifests in its most blunt and psychologically violent way. One can see how three separate oppressive mechanisms work together and reinforce the barriers for accessing content on the web.

This article explores the experiences, such as those presented in the hypothetical case above, by analysing preliminary results from semi-structured interviews with a select group of persons that experience multiple forms of discrimination. The results suggest that individuals that are members of multiple marginalized groups expect to experience oppressive content, and consider oppressive content as a part of interacting with the web.

This article proceeds in five sections. First, this article frames the examination the intersectionality of web accessibility by reviewing previous research on web accessibility, universal design and intersectionality. Second, this article presents the methods, data and analysis used to examine the experiences of persons that experience multiple forms of discrimination in accessing and using web content. Third, this article analyses the preliminary results from semi-structured interviews with participants selected because of their experiences with the intersectionality of web accessibility. Fourth, this article discusses the results in light of previous research in web accessibility and universal design. Fifth, this article concludes by summarizing the results and providing recommendations for future research.

## **2 Analytic Framework**

This section presents different analytical perspectives for examining the intersectionality of web accessibility and reviews research on web accessibility, universal design, and intersectionality. Research on web accessibility provides a useful framework for examining the social barriers that prevent persons with disabilities from enjoying the web on an equal basis with others. Research on universal design provides a useful framework for extending web accessibility beyond disability to include the broadest possible population, and research on intersectionality provides a framework for examining the experiences of people that are subject to multiple forms of discrimination.

### **2.1 Web Accessibility**

With the early adoption of the web in the US and Europe in the mid-1990s, the World Wide Web Consortium (W3C) established the Web Content Accessibility Guidelines (WCAG), an international standard for web accessibility. WCAG soon spread internationally as a practical and legal solution for achieving web accessibility (Giannoumis 2015a). By the late 1990s, interest organizations had attempted to apply disability antidiscrimination legislation to ICT and the web in an effort to ensure accessibility (Giannoumis 2015b). Ensuring accessibility provides a means for promoting equality between ICT users with and without disabilities and in effect remediating the digital divide (Ellis and Kent 2015, Goggin 2015, Jaeger 2015).

Research on web accessibility has focused on the outcomes of web accessibility policies, such as WCAG. This research has examined the accessibility of web content in specific sectors, such as public libraries (Yu 2002, Stewart et al. 2005, Tatomir and

Durrance 2010, Yi 2015), education (Johnson and Ruppert 2002, Klein et al. 2003, Green and Huprich 2009), transport (Lazar et al. 2010), private enterprise (De Andrés et al. 2010), financial services (Williams and Rattray 2003) and health services (Ritchie and Blanck 2003). This research demonstrates that many private sector service providers have yet to remove barriers to accessing web content.

In addition, research has assessed web accessibility in public services including federal and regional governments in the United Kingdom (UK) and US (Jaeger 2004a-b, Jaeger 2008, Rubaii-Barrett and Wise 2008, Kuzma 2010, Olalere and Lazar 2011, Bertot et al. 2012). This research demonstrates that, although public agencies maintain a clear social responsibility for providing accessible information, service providers have yet to remove barriers that persons with disabilities experience in accessing web content.

This article emphasizes the concept web accessibility as a framework for examining the barriers experienced by persons that are subject to multiple forms of discrimination. Social barriers limit the participation of persons with disabilities on the web and this article examines social barriers from an intersectionality perspective.

## 2.2 Universal Design

While web accessibility is typically associated with the removal of barriers so that persons with disabilities can use the web, recently scholars have begun to adopt a broader conceptualization of web accessibility. In a recent article, Petrie et al. (2015) posed a unified definition of web accessibility and argues that web accessibility means ‘all people, particularly disabled and older people, can use websites in a range of contexts of use, including mainstream and assistive technologies; to achieve this, websites need to be designed and developed to support usability across these contexts’. Similarly Persson et al. (2014) define accessibility as ‘the extent to which products, systems, services, environments and facilities are able to be used by a population with the widest range of characteristics and capabilities (e.g. physical, cognitive, financial, social and cultural, etc.), to achieve a specified goal in a specified context.’

The scope of the definitions provided by Petrie et al. (2015) and Persson et al. (2014) are similar to the definition of universal design posed in the United Nations Convention on the Rights of Persons with Disabilities (CRPD). According to the CRPD, universal design ‘means the design of products, environments, programs and services to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.’

The primary contrast between web accessibility and universally designed web content is the scope of application (Persson et al. 2014, Abascal et al. 2015, Brown and Hollier 2015). While web accessibility aims to ensure the usability of web content specifically for persons with disabilities, universally designed web content aims to ensure the usability of web content for the broadest possible populations. While the analytic distinction between web accessibility and universal design is useful point of departure for the analysis in this article, in practice the benefits of

web accessibility are typically shared among a broad range of users, i.e., both people with and without disabilities. In the words of Blanck (2014), '[universal design] is well beyond a minimum standard of accessibility.'

A universal design approach, provides a broader basis for promoting and regulating the design of web content. According to the Norwegian Ministry of Children and Equality's Action Plan for universal design 'The government wants to get away from a way of thinking in which the individual is defined as the problem and in which special measures for people with disabilities are the main solution' (BLID 2009).

This article emphasizes the application of universal design principles in promoting the usability of web content for the broadest possible population. Thus, universal design, provides a useful approach for examining the experiences of persons that belong to multiple socially marginalised groups. This article explores conceptualizations of universal design by examining the barriers that persons subject to multiple forms of discrimination experience.

## 2.3 Intersectionality

While research has yet to fully examine web accessibility from an intersectionality perspective, scholars of intersectionality argue that race, gender, class, ability, or sexuality do not exist in isolation and therefore should not be examined separately but as part of an individual's lived experience (Crenshaw 1991, Schiek and Lawson 2011, Risam 2015). According to Schiek and Lawson (2011), intersectionality as a concept was first introduced to articulate the distinct experiences of black women, which differ from the experiences of both black men and white women. Research by Crenshaw (1991), criticized contemporary politics for neglecting the racialized experiences of black women on one hand and neglecting their gender on the other. While the concept of intersectionality has a tradition in a variety of disciplines including law, women's studies and sociology, computer scientists have yet to integrate intersectionality into examinations of web accessibility or universal design.

The UN and EU have acknowledged the relevance of intersectionality in terms of antidiscrimination – where web accessibility has its roots – and have adopted a concept similar to intersectionality, "multiple discrimination", which refers to different forms and grounds of discrimination (Schiek and Lawson 2011). Some scholars differentiate between forms of multiple discrimination where each ground of discrimination can be distinguished and intersectional discrimination where the grounds for discrimination cannot be distinguished (Schiek and Lawson 2011).

This book article adopts an intersectional approach to examining web accessibility because multiple discrimination typically suggests an 'adding up' of separate forms of disadvantage, which contrasts with the complexity of an individual's lived experience. This article aims to establish initial evidence for adopting an intersectional approach to web accessibility by examining the lived experiences of persons affected by intersectional disadvantage. This article additionally provides an opportunity for web accessibility researchers to reflect on

the interdisciplinary contribution of research on intersectionality and promote a deeper and richer conceptualization of web accessibility. The focus of this article is on the disadvantage that occurs at the intersection of gender, race and disability. The experiences of those in more privileged or advantaged intersections (e.g. white, non-disabled men) is therefore not investigated here.

### 3 Methods

To explore the intersectionality of web accessibility, this article will analyse empirical data from semi-structured interviews with persons experiencing multiple forms of discrimination. This paper uses qualitative methods to interpret prior models of web accessibility and aims to provide new explanations to extend previous research. This article uses qualitative data and analysis to examine the experiences of individuals that experience multiple forms of discrimination to elaborate on the role of intersectionality in web accessibility as a potentially mediating factor for promoting and ensuring the universal design of web content.

It would be impossible to comprehensively account for all mediating factors associated with intersectionality and web accessibility. This article uses a purposive sample of selected participants, deliberately recruited to explain and question established relationships between web accessibility and intersectionality. The participants were selected because they belonged to multiple marginalized groups and experienced discrimination on the web. In addition, two of the authors who acted as interviewees have intersectional identities. Table 1 provides a descriptive summary of the interview participants. As all of the participants are members of more than one marginalized group, the total number of participants listed in Table 1 is larger than the number of participants interviewed.

**Table 1** Descriptive summary of interview participants

Characteristic / Identity	Number of Participants
Gendered	2
Disabled	2
Racialized	2

Participants for this paper provide a locus of investigation for web accessibility within the lives and experiences of persons who are subjected to multiple forms of discrimination.

This article presents a preliminary analysis of three interviews conducted in Norway, and England. The semi-structured interviews provided data on the perspectives of persons that experience multiple forms of discrimination. Participants were recruited based on their knowledge and lived experience as members socially marginalised groups. The interview guide covered a broad range of questions related to the participants’ everyday habits on the web, and their

encounters with oppressive content. The interview transcripts were analysed by identifying salient themes as they pertain to conceptualizations of web accessibility and universal design.

While this paper presents the tentative findings of the study, further data collection and analysis is planned in 2015 and 2016 where additional interviews will be conducted with persons that experience multiple forms of discrimination in Norway.

## 4 Analysis

The results of the semi-structured interviews suggest that the social aspects of the web are important to most of the participants. Although all the participants use the web to access other kinds of information, most of the day-to-day use of the web involves social media or other kinds of social forums. Some of the participants expressed a discomfort with social media, due to the amount of information shared by others as well as themselves. However, the discomfort did not seem to be severe enough to make an impact on the way they were accessing social media.

Several of the participants talked about the freedom of non-disclosure on the web. Being able to choose what people know about you, and who knows what about you, was described as freeing by several of the participants.

*'In the real world you might understand that my hearing isn't too good so that you take extra care of me, or don't talk to me at all. But on the web I'm just a part of the gang'*

(Participant TRS)

When questioned about offensive content the participants said that they had come to expect different kind of oppressive content on the web, and because of this it did not cause any serious distress. The participants described various reactions and tactics when encountering offensive content. Strategies varied from leaving the site, to completely avoiding pages where the participant expected to encounter oppressive content.

*'I encountered a lot of very uncomfortable articles. They were like...you know, they were using the wrong pronoun, wrong name and everything. And as a trans person myself, I felt very uncomfortable. So I just stopped accessing those kind of things, don't want to take part in the mainstream media or internet world.'*

(Participant OF)

The participant expressed the opinion that it is your own responsibility to stay away from pages where you can expect to encounter oppressive content. Statements like 'I used to get upset,' implying that being upset by the oppressive content is a silly or unnecessary emotional reaction, were present in all of the interviews.

*'In terms of content I don't, I think if I went on a webpage and the content was, if I thought "oh this is shocking" or "why have they written this" or "why is this picture there".. To be honest I'm pretty unshockable if that's a word. So I'd probably say, excuse my language but, "what the hell" and then click the back button, that's the extent to it.'*

(Participant SD)

Some of participants said they would feel pressured ‘to come’ out, and relinquish the freedom of non-disclosure, due to an obligation or need to defend their communities.

*‘What makes me “come out” as deaf? When things happen where deaf people are talked about. When I feel like it’s time to say something. Hard to say something specific, it’s something I consider on an incident to incident basis.’*

(Participant TRS)

The comments sections of web pages, and avoiding them, has been a recurring issue experienced by several of the participants. The comments sections are where participants expect and experience the most outspoken oppressive content. One of the participants in particular, expressed a frustration with the ever-changing design and change in page navigation, which at times would result in involuntary encounters with the comment sections. However, most of the participants thought of these encounters more as annoyances than anything else.

The results of the semi-structured interviews suggest that barriers to access may be broader than conventionally defined in web accessibility and come closer to conceptualizations of universal design. The next section continues by summarizing and discussing the results.

## 5 Discussion

The results suggest that persons with intersectional identities that experience multiple forms of discrimination face barriers in accessing and using web content because of both the format and structure of web content and its substantive character. The results additionally suggest that an element of victim blaming exists in the way the participants interact with the web. The participants argue that when you access a page that you accessed before, you should know whether it can contain offensive content, and act accordingly. Emotional reactions such as anger or distress are typical and accompanied by the expectation that the experience is only one of immediate discomfort. However, in order to avoid further discomfort the participants would leave the page and limit their later access, leading to self-exclusion from parts, or most of the web.

The comment sections stands out in this aspect as a ‘house of horror’ in the world of offensive web content, and the participants stated that in general they experienced it as inconsequential and would seldom cause them to leave the page. Therefore, a tension exists between free speech and hate speech, something reflected in participants’ attitudes towards comments sections.

That the participants choose to limit what they access to avoid offensive content might not be problematic in itself. There would be little sense in accessing a white supremacy blog if one does not want to encounter racism. However, if the experience or expectancy of offensive content is limiting access to parts of the web of public interest, there is a point to be made about the page's accessibility. With this in mind, this article argues that the technological gaze of developers needs to be supplemented with a critical attitude towards possible content.



Models of web accessibility and universal design provide a useful framework for understanding the intersectional identities of the participants. This article argues that because the barriers that the interview participants encounter, particularly oppressive content is a result of marginalisation by society and sometimes cultural assumptions about who should be invited and included in considerations and approaches to web accessibility.

## 6 Conclusion

Considering how often the comments section of websites were mentioned by the participants, future research could usefully explore alternative ways to represent comments that prevents unintentional access, while not limiting free speech. In addition, oppressive content seems to have an effect on the participant's daily interaction with the web. The consequences vary from severe self-exclusion, to immediate but short-lived irritation. Considering this further, research on universal design should include a broader perspective, where the technological gaze is supplemented with an understanding of a person's broader context.

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