

Should I Say “Disabled People” or “People with Disabilities”? Language Preferences of Disabled People Between Identity- and Person-First Language

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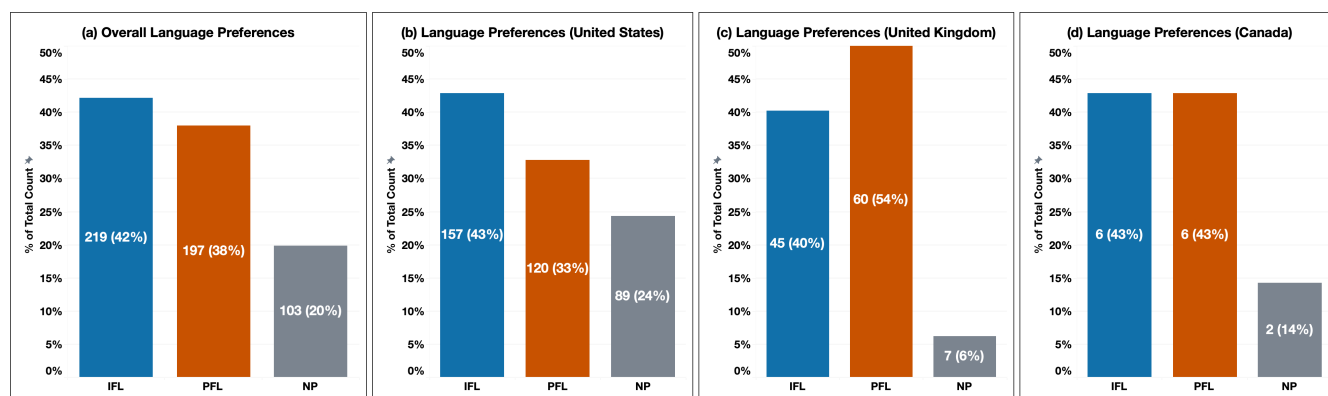


Figure 1: Language preferences of disabled people. (a) shows the overall preferences for United States, United Kingdom, and Canada combined ($N=519$); (b) shows the preferences of disabled people from the United States ($N=366$); (c) shows the preferences of disabled people from the United Kingdom ($N=112$); and (d) shows the preferences of disabled people from Canada ($N=14$). *IFL* stands for “Identity-First Language,” *PFL* stands for “Person-First Language,” and *NP* stands for “No Preference.”

ABSTRACT

The usage of identity- (e.g., “disabled people”) versus person-first language (e.g., “people with disabilities”) to refer to disabled people has been an active and ongoing discussion. However, it remains unclear which semantic language should be used, especially for different disability categories within the overall demographics of disabled people. To gather and examine the language preferences of disabled people, we surveyed 519 disabled people from 23 countries. Our results show that 49% of disabled people preferred identity-first language whereas 33% preferred person-first language and 18% had no preference. Additionally, we explore the intra-sectionality and intersectionality of disability categories, gender identifications, age groups, and countries on language preferences, finding that language preferences vary within and across each of these factors. Our qualitative assessment of the survey responses shows that disabled

people may have multiple or no preferences. To make our survey data publicly available, we created an interactive and accessible live web platform, enabling users to perform intersectional exploration of language preferences. In a secondary investigation, using part-of-speech (POS) tagging, we analyzed the abstracts of 11,536 publications at ACM ASSETS ($N=1,564$) and ACM CHI ($N=9,972$), assessing their adoption of identity- and person-first language. We present the results from our analysis and offer recommendations for authors and researchers in choosing the appropriate language to refer to disabled people.

CCS CONCEPTS

• **Social and professional topics** → **People with disabilities**; • **General and reference** → *Surveys and overviews*; *Empirical studies*; • **Human-centered computing** → *Empirical studies in accessibility*; **Web-based interaction**; • **Computing methodologies** → *Information extraction*.



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KEYWORDS

identity-first, person-first, language, disability, preferences, survey

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1 INTRODUCTION

Words have power. They reflect attitudes that speakers want to exchange [23]. They also shed light on the sensitivity to matters involving social justice and cultural awareness, especially for under-represented and marginalized groups [13], such as disabled people. Several terms, such as “retarded,” are now considered outdated as they assert negative connotations on disabled people [26, 73] and some pejorative terms, such as “crippled” and “gimp,” have been reclaimed by the disability community [1, 59]. Similarly, the debate between identity- (using identity first; e.g., “disabled people”) and person-first language (using people first; e.g., “people with disabilities”) has been an active and ongoing discussion [2, 17, 18, 27].

The American Psychological Association (APA), the American Medical Association, the American Psychiatric Association, the American Speech-Language-Hearing Association, and the Associated Press advocate for person-first language [2, 17, 27]. However, a recent inquiry from Vivanti [70] regarding language usage for autistic people shows that well-intentioned scholars are still unsure of the “right” language to use. Furthermore, Vivanti’s inquiry is particularly relevant to our exploration as the autistic community has long advocated for identity-first language for themselves, contrary to the general recommendation from the APA, which explicitly asks the writers to “put the person first” [3, 27]. Hence, the preferences of the disability categories within the disability community should direct the language used to refer to that particular group [9, 26, 43, 51]. Additionally, as societies evolve, these preferences may become obsolete over time. (For example, the National Federation of the Blind (NFB) [44] has, in recent years, started advocating for “blind and low-vision” in place of “visually impaired.”)

To understand the preferences of disabled people in the usage of language that refers to them, we designed and distributed a survey globally. Specifically, the survey recorded the respondents’ preference between *identity-first language*, *person-first language*, and *no preference*. Additionally, we asked the respondents for the reasons behind their preferences. We recorded the timestamps of the survey responses to track the language preferences over time. As of the date of writing this paper, our survey had responses from 519 disabled people, representing nine disability categories, six age groups, and 23 countries. Our findings show that, overall, disabled people prefer identity-first language (49.0%) compared to person-first language (33.0%). We also explored the intra-sectionality and intersectionality of disability categories, gender identity, age group, and country on language preferences. We found that language preferences vary both within and across these factors. For example, people with mobility disabilities prefer person-first language (46.2%) over identity-first language (39.4%). Our qualitative assessment of the responses shows that disabled people may have multiple or no language preferences. To make our survey data available to the public, we created an interactive and accessible web platform

displaying live results from the survey. Furthermore, the web platform enables users to filter data by any combination of disability categories, gender identities, age groups, countries, and years to support a granular information extraction.

As a secondary exploration, to shed light on the language adoption at academic venues, we analyzed the abstracts from 11,536 publications at ACM SIGACCESS Conference on Computers and Accessibility (ASSETS; $N=1,564$) and ACM Conference on Human Factors in Computing Systems (CHI; $N=9,972$) from 2000- to 2021 (20 years, excluding 2001 and 2003). Our results show that combined and separately, both the conferences employed a higher usage of person-first language (54.4% combined; 52.6% for ASSETS and 57.1% for CHI) compared to identity-first language (45.6% combined; 47.4% for ASSETS and 42.9% for CHI). Altogether, our findings indicate that person-first language is used more frequently despite disabled people showing a higher preference for identity-first language.

The main contributions of our work are as follows:

- (1) Empirical results from a survey of 519 disabled people from 23 countries, showing their preferences between identity- and person-first language. Overall, 49% of disabled people preferred identity-first language, 33% of them were in favor of person-first language, and 18% had no preference.
- (2) Empirical results from analyzing the abstracts of 11,536 academic publications published at ACM ASSETS ($N=1,564$) and ACM CHI ($N=9,972$) from the past 20 years, showing the total count of identity- and person-first terminologies used per year. Overall, the publications used person-first language 9.7% and 24.9% more than identity-first language at ASSETS and CHI, respectively.
- (3) Accessible web platform, showing live survey results. The web platform enables users to filter their language preferences by any combination of disability categories, age groups, gender identities, countries, and years. We present the design, functionality, and implementation of our system. Additionally, we publish our web platform, making it publicly available at <https://disabilityterminology.athersharif.com/>.

2 BACKGROUND AND RELATED WORK

We review literature from Disability Studies on the discussion of using identity- versus person-first language to refer to disabled people. Identity-first language (IFL) places the identity first, acknowledging the disability of a person as their defining characteristic (e.g., “disabled person”). In contrast, person-first language (PFL) emphasizes the person first and then their disability (e.g., “person with a disability”). We also review prior work on disability language preference surveys and analysis of accessibility-related academic publications.

2.1 Identity- Versus Person-First Language in Disability Studies

Disability Studies is an interdisciplinary field that explores the political, intellectual, and cultural dimensions of disability in society [21, 29, 33]. Several scholars and researchers have contributed to the discussion of using identity- versus person-first language to refer to people with disabilities. As of the date of this writing, Semantic Scholar [65], a search engine for academic publications,

shows 556 results for a search query containing the terms “person-first,” “identity-first,” and “disability” (all the words appearing at least once anywhere in the publication text). We only explored the publications relevant to our work.

Identity-first language (IFL), which emphasizes the disability identity of the person, can help reclaim once pejorative terms (such as “crippled”) used for disabled people [1, 59] and can be instrumental in driving social change [26, 39]. For example, most recently, Netflix [45], a popular streaming service, released a documentary titled “Crip Camp” [36, 54], which is an indispensable film that sheds light on the history of the disability rights movement [24, 25], highlighting the inequities disabled people face in society. The National Federation for the Blind [44], which is a national advocacy organization representing blind and low-vision (BLV) people, elected to use IFL to refer to BLV individuals in its 1993 resolution [46], stating that person-first language “implies shame instead of true equality” [16, 17]. Similarly, the autistic community is a strong proponent of using IFL for autistic people [8, 10, 34, 35, 50], expressing that IFL encourages society to acknowledge and celebrate them as autistic individuals [35, 50, 52]. Additionally, IFL can help increase public visibility into the stigma disabled people experience as an underrepresented minority group and assist in reducing that stigma to build a more inclusive society [8].

On the other hand, person-first language (PFL), which recognizes the person before their diagnostic label, is the most widely-used language style [2, 17, 27, 49, 66]. One of the first scholarly works to advocate for PFL was by Wright [75], who suggested that the *person* should be the primary focus in language choices to eradicate the dehumanizing language used to describe disabled people throughout the twentieth century [2]. Since then, people and organizations have widely used PFL with well-intended goals of attenuating the stigma associated with disabilities [27, 66]. (However, several scholars argue that, although well-intended in its original proposition, PFL may have overcorrected to accentuate this stigma, particularly in scholarly writing [27, 31, 66].) PFL’s wide adoption includes its usage in the Americans with Disabilities Act (ADA) [67, 74] and recommendations of use in academic writing by numerous style guides, including the American Psychology Association (APA), American Medical Association, American Psychiatric Association, American Speech-Language Hearing Association, and Associated Press [2, 17, 27].

While PFL is employed widely by several organizations to avoid daily discourse [17], disability rights advocates and activists promote IFL [2, 40]. However, several scholars and researchers have identified the need to utilize both appropriately, claiming that a singular linguistic model is non-representative of the entire disability community [15, 34, 43, 51, 61]. Therefore, disability groups should direct the language that describes their respective communities [9, 26, 43, 51]. We are sensitive to this discussion and acknowledge that each individual may have a unique language preference, which may or may not align with the consensus among the members of their respective disability category. We also note that at least one of the authors of this work identifies as a disabled person. In our work, we seek to gather insights into the language preferences of disabled people, paying close attention to avoid any of our personal biases and beliefs on the matter.

2.2 Disability Language Preference Surveys

Several researchers have administered surveys with disabled people to draw inferences about their experiences and language preferences [6, 22, 37, 38, 48, 60]. Lister *et al.* [38] conducted surveys with 723 disabled students to investigate their language preferences for communication in higher educational institutions, finding that students were uncomfortable with terminologies addressing them as “disabled” and that language preferences diverged across contexts and demographics of students. They recommended exploring differential and inclusive approaches to find the appropriate language rather than focusing on a single model. Levy *et al.* [37] surveyed 63 disabled people to investigate the respectfulness of the terminologies used in ASSETS publications to refer to disabled people, reporting that their respondents found the terms “disabled people” and “differently-abled” the most respectful and disrespectful, respectively. In a similar exploration, Fernald [22] explored the differences between American disability terminologies and the terminologies used in other English-speaking countries by surveying 26 disability-related professional and advocacy organizations, discovering disparities in the preference of disability language between different countries.

Additionally, Bickford *et al.* [6] explored the preferences of 100 blind and low-vision people on disability terminology, albeit they used interviews to record their participants’ preferences. They found that 37% of the individuals interviewed did not have a preference, and among those who did, 76% favored identity-first terminologies.

Our work draws inspiration from Lister *et al.*’s [38] recommendation of utilizing diverse approaches to determine the appropriate language to refer to disabled people. Additionally, we follow Bickford *et al.* [6] in exploring a polychotomous classification of preferences (including “no preference” as an option), as opposed to using the dichotomy of choices between IFL and PFL. However, in contrast to these surveys, our survey is the first scholarly work to perform all of the following in combination: (1) Identify the language preferences (IFL, PFL, no preference, or multiple preferences) of disabled people representing at least one of several disability categories; (2) explore intersectionality and intra-sectionality of disability category, gender identity, age, country, and year in determining language preferences; (3) examine the temporal evolution of language preferences; and (4) display live results from the survey through an interactive website that enables users to filter their query by any combination of the factors mentioned above.

2.3 Analyzing Accessibility-Related Academic Publications

Researchers have analyzed text from academic publications to investigate matters in accessibility research [5, 12, 37, 42, 62]. Most recently, Levy *et al.* [37] conducted a qualitative literature review of 106 papers published at ASSETS from 2018- to 2020 (3 years) to understand the terminology used to refer to disabled people. They found that authors used PFL terms more than IFL terms. However, as they stated, their exploration was only preliminary and contained a small, non-representative sample size. Mack *et al.* [42] analyzed 835 technical papers published at ASSETS and CHI, reflecting on the growth and history of the field of accessibility. Their results

Table 1: Overview of demographics for our $N = 491$ participants (after exclusion) per country, further classified by disability category, gender identity, and age group. N is the total number of participants and % is the percentage compared to the total number of participants. For the “overall” column, the % is shown as “-,” naturally assuming it to be 100.

	<i>Overall</i>		<i>United States</i>		<i>United Kingdom</i>		<i>Canada</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
Overall	491	-	365	74.3%	112	22.8%	14	2.9%
By Disability Category (DSB)								
Mobility	104	-	59	56.7%	42	40.4%	3	2.9%
Visual	248	-	235	94.8%	7	2.8%	6	2.4%
Cognitive	112	-	72	64.3%	34	30.4%	6	5.4%
Learning	36	-	24	66.7%	11	30.6%	1	2.8%
Neurological	53	-	30	56.6%	22	41.5%	1	1.9%
Auditory	50	-	39	78.0%	8	16.0%	3	6.0%
Chronic Illness	149	-	57	38.3%	90	60.4%	2	1.3%
Mental Health Related	122	-	72	59.0%	44	36.1%	6	4.9%
Other	4	-	3	75.0%	1	25.0%	0	0.0%
By Gender Identity (GND)								
Woman	305	-	211	69.2%	89	29.2%	5	1.6%
Man	137	-	121	88.3%	10	7.3%	6	4.4%
Non-binary	49	-	31	63.3%	14	28.6%	4	8.2%
Prefer not to disclose	7	-	6	85.7%	1	14.3%	0	0.0%
By Age Group								
18-25	61	-	52	85.2%	6	9.8%	3	4.9%
26-35	125	-	96	76.8%	25	20.0%	4	3.2%
36-50	150	-	106	70.7%	40	26.7%	4	2.7%
51-60	88	-	58	65.9%	30	34.1%	0	0.0%
61-70	49	-	38	77.6%	9	18.4%	2	4.1%
71 and older	18	-	15	83.3%	2	11.1%	1	5.6%

show that accessibility research focuses disproportionately on the blind and low-vision (BLV) community. Although their methodology and sample size are plausible, their work did not explore the language used to refer to disabled people.

Our work examines the language used to refer to disabled people by analyzing the abstracts from 11,536 publications (including poster papers and extended abstracts) published at ASSETS and CHI from 2000- to 2021 (20 years, excluding 2001 and 2003¹).

3 PREFERENCES SURVEY

To gather and understand the language preferences between identity- and person-first language, we surveyed 519 disabled people globally. We present our methodology to conduct the survey and results from analyzing the survey responses.

¹ASSETS skipped publications in 2001 and 2003

3.1 Method

We administered an online survey to assess the language preferences of disabled people using a mixed-methods approach. Specifically, we investigated the difference in preferences based on disability category, gender identity, and country of residence using quantitative methods. Additionally, we evaluated the reasons behind their choice of preferences using qualitative methods.

3.1.1 Procedure. Participants took part in our survey online, without supervision. The survey comprised three steps. In the first step, the survey showed the purpose of our study, eligibility criteria, definitions and examples of identity- and person-first language, and data anonymity clause. We collected demographic information from our participants in step two, including their gender identity, pronouns, age, country, disability category, diagnosis, and age of diagnosis. We selected the disability categories by contacting several

Table 2: Overview of language preferences from $N = 895$ observations, further classified by disability category, gender identity, country, and age group. N is the total number of participants and % is the percentage compared to the total number of participants. For the “overall” column, the % is shown as “-,” naturally assuming it to be 100.

	<i>Overall</i>								<i>United States</i>							
			<i>IFL</i>		<i>PFL</i>		<i>NP</i>				<i>IFL</i>		<i>PFL</i>		<i>NP</i>	
	<i>T</i>	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>T</i>	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%		
Overall	895	435	48.6	295	33.0	165	18.4	598	290	48.5	172	28.8	136	22.7		
By Disability Category (DSB)																
Mobility	104	41	39.4	48	46.2	15	14.4	59	24	40.7	24	40.7	11	18.6		
Visual	248	99	39.9	77	31.0	72	29.0	235	94	40.0	70	29.8	71	30.2		
Cognitive	112	80	71.4	18	16.1	14	12.5	72	49	68.1	11	15.3	12	16.7		
Learning	36	22	61.1	9	25.0	5	13.9	24	11	45.8	9	37.5	4	16.7		
Neurological	53	22	41.5	25	47.2	6	11.3	30	12	40.0	14	46.7	4	13.3		
Auditory	50	29	58.0	11	22.0	10	20.0	39	21	53.8	8	20.5	10	25.6		
Chronic Illness	149	65	43.6	69	46.3	15	10.1	57	33	57.9	16	28.1	8	14.0		
Mental Health Related	122	70	57.4	34	27.9	18	14.8	72	41	56.9	17	23.6	14	19.4		
Other	4	1	25.0	3	75.0	0	0.0	3	1	33.3	2	66.7	0	0.0		
By Gender Identity (GND)																
Woman	305	114	37.4	136	44.6	55	18.0	211	85	40.3	78	37.0	48	22.7		
Man	137	54	39.4	45	32.8	38	27.7	121	47	38.8	38	31.4	36	29.8		
Non-binary	49	40	81.6	3	6.1	6	12.2	31	24	77.4	3	9.7	4	12.9		
Prefer not to disclose	7	3	42.9	2	28.6	2	28.6	6	3	50.0	1	16.7	2	33.3		
By Country																
United States	365	157	43.0	119	32.6	89	24.4	-	-	-	-	-	-	-		
United Kingdom	112	45	40.2	60	53.6	7	6.3	-	-	-	-	-	-	-		
Canada	14	6	42.9	6	42.9	2	14.3	-	-	-	-	-	-	-		
By Age Group																
18-25	61	37	60.7	13	21.3	11	18.0	52	32	61.5	10	19.2	10	19.2		
26-35	125	65	52.0	38	30.4	22	17.6	96	51	53.1	24	25.0	21	21.9		
36-50	150	60	40.0	63	42.0	27	18.0	106	44	41.5	39	36.8	23	21.7		
51-60	88	28	31.8	41	46.6	19	21.6	58	17	29.3	23	39.7	18	31.0		
61-70	49	15	30.6	20	40.8	14	28.6	38	10	26.3	16	42.1	12	31.6		
71 and older	18	3	16.7	10	55.6	5	27.8	15	3	20.0	7	46.7	5	33.3		

disability-related advocacy organizations (for transparency, at least one of the authors is disabled and is a member of some of these organizations). Participants were allowed to select multiple disability categories. To appropriately ask our participants which gender identities they relate to, we followed guidelines from [63]. Similar to the disability categories, we enabled our participants to choose

multiple options from choices including “women,” “men,” “non-binary,” “prefer not to disclose,” and “prefer to self-describe.” Our survey displayed an additional text field if participants preferred to self-describe their gender identity(ies).

In the final step, we asked the participants their preference between identity- and person-first language, providing them with the

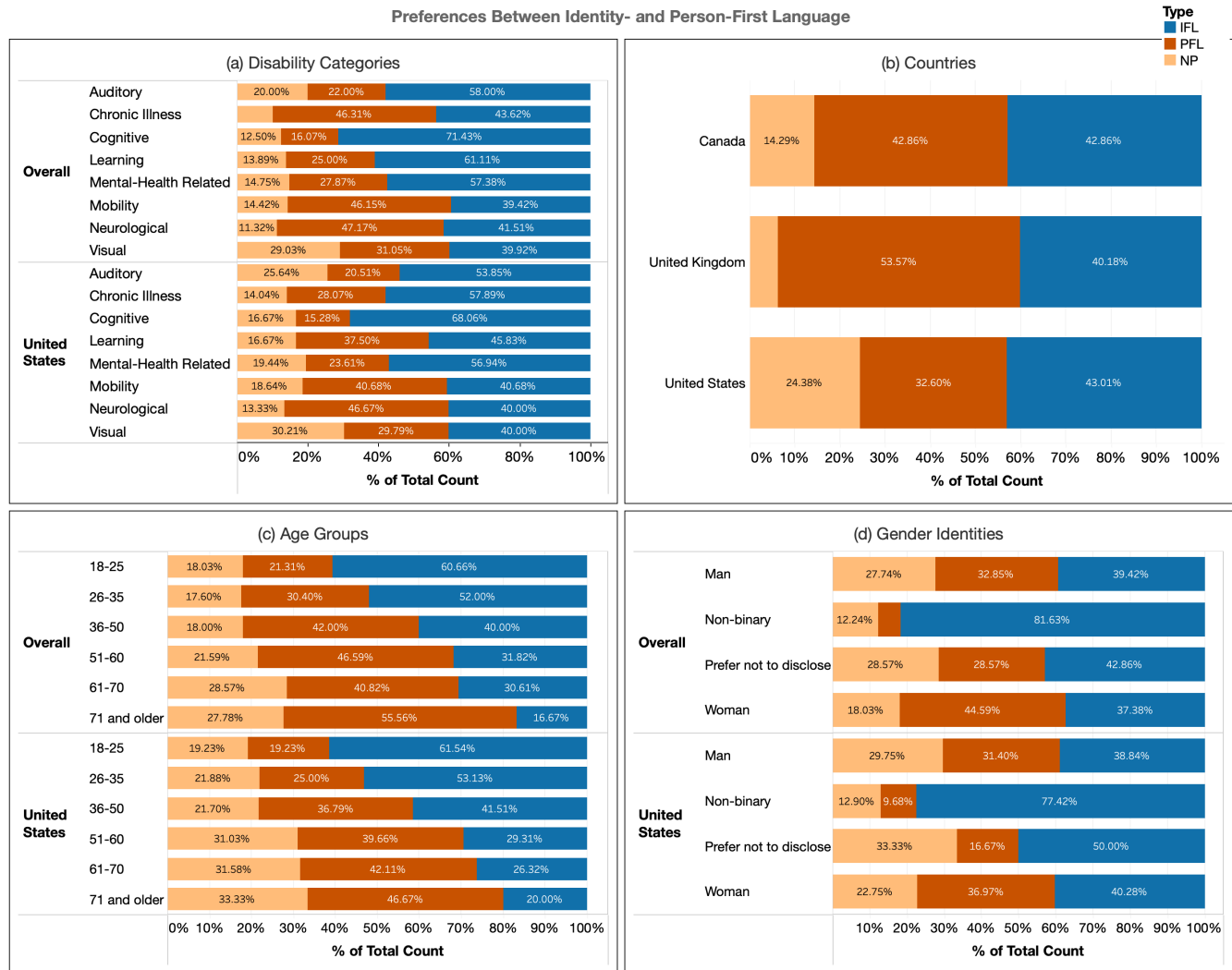


Figure 2: Percentage of total count for language preferences by (a) disability categories, (b) countries, (c) age groups, and (d) gender identities. (a), (c), and (d) are further classified by regions “overall” (United States, United Kingdom, and Canada) and “United States.” IFL stands for “Identity-First Language,” PFL stands for “Person-First Language,” and NP stands for “No Preference.”

additional choice of “no preference.” Finally, we asked the participants to state the reason for their preference in detail. To obtain further contextual insights, we inquired if the participants were familiar with the terms “identity-first” and “person-first” before taking this survey and the language style they encounter the most in their everyday lives. (We provide our survey responses [collected as of the time of this writing—before March 16th, 2022] in the supplementary materials.)

3.1.2 Participants. Our survey respondents (“participants”) voluntarily took part in our online survey, advertised through word-of-mouth, snowball sampling, social media channels (Facebook and Twitter), and email distribution lists for disabled people. We

contacted several local, national, and global disability-related organizations (e.g., The National Federation of the Blind [44]) via contact forms and email addresses mentioned on their websites for advertising the survey. Altogether, 519 participants ($M=42.7$ years, $SD=14.9$) from 23 countries responded to our survey. We excluded the responses from countries that had a total count of fewer than 10 responses.

After exclusion, our participant pool comprised 491 participants ($M=42.8$ years, $SD=14.9$) from three countries: (1) United States ($N=365$); (2) United Kingdom ($N=112$); and (3) Canada ($N=14$). Three-hundred-and-five participants identified as women, 137 as men, and 45 as non-binary. Eleven participants described their gender identity themselves, and seven did not disclose their gender

Table 3: Summary of statistical results from $N=895$ overall (CTY ="United States," "United Kingdom," and "Canada") and $N=598$ specific (CTY ="United States") observations. "DSB" is the disability category, "GND" is the gender identity, and "CTY" is the country. Cramer's V is a measure of effect size [20].

	Overall				United States			
	N	χ^2	p	Cramer's V	N	χ^2	p	Cramer's V
<i>DSB</i>	895	33.95	< .05	.20	598	21.47	.161	.19
<i>GND</i>	895	61.26	< .001	.26	598	13.19	< .05	.15
<i>CTY</i>	895	16.99	< .05	.14	-	-	-	-
<i>Age</i>	895	26.17	< .001	.17	598	37.50	< .001	.25

identity. Table 1 shows a demographic breakdown of participants across the United States, United Kingdom, and Canada.

As we noted in Section 2.1 of this paper, at least one of the authors identifies as a disabled person. To avoid our personal biases and beliefs, we did not partake in our survey.

3.2 Quantitative Evaluation

We used the following factors and levels:

- *Disability Category (DSB)*, within-Ss.: {Mobility, Visual, Cognitive, Learning, Neurological, Auditory, Chronic Illness, Mental-Health Related}
- *Gender Identity (GND)*, within-Ss.: {Woman, Man, Non-Binary}
- *Country (CTY)*, within-Ss.: {United States, United Kingdom, Canada}

Our dependent variables were *Language Preference (PRF)* and *Language Commonly Encountered (LCE)*. To analyze *PRF*, we used a polychotomous representation (0 for "identity-first language," 1 for "person-first-language," and 2 for "no preference") and a multinomial logistic regression model [4, 69] with the above factors and a covariate to control for *Age*. Our statistical model was: $PRF \leftarrow DSB + GND + CTY + Age$. We did not include interactions between our factors as our research exploration centered around investigating the main effects of these factors with *PRF*.

We analyzed *LCE* classifying it dichotomously (0 for "identity-first language" and 1 for "person-first language"), using a mixed logistic regression model [28] with the above factors and a covariate to control for *Age*. Our statistical model was the same as for *PRF*, and we only explored the main effects of these factors with *LCE*.

Additionally, we performed a separate analysis for CTY =United States as a large majority ($N=74.3\%$) of our survey respondents were from the United States. We used the same above-stated model, naturally removing *CTY* from the list of terms. We present our quantitative results for *Language Preference (PRF)* and *Language Commonly Encountered (LCE)*.

3.2.1 Language Preference (PRF). *Disability Category (DSB)* had a significant main effect on *PRF* ($\chi^2(16, N=895)=33.95, p<.05$, Cramer's $V=.20$), indicating that *PRF* differs significantly between the nine disability categories. (Cramer's V is a measure of effect size for χ^2 tests, ranging from 0 to 1. Values greater than .6 demonstrate large effect, between .2 and .6 demonstrate medium effect, and less than

.2 demonstrate small effect.) Disability categories including *Visual*, *Cognitive*, *Learning*, and *Auditory* preferred IFL (39.9%, 71.4%, 61.1%, and 58.0%, respectively) whereas categories *Mobility*, *Neurological*, and *Chronic Illness* preferred PFL (46.2%, 47.2%, and 46.3%, respectively). Figure 2 and Table 2 show the *PRF* percentages across all independent variables used in our analysis. For participants from the United States, *DSB* did not have a statistically significant effect on *PRF* ($p \approx .161$).

We also found a significant main effect of *Gender Identity (GND)* on *PRF* ($\chi^2(6, N=895)=61.26, p<.001$, Cramer's $V=.26$). This result indicates that *PRF* differs significantly between different gender identities. People who identified as *Non-binary* and as *Man* preferred IFL (81.6% and 39.4%, respectively) and people who identified as *Woman* preferred PFL (44.6%). For participants from the United States, *GND* also had a significant main effect on *PRF* ($\chi^2(6, N=598)=13.19, p<.05$, Cramer's $V=.15$), with all gender categories preferring IFL over PFL.

The factor *Country (CTY)* also had a significant main effect on *PRF* ($\chi^2(4, N=895)=16.99, p<.05$, Cramer's $V=.14$). Specifically, people in the United States preferred IFL (43.0%), people in the United Kingdom preferred PFL (53.6%), and people in Canada demonstrated an equal preference.

We investigated the effects of *Age* on *PRF*. *Age* had a significant effect on *PRF* overall ($\chi^2(2, N=895)=26.17, p<.001$, Cramer's $V=.17$) and for participants from the United States ($\chi^2(16, N=598)=37.50, p<.001$, Cramer's $V=.25$), indicating that *PRF* differed significantly across the ages of our participants. Participants 35 or older preferred PFL (54.0%), whereas participants under 35 preferred IFL (43.9%). For participants from the US, the trend was similar, but for participants 50 years or older (41.4%). Those under 50 preferred IFL (50.0%). Table 3 shows the statistical results from all of our analyses.

Bickford *et al.* [6] did not find significant main effects of *Gender* and *Age* on language preferences of blind and low-vision individuals ($N=100$). As they conducted their study 18 years ago, we performed a second analysis, examining the current effects of *GND* and *Age* on *PRF* for our visually-disabled participants. We found that *Age* had a significant main effect on *PRF* both overall ($\chi^2(2, N=250)=13.52, p<.05$, Cramer's $V=.23$) and for participants from the US ($\chi^2(16, N=237)=10.76, p<.05$, Cramer's $V=.21$). *GND*, however, did not have a significant main effect on *PRF*. Hence, our results only partially

agreed with those from Bickford *et al.*'s analyses, showing that language preferences significantly varied among our visually-disabled participants.

3.2.2 Language Commonly Encountered (LCE). The factor *Disability Category* (DSB) had a significant main effect on LCE ($\chi^2(8, N=895)=21.98, p<.05$, Cramer's $V=.16$). This result indicates that LCE differs significantly between the nine disability categories. Specifically, disability categories including *Visual, Cognitive, Neurological, Auditory, Chronic Illness, and Mental-Health Related* commonly encounter IFL (62.9%, 58.0%, 60.4%, 56.0%, 55.0%, and 57.4%, respectively) whereas category *Mobility* encounter PFL more commonly (56.7%). Category *Learning* had an equal percentage of language encounter (50%).

Similarly, *Country* (CTY) also had significant main effects on LCE ($\chi^2(2, N=895)=16.23, p<.001$, Cramer's $V=.14$), showing that LCE differs significantly between the three countries used in our analysis. Our participants from the *United States* and *United Kingdom* more commonly encountered IFL (56.2% and 56.3%, respectively), whereas participants from *Canada* encountered PFL more commonly (71.4%).

The factors *GND* and *Age* did not have a statistically significant effect on LCE. Additionally, none of the factors were statistically significant for participants from the United States.

3.3 Qualitative Evaluation

To qualitatively assess the language preferences of disabled people, we analyzed their free-form survey responses. Specifically, we examined the reasons for their choice of preference. We used standard semantic thematic analysis processes [11, 47] to analyze the responses. Our final analysis revealed three themes: (1) *one size does not fit all*; (2) *not everyone has a preference*; and (3) *people can have multiple preferences*. We discuss these below, in turn.

3.3.1 One Size Does Not Fit All. Our first theme shows that the language preferences of disabled people can vary between different disability categories. For example, as shown in Table 2, the blind and low-vision community prefers IFL, whereas people with mobility disabilities prefer PFL. Therefore, using one-size-fits-all language might not be appropriate for all disabled people. P26, who is autistic, and P20, who is blind, had emphatic preferences for IFL:

Person-first language implies that being disabled is a bad thing, which we should continue to stigmatize. I'm a disabled, autistic person, not a person with autism or a person with a disability---you can't separate those experiences out from the rest of me. (P26)

I'm not ashamed of my disability. I am who I am, there's no point in denying that. 'Person with blindness' just... sounds wrong to me. I feel like person-first language tries to hide our disabilities. It communicates the message that, even though you're disabled, you're still a person, treating disability as something wrong and something to be ashamed of, which is not the way I feel about it. (P20)

Similarly, P220, who identifies as a person with a mobility disability, and P120, who is a person with a chronic illness, expressed clear preferences for PFL:

It's not a deep loathing, but I just don't like it when 'disabled' is literally the first way a person learns of me, as in, 'A disabled woman I work with.' There, I'm disabled before literally anything else, and it's really not one of the most interesting things about me. (P220)

It is important to me that a person is said first. We are humans. We have feelings and deserve to be recognized as a person before a disabled person. (P120)

Overall, in line with our quantitative results, our first theme shows that language preferences vary between disability categories.

3.3.2 Not Everyone Has a Preference. Our findings show that 18.4% and 22.7% survey respondents overall and in the United States, respectively, had no preference between identity- and person-first language. For example, P308, P419, and P200 shared their opinions:

All I care about is that people know I'm blind. If someone wants to say I'm an individual who is blind, or that I'm a blind person, it doesn't make a difference to me. (P308)

I do not have a preference because I prefer others to feel comfortable and am secure enough in who I am as a person to not become overly offended or upset by the ways people go about communication. Far too often this issue of person vs identity-first language becomes unnecessarily heated and seems to cause more anxiety than is needed, healthy, and helpful. (P419)

The order of the person and the disability doesn't change the end result. Whether the person or the disability comes first the disability is still present and, in my opinion, does not really modify any sort of context. (P200)

Our second theme shows that disabled people may not have a preference as long as their disability is "seen" and acknowledged.

3.3.3 People Can Have Multiple Preferences. Our third theme reveals that disabled people can have multiple language preferences. We found that disabled people with multiple disabilities may have different preferences for each disability category. For example, P447, who is autistic and has PTSD, had different preferences for each disability category:

I use both. I often use identity-first language when relaying the fact that I am autistic, and will use person-first language to explain that I have PTSD. I do this as it seems to be the preferential consensus of self-advocates that I know, and it helps people feel comfortable if I use the language they prefer. I don't

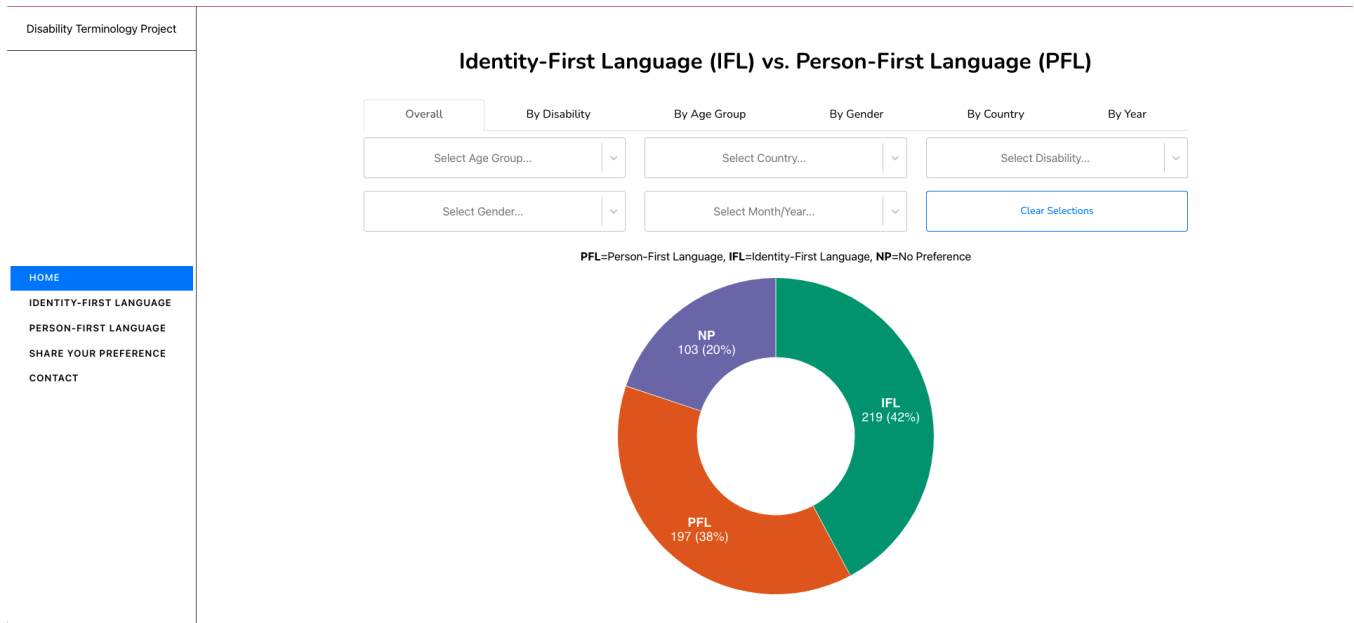


Figure 3: The user interface of the accessible web platform showing filtering options for intersectional explorations using multi-select dropdown for age group, country, disability category, gender identity, and month/year. Tabs for these factors are also shown for intra-sectional exploration.

feel very strongly about either one over the other personally. I think individuals have the right to choose to use whichever is most comfortable for them. (P447)

Similarly, P393, who is autistic and has anxiety and ADHD, shared her opinions:

Depends. With Autism I prefer identity first. Mostly because I do not see my autism as a condition. I don't want it treated like a disease. With my anxiety I prefer person first. The same is true of ADHD. (P393)

Additionally, disabled people may have multiple preferences depending on the context. P329 explained their preference differences based on professional and informal environments:

I code switch between the two depending on my audience. When speaking informally, or to groups of people with disabilities, I use blind person, but for professional settings I use person with a disability. (P329)

In our third theme, we found that disabled people may have multiple preferences. Our findings show that their language preferences could vary for each disability category they represent or based on the context or environment. To make our survey data publicly available, we created an accessible web platform, which we present in the section below.

4 ACCESSIBLE WEB PLATFORM

To provide transparency and comprehensive means of obtaining up-to-date language preferences of disabled people, we developed an accessible web platform that shows the live results from our survey (updated immediately after a participant fills out the survey). We present our web platform's design considerations, functionalities, and implementation details.

4.1 Design Considerations

In developing the accessible web platform, our goal was to create a straightforward interface that allows users to explore and extract information effectively and granularly. Our user interface had two sections: (1) Sidebar Navigation; and (2) Content Area.

4.1.1 Sidebar Navigation. The sidebar navigation contained five options (as shown in Figure 3): (1) Home; (2) Identity-First Language; (3) Person-First Language; (4) Share Your Preference; and (5) Contact. Home page displays the survey results and is the entrypoint for the website. Identity-First Language and Person-First Language pages show definitions and examples for identity- and person-first language, respectively. Clicking on Share Your Preference navigates the user to the survey, whereas the Contact page displays the names and email addresses for the members of the research team.

4.1.2 Content Area. We displayed the contents for each page in the content area of our website (as shown in Figure 3). For the Home page, the contents involved tabs for each independent variable and a visualization displaying the distribution of language preferences between IFL (identity-first language), PFL (person-first language),

and NP (no preference). All the other pages contained appropriate text organized using headings and paragraphs.

4.2 Intersectional & Intra-sectional Exploration

We recorded the disability category, gender identity, age, and country of the survey respondents to enable users to examine the language preferences of disabled people both separately for each independent variable (intra-sectional) and in combination (intersectionality). We implemented “tabs” (or subsections) to support users in exploring the intersectionality and intra-sectionality of these factors. The *Overall* tab allows users to examine the intersectionality of these factors, whereas the other subsections enable users to perform intra-sectional exploration. Additionally, we added the *By Year* tab to track the evolution of language preferences over time. As we started collecting the survey results only a few months back, the data under this subsection, at present, may not be significant. However, we hope that tracking the survey data over time will reveal patterns and results worth exploring.

In the *Overall* tab (Figure 3), users can filter the results using the multi-select dropdowns in our web-interface to perform a granular intersectional exploration as per their needs and curiosity. For example, users can select “United States” and “United Kingdom” from the countries dropdown and “2021” and “2022” to display the language preferences collected from participants from these two countries in the past two years. For simplicity, we chose a pie chart to display the results, showing the total count and percentage for each type of language preference. *By Disability* (see Appendix A, Figure 5), *By Age Group* (see Appendix B, Figure 6), *By Gender* (see Appendix C, Figure 7), and *By Country* (see Appendix D, Figure 8) subsections display the results using a bar chart, whereas *By Year* (see Appendix E, Figure 9) shows the results using a smoothed line graph. We created our graphs using the D3 visualization library [7].

4.3 Accessibility

We used VoxLens [58], an open-source JavaScript plug-in that improves the accessibility of online data visualizations using a multi-modal approach. However, VoxLens is currently only applicable to visualizations created using two-dimensional single-series data. Therefore, we only used it with our pie charts. For the other visualizations containing multi-series data, we followed the recommendations from prior work [41, 56, 57] to generate the alternative text (“alt-text”) dynamically. Specifically, we used Accessible Rich Internet Applications (ARIA) attributes [71] to add alt-text to our graphs. Additionally, we added a tabular representation of data only visible to screen readers, similar to the accessibility measures employed by Google Charts [14, 56]. For example, the alt-text for our bar chart showing the language preferences by disability category was:

Bar chart showing counts for identity-first, person-first, and no preference per disability. People with mobility disabilities prefer person-first language, visually disabled people prefer identity-first language, cognitively disabled people prefer identity-first language, learning disabled people prefer identity-first language, people

with neurological disabilities prefer person-first language, deaf and hard of hearing people prefer identity-first language, people with chronic illnesses disabilities prefer person-first language, mental-health-related disabled prefer identity-first language. The data table is presented below.

We used appropriate colors for Color Vision Deficiency (CVD) in our data visualizations. We also checked the contrast ratio to be at least 3:1, using the WebAIM Contrast Checker tool [72]. Finally, we tested our platform for accessibility with and without several screen readers. However, we did not conduct studies with screen-reader users to test the accessibility of our platform. We plan on continually improving our web platform’s accessibility and usability by conducting formative studies with diverse groups of users.

4.4 Implementation Details

In developing our accessible web platform, we generated 119,402 lines of developed code through 19 commits, excluding comments. We used the React [32] framework to build our platform. Therefore, JavaScript was naturally our choice of programming language. Additionally, we used EcmaScript [30], employing modern JavaScript features. We implemented our survey using Google Forms, auto-collecting the responses in a Google Sheets document. We used Metis [55]—a React plug-in that allows the usage of Google Sheets as a database—to display live results on our web platform. Currently, our data is not downloadable; we have started the development work to support exporting the data as CSV and JSON files.

5 LANGUAGE USED IN PUBLICATIONS AT ASSETS AND CHI

In a secondary exploration, we analyzed 11,536 abstracts from publications at ASSETS and CHI to assess the language usage in publications at these academic venues. In this section, we present our methodology, analysis, and results.

5.1 Method

Our goal was to investigate the adoption of identity- and person-first language in publications at ACM SIGACCESS Conference on Computers and Accessibility (ASSETS) and ACM Conference on Human Factors in Computing Systems (CHI). Therefore, we analyzed 11,536 abstracts from papers at these conferences.

5.1.1 Data Set. Similar to prior work [37, 42], we queried the ACM Digital Library for all papers published since the year 2000 (inclusive) at ASSETS and CHI, collecting their abstracts. Unlike prior work [37, 42], our data set was not solely limited to technical papers and comprised all the publications, including extended abstracts and poster papers, resulting in a total of 1,564 (ASSETS) + 9,972 (CHI)=11,536 abstracts.

Our goal was to determine the identity- and person-first language from the collected abstracts using an automated Natural Language Processing (NLP) approach. Therefore, we utilized “SpaCy” [19, 68]—a widely-used NLP library—to generate Part-of-Speech (POS) tags. (POS tags are the grammatical tags that identify the part of speech of words in text based on both their definitions and contexts.) First, we compiled a list of all nouns appearing in the 11,536 abstracts,

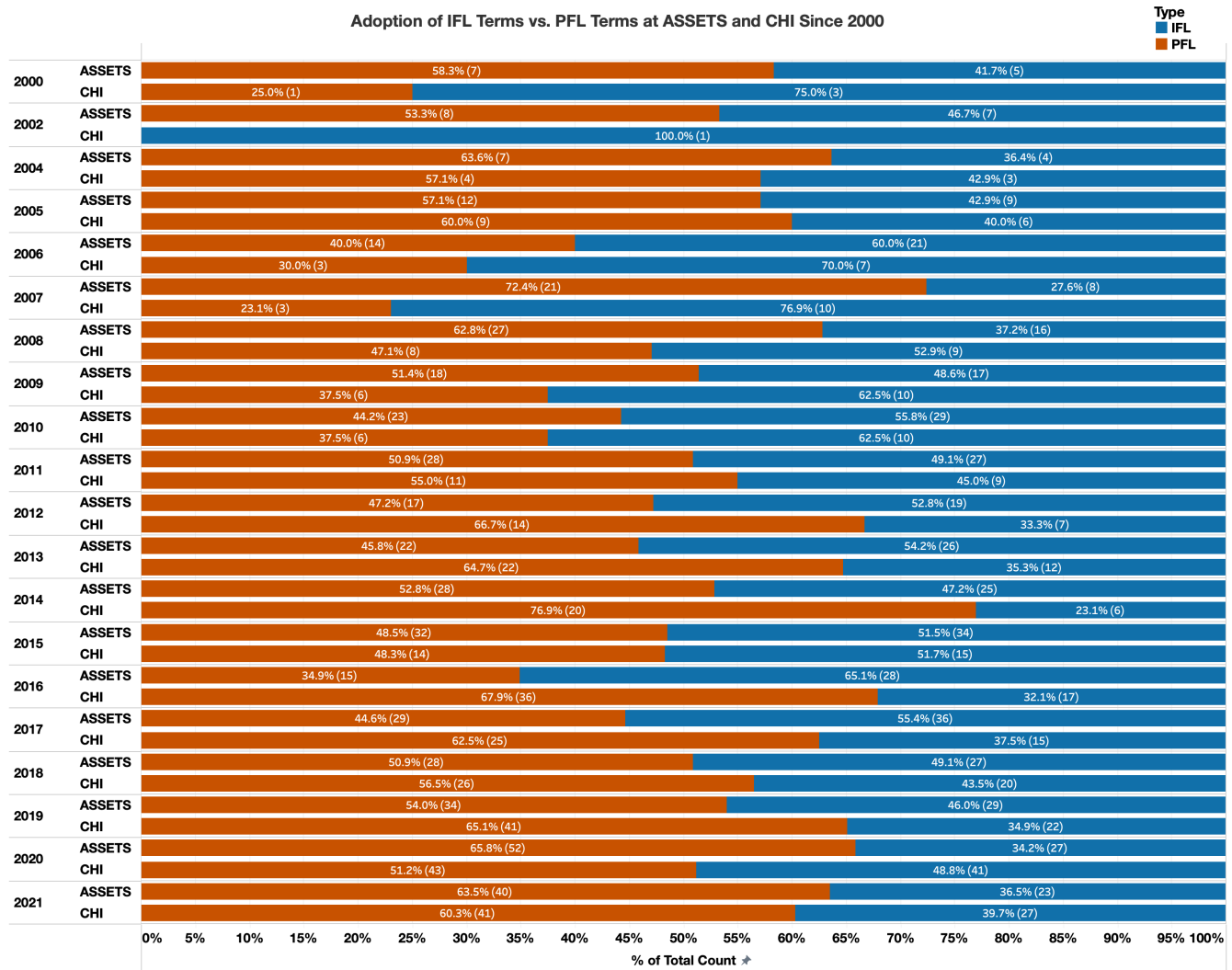


Figure 4: Percentage of total count for IFL terms versus PFL terms per year, published at ACM ASSETS and ACM CHI since the year 2000 (excluding 2001 and 2003). Total count for terms is shown in parenthesis.

resulting in 466 unique nouns. Then, we manually filtered the list, retaining only the most commonly appearing nouns that identify a person (“person-identifiers”). Our final list included 17 person-identifiers: *people, individual, user, student, person, participant, adult, children, researcher, subject, practitioner, learner, developer, designer, population, activist, and faculty*. In addition to collecting the person-identifiers, based on prior work [37, 42], we composed a list of six IFL terms and their equivalent PFL terms that people commonly use to refer to disabled people. The IFL/PFL terms are as follows: *disabled/disabilit(ies), impaired/impairment, wheelchair/wheelchair, blind/blindness, deaf/deafness, and autistic/autism*.

Then, for each sentence in each abstract, we searched for IFL and PFL terms following the criteria below:

- (1) *IFL*: One of the six IFL terms followed one of the 17 person-identifiers (e.g., *disabled user*).
- (2) *PFL*: One of the 17 person-identifiers, followed by an adposition (e.g., *with*) and one of the six PFL terms (e.g., *student with autism*).

To increase the efficiency of our approach, we removed the determiners (e.g., *a* or *an*) from the sentences. We designed our algorithm to include plurals (e.g., *disability* and *disabilities*) in search queries. Additionally, our algorithm included compound nouns (e.g., *people with physical impairments*) when searching for PFL terms. In addition to extracting the total count of the terms, we recorded all the sentences containing those terms. We manually tested every sentence to check for false positives, making algorithmic adjustments wherever necessary. The supplementary materials comprise

our collected data, including all recorded sentences containing the IFL and PFL terms for ASSETS and CHI for each publication year.

5.1.2 Analysis. In addition to calculating the total count for IFL and PFL terms in publications at ASSETS and CHI, we explored the difference in adoption of these terms between the two venues. We used *Conference (CNF)* as our independent variable with the following levels: {ASSETS, CHI}. Our dependent variable was *Language Preference (PRF)*. We calculated *PRF* as the ratio between the total count for IFL terms and the total for PFL terms in a given publication year. To analyze *PRF*, we used Independent-samples *t*-test [53, 64] to determine significance. As ASSETS skipped publications in 2001 and 2003, we excluded the data for CHI from these years in our analysis.

5.2 Results

We investigated the effects of *Conference (CNF)* on *Language Preferences (PRF)* but did not find a significant main effect ($p \approx .497$). For each conference separately and combined, PFL counts were higher (54.4% combined; 52.6% for ASSETS and 57.1% for CHI) than IFL counts (45.6% combined; 47.4% for ASSETS and 42.9% for CHI). We also found this trend persistent for publications in the last five years (2017–2021). Figure 4 shows the percentage of total count for IFL and PFL language used across ASSETS and CHI since 2000.

6 DISCUSSION

To provide insights into the language preferences for and by disabled people, we surveyed 519 disabled people from 23 countries representing at least one of nine disability categories. Our results show that 49% of disabled people preferred identity-first language, 33% favored person-first language, and 18% did not have a preference. Additionally, we explored the intra-sectionality and intersectionality of disability categories, gender identities, age groups, and countries on language preferences of our survey respondents, finding that language preferences vary within and across these factors. We also investigated language usage at ASSETS and CHI by analyzing 11,536 publication abstracts, finding that PFL’s usage was 16.1% more than identity-first language at these venues.

6.1 Diversity Within Disability

In the discussions involving the usage of identity- or person-first language to refer to disabled people, findings and recommendations are usually generalized for anyone with a disability, irrespective of the disability categories they represent. Our survey results showed that although 48.6% of disabled people preferred identity-first language overall, compared to 33.0% who favored person-first language, these preferences varied across disability categories. For example, people with mobility disabilities, neurological disorders, or chronic illnesses preferred person-first language to identity-first language (as shown in Table 2), highlighting the diversity within the disabled community. However, interestingly, Disability Category (*DSB*) did not have a significant main effect on language preferences for participants from the United States, with only people with neurological disorders having a higher preference for person-first language. Our work did not explore this disparity. We invite scholars and researchers to utilize our publicly-available survey data to investigate the underlying factors contributing to the difference in

language preferences within disability categories for participants within and outside the United States.

6.2 Intersectionality Matters

Similarly, we found that language preferences varied within and across gender identities, age groups, and countries. For example, women 36 years or older had a dominant preference for person-first language (53% vs. 29%; 18% had no preference). In contrast, men in the same age group had no prominent difference in language preferences (37% for identity-first, 35% for person-first, and 28% for no preference). Likewise, men and women in the United States had almost identical preferences between identity- and person-first language (38% and 33% for men; 39% and 39% for women, respectively). However, men and women in the United Kingdom had prominent and opposite preferences for identity- (60% for men and 30% for women) and person-first language (30% for men and 63% for women). For non-binary participants, the preference was significantly higher for identity-first language in all of our explorations. These findings indicate that intersectionality can play a pivotal role in determining the language preferences of disabled people.

Additionally, our results only partially agreed with those from Bickford *et al.*’s [6] analysis, in which they studied the intersectionality of gender and age on the language preferences of blind and low-vision people. Their results showed no difference in the preferences for both gender and age. In contrast, our results showed a statistically significant effect for age but not for gender for visually-disabled survey respondents. We attribute this contrast to the evolution of preferences over time, as their exploration dates back to 2004, about 18 years ago. This finding accentuates that language preferences can drastically evolve, therefore, presenting a necessity for up-to-date data on the language preferences of disabled people. To keep our data on language preferences up-to-date, we intend to redistribute the survey every quarter. We also built the functionality on our accessible web platform to track the preferences over time to understand and explore the evolution of language preferences.

6.3 Language Adoption in Academia

Our results show that abstracts of published papers at ACM ASSETS and ACM CHI, since 2000, have used person-first language 16.1% more than identity-first language. We did not find a statistically significant difference in language adoption between the two venues. Although our results align with findings from prior work [37, 42], it is worth noting that our exploration was holistic—we did not investigate the relationship between the language used and disability categories, gender identities, age groups, or countries. We also only used the abstracts for our analysis, similar to prior work [37, 42], as ACM’s laws prohibit the extraction of full texts from publications. However, our survey results and the analysis of the language used in publications at ASSETS and CHI, taken together, indicate that although disabled people prefer identity-first language, the language used to refer to them is more commonly person-first. Future work can study the nuances in language adoption more comprehensively in publications at scholarly venues, including conferences other than ACM ASSETS and ACM CHI, to identify adoption patterns.

6.4 Recommendations

Based on our findings, we offer three recommendations for authors and researchers when choosing between identity- and person-first language to refer to disabled people:

- First and foremost, we recommend authors and researchers respectfully ask individual users for their language preference (e.g., during pre-study or demographic questionnaires) whenever and wherever possible. To convey to readers that the language used reflects the individual's preference, authors and researchers can clearly state their processes at the beginning of the article or in-line when referring to the individual (e.g., "P0, who preferred identity-first language..."). While such additions can increase the word count of the text, they contribute toward inclusivity and cultural awareness around disability-related matters.
- Second, we recommend referring to the intended demographic group using their self-identified language preferences, employing intersectionality using their disability category, gender identity, age group, and country. When referring to disabled people as a group, the overall language preference (e.g., identity-first language, at present) may be the most appropriate. Authors and researchers can use our web platform to stay up-to-date with the language preferences of disabled people.
- Finally, we recommend that authors and researchers keep themselves up-to-date with the latest language preferences of disabled people, considering that preferences may change over time. We intend to distribute our survey every quarter and keep our data publicly available through our live website to assist authors, researchers, and interested individuals in staying up-to-date with the latest preferences of disabled people.

7 LIMITATIONS & FUTURE WORK

We did not collect our participants' race and ethnicity in our survey; including these factors in intersectional and intra-sectional explorations may produce noteworthy results. We designed our survey using Google Forms, enabling future work to include these factors in our survey and analyze their effects on the language preferences of disabled people. Our analysis of the language used in publications at ASSETS and CHI was holistic. While our results reaffirm the findings from prior work, future work can employ more rigorous and nuanced hybrid (human + AI) methodologies to examine language adoption in academic publications.

Additionally, utilizing our findings, future work could build systems (e.g., browser extensions) that automatically update the language used on web pages to match the individualized preferences of users and study its effects on users. Users could specify these preferences using a centralized configuration system. Similarly, future work could replicate "language checker" plug-ins that proofread the text for authors and researchers based on our findings, assisting them by ensuring appropriate language usage and providing suggestions wherever applicable.

8 CONCLUSION

We surveyed disabled people globally to collect their language preferences between identity- and person-first language and recorded the reasons behind their preferences. Additionally, we explored the intersectionality and intra-sectionality of their preferences with their disability category, gender identification, age group, and country. Our results show that although disabled people prefer identity-first language overall, their preferences vary across disability categories, gender identities, age groups, and countries of residence. We made our data publicly available through an interactive and accessible web platform that enables users to granularly extract information by filtering language preferences using any combination of disability category, gender identification, age group, and country. We also investigated language usage in papers at ACM ASSETS and ACM CHI, finding a higher usage of person-first language than identity-first language at both conferences.

Our findings, taken together, indicate that although disabled people prefer identity-first language, person-first language is more commonly used. We provided recommendations for authors and researchers in choosing the appropriate language. By releasing our survey data on language preferences through an accessible web platform, we hope our work will guide people in using appropriate language to refer to disabled people and investigate the intersectional differences in language preferences.

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A LANGUAGE PREFERENCES BY DISABILITY

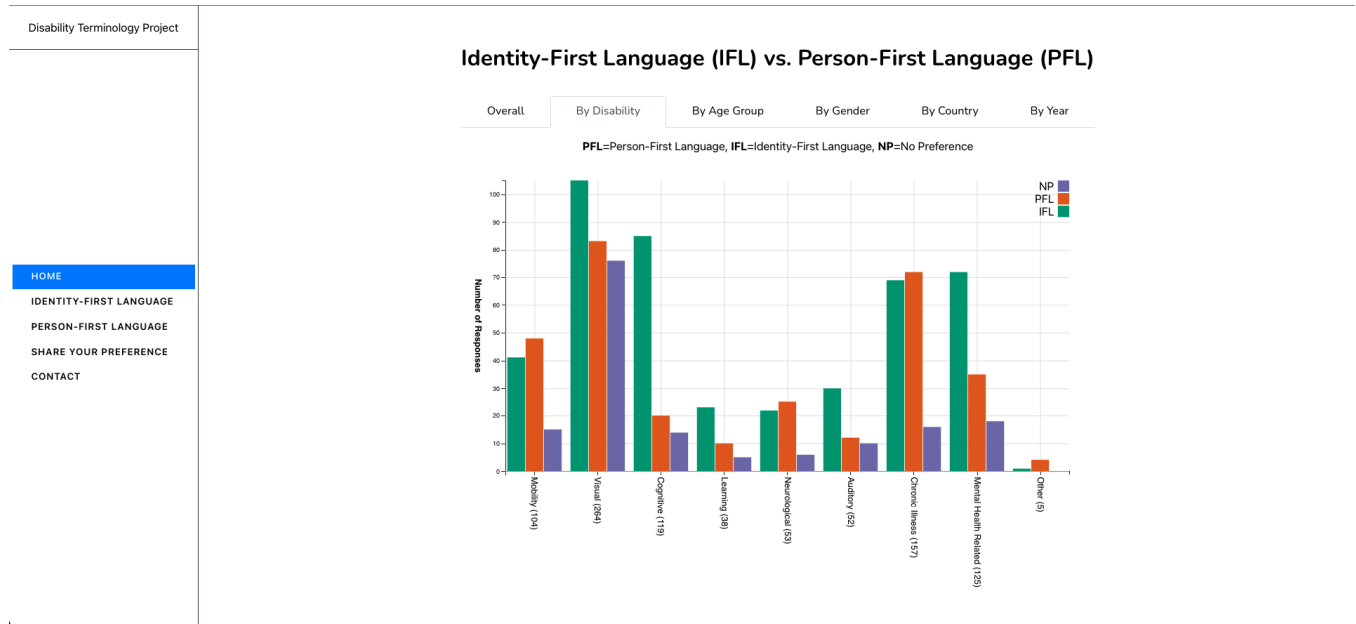


Figure 5: Screen capture from our accessible web platform showing a bar chart that displays the language preferences of disabled people between identity-first language (IFL), person-first language (PFL), and no preference (NP) by disability categories.

B LANGUAGE PREFERENCES BY AGE GROUP

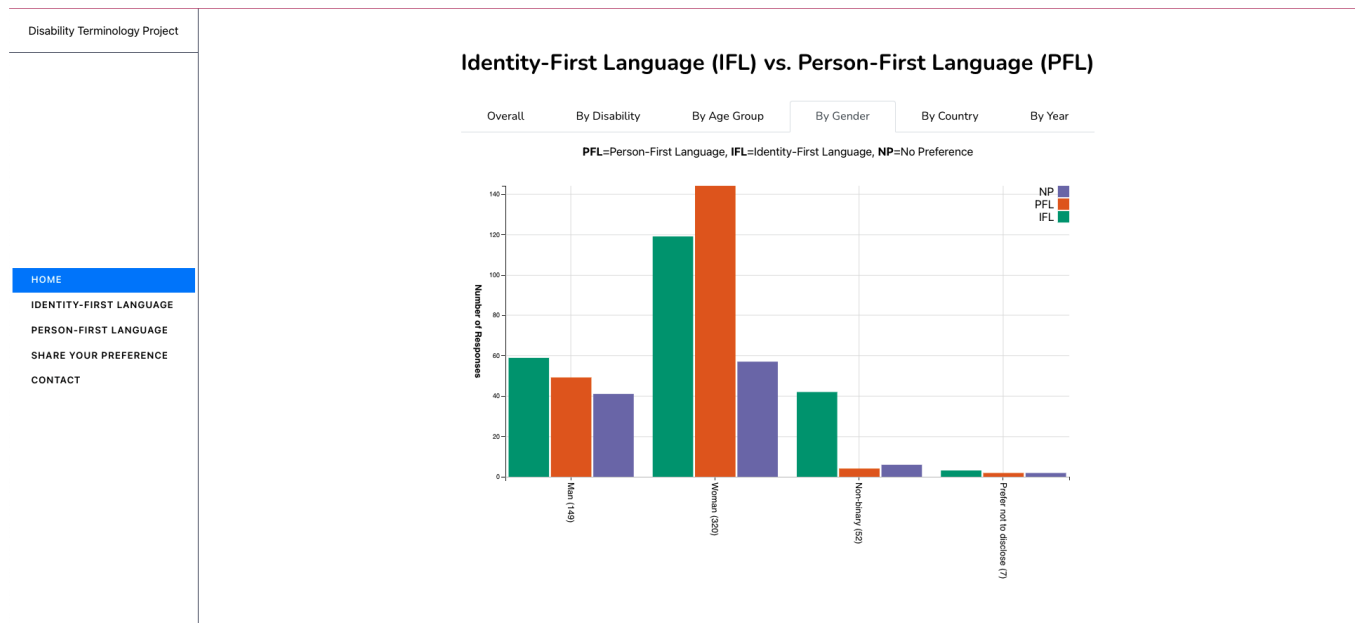


Figure 6: Screen capture from our accessible web platform showing a bar chart that displays the language preferences of disabled people between identity-first language (IFL), person-first language (PFL), and no preference (NP) by age group.

C LANGUAGE PREFERENCES BY GENDER IDENTITY

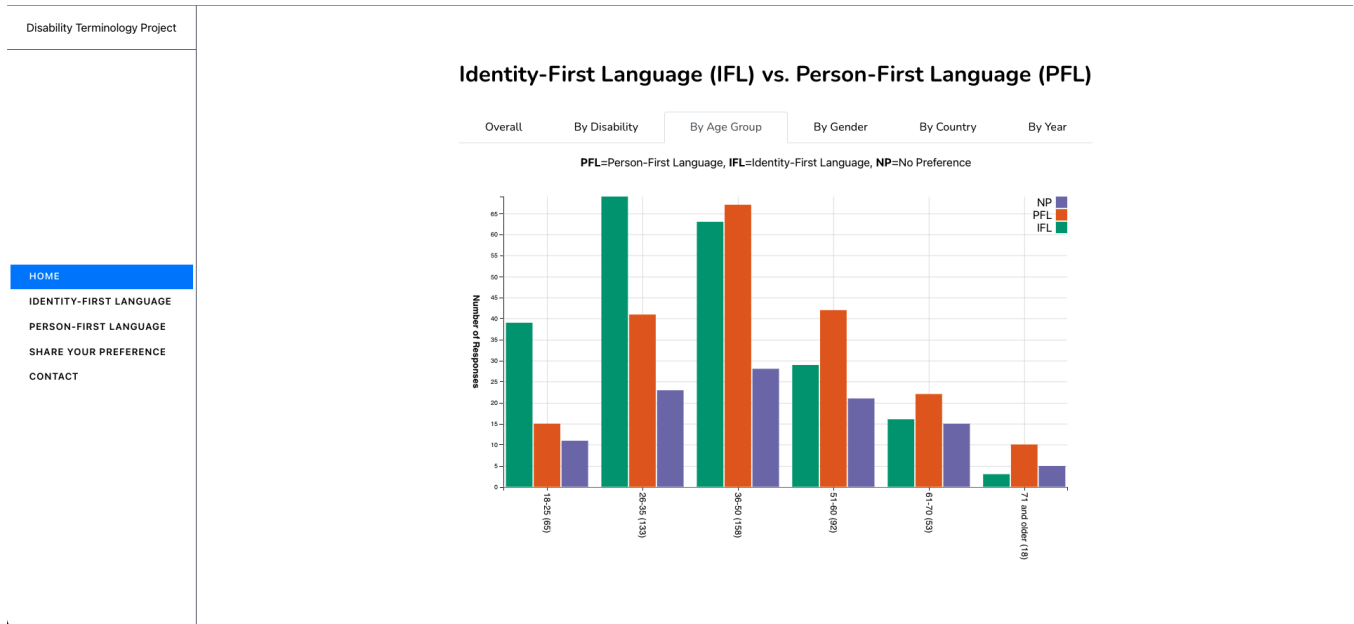


Figure 7: Screen capture from our accessible web platform showing a bar chart that displays the language preferences of disabled people between identity-first language (IFL), person-first language (PFL), and no preference (NP) by gender identity.

D LANGUAGE PREFERENCES BY COUNTRY

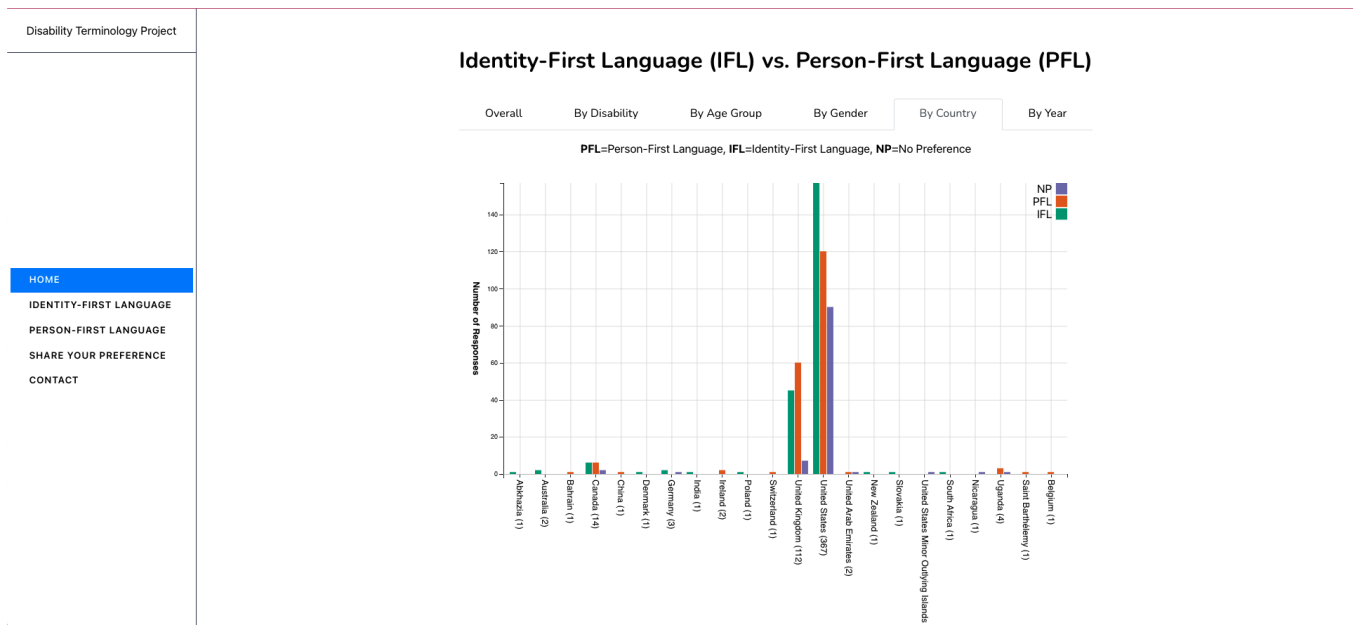


Figure 8: Screen capture from our accessible web platform showing a bar chart that displays the language preferences of disabled people between identity-first language (IFL), person-first language (PFL), and no preference (NP) by country.

E LANGUAGE PREFERENCES OVER TIME

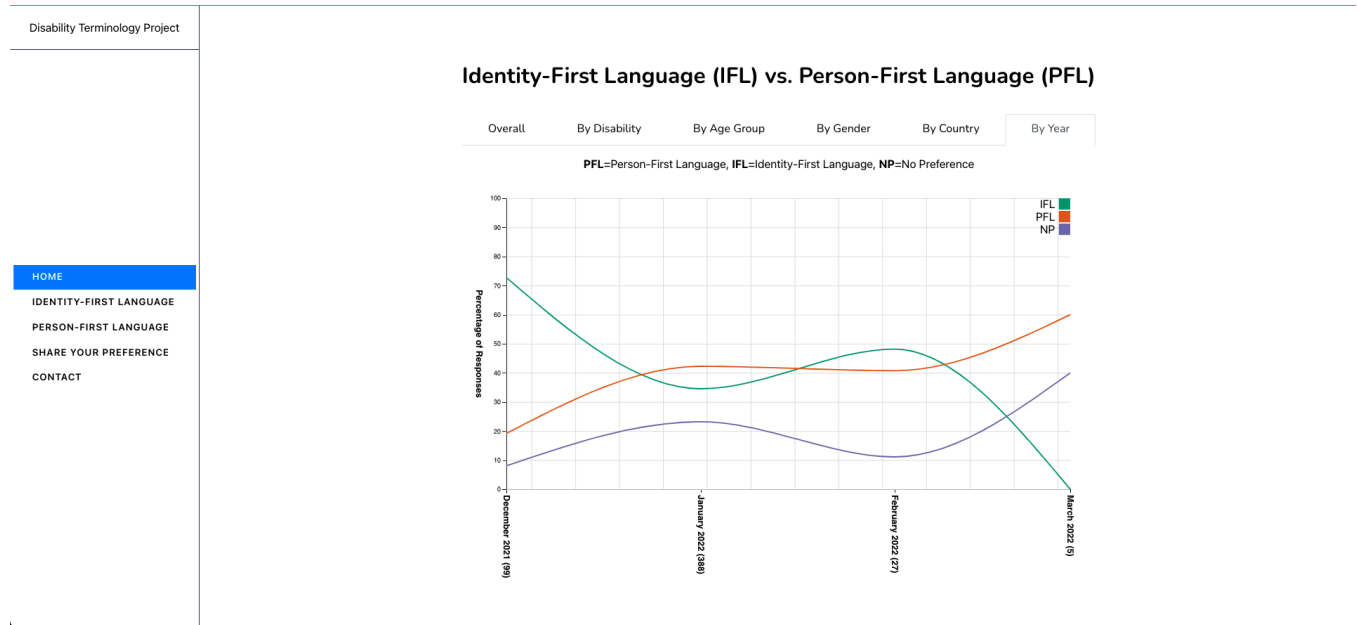


Figure 9: Screen capture from our accessible web platform showing a line chart that displays the language preferences of disabled people between identity-first language (IFL), person-first language (PFL), and no preference (NP) over time. (As we started collecting the survey results only a few months back, the data, at present, may not be significant to draw any conclusion. However, we hope that tracking the survey data over time will reveal patterns and results worth exploring.)