COUNTERACTING DOMINANT DESIGN THROUGH INTERSECTIONAL FEMINIST THOUGHT

by

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A thesis submitted to the Faculty of Graduate and Postdoctoral Affairs in partial fulfillment of the requirements for the degree of

Master of Design

in the

School of Industrial Design

Carleton University
Ottawa, Ontario

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Abstract

This thesis examines how dominant and exclusionary design practices operate within systems of power, how these maintain experiences of privilege and oppression, and how these might be challenged through a systematic implementation of intersectional feminist thought in design processes. A three-phased qualitative study was conducted. Phase 1 involves a critical literature review of intersectionality and how forms of dominant design operate, including the Double Diamond model. Phase 2 includes an analysis of three design approaches, Design Justice, Data Feminism and Towards an Intentional Intersectional Practice to assess the implementation of intersectionality in the design process. Phase 3 synthesizes the findings and discusses how intersectional thinking may counteract dominant design. It was discovered that emerging intersectional feminist design approaches contribute to counteracting dominant design. This work is fledgling and further study is required to systematically implement intersectional feminist thought in design processes. This thesis offers insight regarding how to do so.
Acknowledgements

I would like to express my deepest appreciation to my supervisor, Dr. Chiara Del Gaudio. Thank you for the opportunities you afforded me and for constantly inspiring and pushing me to new limits. Words cannot express how grateful I am for your mentorship, generosity, and invaluable support.

I would like to extend my gratitude to my co-supervisor, Dr. Tracey P. Lauriault. Thank you for contributing your expertise and perspectives to this thesis and for your continuous guidance and encouragement.

I would like to offer a special thank you to my parents and sister. Thank you for your valuable insights, moral support, and for being my source of laughter. This thesis would not have been possible without your tremendous love and care.

I would also like to show my appreciation to my friends and family for their constant encouragement and motivation along the way.
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Chapter 1: Introduction

The practice of designing and its outcomes have recently been critically questioned regarding social and political implications. As a result, research about design – theory and practice, has begun to investigate how artifacts including objects, technologies, services, and environments govern and inform experiences in society (Abdulla et al., 2019; Escobar-Tello et al., 2021; Escobar, 2018; Martins, 2014). Specifically, some scholars suggest that if all design-led artifacts “bring about particular ways of being, knowing, and doing” (Escobar, 2018, p. x), design has social shaping qualities that establish, reproduce, and impose certain realities (Escobar-Tello et al., 2021; Mazé, 2019). Importantly in this sense, this is the understanding that design is never politically neutral, or as political theorist Langdon Winner (1980) posits, “artifacts have politics”. Similarly, contemporary design theorist and philosopher, Tony Fry (2010), argues that design often seamlessly conceals and embodies particular ideological values and “excludes all other than what has been selected to be produced” (p.17). Therefore, design shapes how people experience the world based on predetermined views of how humans should behave and be treated (Fry, 2010).

A growing number of scholars have contributed to these discussions by investigating the implications of how the political nature of dominant practices of design uphold forms of oppression such as sexism, racism, classism, ableism, and ageism, to name a few, also leading to harmful and even life-threatening consequences (Hamraie, 2016; Perez, 2019; Williams, 2019). For instance, feminist author Caroline Criado Perez (2019) explores the underlying and perpetual systemic discrimination against women that
is caused by deeply rooted issues in design processes. Artifacts and systems, Perez (2019) argues, are based on a dominant group of people, such as the “default male”, which leads to harmful or even fatal outcomes. For example, women are 47 percent more likely to be injured in a car crash and 17 percent more likely to die due to a disregard for considering gender in the design of car safety. Other scholars are also beginning to analyze how binary views of gender are actively or unintentionally encoded in designed artifacts (Maher, 2017). For instance, a security screening body scanner that is used in some airports is designed to prompt the operator to select the button for either male or the button for female (Costanza-Chock, 2020). As design justice advocate Costanza-Chock (2020) states, non-conforming bodies are not considered in the design of the system and might lead to discomfort and exclusion.

As mentioned above, discussions on the oppressive implications of design are not limited to gender. Some scholars are identifying instances of racial discrimination encoded in designed objects and systems (Buolamwini & Gebru, 2018; Costanza-Chock, 2020; Williams, 2019). For example, many artificial intelligence (AI) systems, such as facial recognition software, have been designed with biased machine learning data and therefore do not detect darker skin tones (Buolamwini & Gebru, 2018), leaving many users with the continuous feeling of alterity and that the world was not designed for them (Costanza-Chock, 2020) or unable to access services that require facial recognition. This points to the larger issue – that is one of injustice and how design might enforce discriminatory practices if its political qualities are not taken into consideration during the design process.
In a similar manner, design scholars have recognized how design frequently perpetuates forms of ableism (Cachia, 2016). Design processes often impose certain ideologies of ability by viewing disability as something that can be “solved” through "good design" (Hamraie, 2016). For instance, inclusively designed built environments that include wheelchair ramps, elevators, grab bars, to name a few, may offer disabled people access to public life, but also, enforce notions of normalization and assimilation through design (Hamraie, 2016).

These examples show how constructs of identity, that is, gender, race, class, ability, ethnicity, and other categories of identity, and their associated forms of oppression are designed into design processes, practices, and outcome, in such a way that they often go unnoticed (Williams, 2019). Data Feminists, D’Ignazio and Klein (2020), describe these scenarios as the operation of power, where some people experience privilege because structural systems are designed by people like them, for people like them, and therefore benefit people like them. For those who experience oppression, this may be because structural systems are not designed by people like them or people like them are not considered in the design process (D’Ignazio & Klein, 2020). In this regard, there is a need to examine and address the role of design in maintaining and perpetuating forms of oppression (Canli & Martins, 2016; Costanza-Chock, 2020; Martins, 2014) by critically evaluating the tools and techniques which may support the exercise and organization of power and to propose ways to counteract them.

As such, a number of attempts have been made to shift narratives and practices of design, embrace new ways of thinking (Escobar, 2018; Prendeville & Koria, 2022; Sanders & Stappers, 2008), and address certain forms of oppression. Particularly, this can
be seen in the case of accessible design practices (for example Persson et al., 2015; Smith, 2013) and decolonial design approaches (for example Abdulla et al., 2019; Decolonising Design Group, 2017). However, although still emerging, as scholars of intersectional thought point out, existing approaches mostly use a single-axis analysis of identity meaning that they are concerned with only one dimension of an individual’s identity. For example, in the case of designing for accessibility, ability may be the only dimension of identity considered in the design process and is therefore separated from other issues regarding identity such as racial belonging, gender identity, or economic access (Hamraie, 2016). Also, overlooking how multiple identities intersect may amplify adverse effects caused by design (Shaw, 2019b). Although many designers aspire to challenge systems of injustice, their intentions are constantly undermined by disregarding the intersecting and multidimensional experiences of identities and forms of oppression (Costanza-Chock, 2020), the concept known as intersectionality. Intersectionality refers to “the study of intersecting social categories – such as race, gender, and social class – with which an individual identifies” (Guittar & Guittar, 2015, p. 657). This concept offers a holistic understanding of lived experience by addressing the simultaneous experiences of oppression and privilege (Guittar & Guittar, 2015).

Intersectional approaches to design, also offer the possibility for designers to critically engage and address design’s relationship to power dynamics and injustices (Canli & Martins, 2016). The adoption of intersectional ways of thinking also has the potential to transform practices of design (Shaw, 2019b) in the pursuit of challenging and counteracting forms of oppression through design. Some academic design literature is starting to recognize this need (Canli & Martins, 2016; Martins, 2014), yet only a handful
of design scholars have attempted to implement intersectional feminist ways of thinking into processes and practices of design. Notwithstanding these initial efforts, there has been little scholarship on how to systematically implement intersectional thinking in practice preventing designers and scholars to systemically overcome the issues with current design practice. It is, therefore, important to understand how intersectionality can be implemented in design processes by understanding how existing efforts have started to address this challenge, their strengths, and limitations, and how to improve their approaches to prevent and change the unequal distributions of power and dominant practices of design. Design alone cannot completely change society, but “as both a product and producer of societal values”, it can engage with intersectionality to make small but visible critical waves of change (Martins, 2014, p. 987).

1.1 Research focus

This thesis will investigate how to systematically implement principles of intersectional thinking into design practices. The aim is to support the work done by scholars and practitioners in their initial attempts and to counteract dominant and exclusionary forms of design. As such, this thesis will answer the following research question: How can intersectional feminist thought be systematically implemented in design processes to counteract dominant design?

To answer this question, the following research objectives have been identified:

1) To understand the concept of and the questions addressed by existing scholarship on intersectionality, that is, its emergence, its key features, current applications, and related challenges.
2) To understand the features of dominant design practices, and the exclusionary implications of some of their implementations.

3) To identify design approaches that implement intersectional thinking and how they do so, coherently to the concept and assess if they overcame implementation challenges.

4) To identify key elements and dynamics to systematically implement intersectional thinking into design practices to counteract dominant design.

1.2 Thesis structure

The thesis is structured as follows, starting with Chapter 1, that introduces the problem and the research question. Chapter 2 discusses my positionality as a researcher and outlines the research process, and how I chose to explore the research question. The research process involves 3 phases: preparatory, analytic, and synthesis. Chapter 3 explores the relationship between relations of power and design processes by providing a brief overview of key conceptualizations of power and by identifying principles and features of dominant design. The principles are later used as lenses to examine how forms of dominant design function through an analysis of the Double Diamond design process. Chapter 4 introduces turning points in feminist studies and the emergence of the concept of intersectional feminism. Furthermore, this chapter provides an in-depth review of the concept of intersectionality and identifies 3 design approaches that address issues of design, power, privilege, and oppression by adopting an intersectional feminist lens. The insights from this chapter inform the identification of criteria to identify the implementation of intersectional feminist thought in the analysis. Chapter 5 focuses on
analyzing 3 design approaches to understand if and how current design approaches implement intersectional feminist thought into design processes and if and how they might address some of the main challenges of intersectionality. Chapter 6 returns to the research question, synthesizing and triangulating data between the analysis in Chapter 5, and key concepts on power, intersectionality, and dominant design. This chapter also discusses what aspects of intersectional thought are addressed by the 3 design approaches, what is still missing, and how intersectional design approaches may counteract dominant design practices. Finally, Chapter 7 provides an overview of the research, reflections on the progression of the thesis and discoveries. This chapter also highlights the implications of this study, its overall contributions to the field, as well as potential areas for future research.
Chapter 2: Methodology

2.1 Situating myself

According to feminist philosopher and theorist, Donna Haraway (1988), all knowledge is situated, that is, all forms of knowledge are partial perspectives, situated within specific cultural, historical, and geographical contexts. Partial perspectives means that one forms their own knowledge production based on their respective perspectives that are situated within specific contexts. A feminist strategy, stemming from this thinking, involves stating one’s positionality and that is to acknowledge one’s perspective or positionality. This is an important feminist strategy to understand one’s perspective and limitations to the knowledge production process (D’Ignazio & Klein, 2020). Here, I articulate my positionality which situates the reader as to how and why this research came to be, what informed it, and its contributions and limitations.

I write as a brown, straight, woman born in Canada, of Northern Indian descent and identify as middle-class and cisgender. I have the privilege of access to clean air, water, higher education, employment, technology, health care, and much more. My grandparents were raised in colonialist India under British rule from the 1930s to the 1940s but later immigrated to Canada in the 1960s where my parents and later myself were brought up. I grew up surrounded by conversations and stories of racism in Canada experienced by both my parents and grandparents. I have not experienced racism to the extent or in the same manner that my parents or grandparents have. Similarly, I experience forms of sexism given that we live in a patriarchal society, but overall, my experiences and position mostly align with a person that has benefited from structural
systems of privilege. Echoing the sentiments of D’Ignazio & Klein (2020), both data feminist scholars, I cannot speak from experience about certain forms of oppression such as ableism, classism, or transphobia, however, this does not mean I cannot educate myself on systemic and societal oppressive forces that affect marginalized populations and advocate for social justice. This thesis started as an attempt in that direction.

The overall topics of this thesis reflect my personal interests which are deeply influenced by (or as a reaction to) my cultural background, upbringing, and design education. Growing up in a family where power dynamics and societal issues were often topics of conversation, encouraged me to constantly question the status quo and look for truth in the grey areas.

My design education challenged me to think outside of the box to develop better solutions for people. However, in my undergraduate industrial design education, topics such as the role of design and its responsibility regarding existing forms of oppression and societal issues were rarely addressed. Considering my cultural and family background, this absence prompted me to reflect on the lack of reflexivity about these issues, in the design community generally and in my design education, and of the significant impact that design has in socio-cultural contexts. This compelled me to further my studies and explore these questions and issues. In doing so, intersectionality became a topic of interest through a master’s course on gender and design and my involvement in the Gendered Design in STEAM project at Carleton University, where I further discovered that overlooking these issues in design is quite common. Also, the more I saw how broad and transdisciplinary design is, the more I became inspired to challenge and
question how we design. This thesis is a small contribution to these critical and, I think, necessary design conversations.

2.2 Research process

To achieve the aim and objectives presented above, a research process made of three phases has been devised and implemented. The research process undertaken in this thesis can be seen in Figure 1 below, and the phases were: (1) preparatory phase; (2) analytic phase; and (3) synthesis phase. In the following sections, I will expand on the methodological choices and how these were implemented. This explains the research process, how it evolved and how this exploratory approach enabled the analysis of power and oppression in design processes, the results of which led to an approach to implement elements of intersectional thinking in design to counteract dominant, exclusionary, and potentially harmful practices.

![Figure 1. Overview of the research process](image)

1. Preparatory phase
   1. Integrative review on the relation between design, power, and oppression
   2. Analysis of the Double Diamond model
   3. Literature review on intersectionality

2. Analytic phase
   1. Identification of categories of analysis
   2. Analysis of 3 design approaches

3. Synthesis phase
   1. Data triangulation between the 3 design approaches, theories of intersectionality, power, and design, and the practices of dominant design
2.2.1 Preparatory phase

2.2.1.1 Integrative review on the relation between design, power, and oppression

During the preparatory phase, I was concerned with exploring the relationship between design, power, and oppression to understand how they operate, with relevant discussions on this topic, and to identify research gaps. Since intersectionality is still an emerging concept in design literature, I initially looked at different areas of design that were discussing forms of oppression such as gender design, accessible design, decolonial design, and etc. Although these areas are still niche approaches in design, this resulted in an abundance of literature that was useful and presented interesting discussions and examples of the exclusionary implications of design. However, there was little literature that brought these discussions together or focused on how to apply theory or address these issues within a design process. Therefore, I chose to narrow my search to focus on academic literature in design that explored the underlying reasoning for this gap. This meant that the literature included focused on the institutionalization of mainstream design practices, their oppressive implications, and how design as a discipline ought to address these issues of power by incorporating new ways of thinking. Additionally, literature that discussed the relationship between design and oppression in a multidimensional manner rather than only focusing on one form of oppression was prioritized to further understand the complexity and intersectional issues within design practices. As it is beyond the scope of this thesis to focus on every sub-discipline of design, literature that focused on specific design projects or areas in design such as graphic design, service design, product design and etc. were not included.
Specifically, I conducted a search to collect relevant design literature that focused on broader discussions of power and the discipline and processes of design. However, searching for emerging concepts in design literature proved to be more challenging than anticipated. With guidance from Carleton University’s librarians, the most resourceful design related databases available were used to conduct my search, i.e., *Engineering Village* and *Design & Applied Arts Index*.

The *Engineering Village* is a database for applied engineering and often includes the most relevant industrial design literature. Using the search phrase: “industrial design” and (politic* or ideology or oppression or feminism), generated 153 articles from this database. The 153 articles were examined to identify relevant article titles. The chosen articles were then filtered by reading abstracts and if relevant, the complete article. Four articles were identified as relevant because they each engage in discussions on design, politics, and societal implications, and these are as follows:


The remaining articles primarily focused upon design education, ecology and environment, and specific products or systems, and did not discuss the relationship between design as a discipline and politics or oppression.

The other database in the field of design that was searched was the Design & Applied Arts Index. This database covers the development of design, new designers, and design history and includes literature on all aspects of design and crafts such as industrial design, graphic design, fashion and textiles, architecture, sustainable design, advertising, product design, and more. To use a similar search as I did in the previous database, the search phrase: design and (politic* or ideology or feminism or oppression), generated 4,702 articles. To narrow this focus on core articles, I used the following search terms: design and politic* and (oppression or feminism), which narrowed the field to 70 articles. The articles were filtered again by first scanning the article title, the abstract, and finally reading the full article. Three more articles were deemed relevant as follows:


The remaining articles primarily focused upon feminism, politics, and activism and topics such as fashion, art, media, and history, while these three articles focused on design as a discipline and its implications in a socio-political sphere. Because this approach resulted in so few articles, a different method was then adopted. This lack of articles on the topic at hand may be related to the fact that this database includes mostly articles from applied industrial design and crafts and focuses less on the social science and humanities aspects of design.

Since design literature is not situated within any one discipline or database, I chose to conduct an integrative literature review, as it is an approach that can often address a new or emerging topic by reviewing, critiquing, and synthesizing literature to produce new perspectives or frameworks (Torraco, 2005). More specifically, an integrative review allows for “holistic conceptualizations” and offers new perspectives that attempt to extend beyond existing knowledge rather than summarize literature (Torraco, 2005). The integrative literature review I followed involved a series of steps to synthesize a selection of available literature on design, power, and politics to form new relationships between concepts. The snowball technique was used as an alternative to the use of database searches (Wohlin, 2014). I chose this technique because it uses both references and citations in what is known as a systematic way to conduct backward and forward snowballing (as seen in Figure 2) and that enables discovery (Wohlin, 2014).
The application of the backward snowballing approach led to the identification of additional papers to include into the analysis by searching and exploring the bibliography of the articles previously identified and examined earlier (Wohlin, 2014). One disadvantage to this method is that by searching retrospectively, the sources continue to pre-date the previous one (Breda University of Applied Sciences, 2022). To counter this, forward snowballing is used to find relevant sources by identifying papers that cite the paper being examined (Wohlin, 2014) which identified even more recent literature.

Throughout the review, my focus was on synthesizing the works of scholars and by taking a bottom-up approach to derive themes and patterns (see Bandara et al., 2015).
This is where I discovered the concept of dominant design which later became a key theme of this literature review. To better understand the operations of dominant design, the process entailed many cycles of reviewing and synthesizing relevant literature. Sub-themes were discovered in an iterative process as I developed an “understanding and appreciation of what [was] in the literature and, hence, what [was] worthy of being reported” (Bandara et al., 2015, p. 157). This resulted in identifying the main principles and respective features of the concept of dominant design (as seen in section 3.3). Concurrently, to better understand the operations of dominant design, I explored some key concepts of power, that is, power-knowledge, discourse (Mills, 2003), and the matrix of domination (Collins, 2000).

### 2.2.1.2 The Double Diamond model

To be better equipped to understand how to address issues of power and oppression in and by design through design processes, I needed to understand how dominant design operates in practice. To do this, I identified a mainstream design process, i.e., the Double Diamond model, to further examine and exemplify how the major features of dominant design are embodied in practices of design, and to understand how the matrix of domination works through dominant design practices. I discuss the relevance of Double Diamond model in the field of design, and why I chose to study it, which can be found in section 3.4. As the Double Diamond model is applied in practice, I had to adopt a traditional search for literature as it is not discussed in academic literature in a systematic way, I therefore primarily relied on grey literature authored by
practitioners. From this literature I derived information about its emergence, main characteristics, relevance and how it was adopted and used in design.

A critical analysis of the Double Diamond model was conducted using the identified principles of dominant design discussed in the literature to inform the analysis of its attributes. This enabled me to understand, and show, how features and principles of dominant design are embodied in mainstream methods, tools, and processes, how they work in practice, and to briefly reflect on their implications.

2.2.1.3 Literature review on intersectionality

The concept of intersectionality and its application in design was an initial interest of mine, and it was only through the literature review on design, power and oppression that my initial intuition on the potential of the concept of intersectionality as being important to address unequal distributions of power in and through design was confirmed. The literature review described above, pointed to intersectionality as a key concept to understand how issues of oppression and dominant paradigms could be challenged, which further outlined the need to explore the concept of intersectionality in-depth.

Therefore, in the second step of the preparatory phase, I conducted a literature review on intersectionality to enable an understanding of the concept, its emergence, major features, current application, and related challenges. Specifically, after consulting with Carleton University’s librarians, a search was conducted exploring two other databases, that is, Scopus and Web of Science, as these are well-established, kept up to date, and include a wide range of literature from different fields. Using more than one
database also allowed for a cross examination to identify the most relevant literature on
the topic. The search word “intersectionality” was used in both databases by searching
the titles and the abstracts. The results were first filtered by most cited to identify the
most prevalent literature on intersectionality. Unfortunately, many of the most cited
sources were case specific and did not focus on the study of intersectionality but its use
within a specific field such as education. I, therefore, filtered the results by relevance and
cross-examined these with the other database to identify important literature on
intersectionality.

In addition to the database search, a selection of important literature on feminism
and the emergence of intersectional feminism was referred to. Here I relied on the
knowledge and expertise of Dr. Brittney Anne Bos, a feminist scholar and gender
historian from the department of Women and Gender Studies at Carleton University who
curated this list of sources. After reviewing and synthesizing the literature, I was able to
identify the elements of intersectionality and some of its main challenges (as seen in
section 4.1).

After this, I needed to better understand how and if the concept of
intersectionality had been addressed by design scholars. To do this, I conducted a search
across key design journals that focused on social and political aspects of design (as seen
in section 4.2). Since there were so few results emerged, and because adopting
intersectional feminist thought means critically and actively engaging with intersectional
discourse (Collins, 2015), I again adopted the snowballing technique and looked for
works outside of design journals that positioned themselves as working directly with
intersectional feminist thought. Three works describing different approaches that
introduce intersectionality in design were identified and selected (more information on the selection criteria can be found in section 4.2). The following are the works I chose to investigate in this thesis:


The approaches discussed in these works were examined to better understand how intersectional thinking had been implemented in the design process. Specifically, each approach includes a set of design principles which were used for the analysis in the following phase.

### 2.2.2 Analytic phase

As mentioned, to understand how and if intersectional thinking had been implemented in design processes, I identified 3 design approaches that aim to implement and engage with intersectional feminist thinking in processes of design. The main sources of information for each approach were identified, collected and reviewed in their entirety, i.e., the documents written by the authors to introduce, describe and explain the approaches. These are *Design Justice, Data Feminism* and *Towards an Intentional Intersectional Practice* (see section 4.2).
To better understand if and how these approaches systematically implemented intersectional thought in design processes, I chose a deductive coding approach since it is often used to test theory (Skjott Linneberg & Korsgaard, 2019). A deductive approach may use theoretical concepts as codes which have been identified from the existing literature to analyze the findings (Skjott Linneberg & Korsgaard, 2019). As previously discussed, through reviewing the literature on intersectionality, I had already identified the elements and main challenges of intersectionality, therefore these became key categories of analysis when examining this literature since they align with the theoretical foundations of intersectionality (see sections 4.1.1 and 4.1.2). These categories are as follows: pluralism, contextualization, engagement, and evaluation. The categories established a set of pre-defined descriptive codes to analyze the 3 design approaches. Descriptive coding allows the researcher to identify statements or segments of data and assign them to a summarized word or short phrase (Saldana, 2009). Therefore, each set of principles in the 3 design approaches were analyzed in-depth and specific segments of data were assigned to the pre-defined descriptive codes. I created tables to organize my observations when analyzing each approach (Appendix E). These tables were structured to assign the principles to the descriptive codes in an initial round of coding and then further analyzed to identify how the principles addressed the implementation of intersectional thought in design processes. The summary of the in-depth analysis can be found in Chapter 5 and the detailed analysis of each approach can be found in Appendices A-D. The findings and categories of analysis in this phase informed and guided further discussions on the implementation of intersectionality in design processes and how this may be used to counteract dominant design, as seen in Chapter 6.
2.2.3 Synthesis phase

To inform discussions on implementing intersectional thinking in design practice and how to counteract dominant forms of design, this phase involved synthesizing findings from the analytic phase. Data triangulation was used as a qualitative research strategy (Flick, 2004) to interpret the findings from the analytic phase. This involved a triangulation between the 3 analyzed design approaches, theories of intersectionality and power, and the practices of dominant design that emerged through the analysis of the Double Diamond. This triangulation enabled me to structure and engage in discussions on the aspects of intersectional thinking that are embraced and addressed by existing design approaches on the topic, what still need to be addressed and why, and how current approaches are counteracting dominant design through design practice. Through this synthesis, the emphasis on collaborative design processes emerged as an important concept. Therefore, this prompted me to also include participatory design literature to offer insights and enrich these discussions, as will be seen in Chapter 6.

2.3 Summary

The research process I undertook was an exploratory and experimental approach and followed several stages of synthesis and analysis of secondary literature to critically bring discourse on design, power, and feminism together. This process enabled understanding of how current mainstream design practices operate and how the introduction of intersectionality may change dominant ways of thinking in design to better address unequal distributions of power.
It is important to highlight the research focused upon academic knowledge and institutionalized design processes. This provides an understanding of the operations of design and critically discusses the knowledge that is spread to future designers worldwide and also contributes to the identification of how to adopt and/or make space for new ways to conceptualize mainstream design practices. A challenge to the research approach is that intersectionality and power relations are dynamic concepts and processes and may not be discussed explicit in topics of power and oppression. Considering this, a survey and synthesis of a wide range of secondary literature and a focus on theory does provide the means to define the relationship between design, power, and intersectionality.

Lastly, it should be noted that throughout this thesis I use the word design with a lowercase ‘d’ to represent the plurality of design and its numerous interpretations of knowing and doing as opposed to a capital ‘D’ which may be seen as reductive and used from a position of power (de Almeida, 2021).
Chapter 3: Power relations and design processes

As discussed, understanding and addressing complex issues at the intersection of design and politics also requires an understanding, analysis, and engagement with mechanisms of power. Therefore, in this chapter, I explore key concepts of power, such as power-knowledge, discourse, and the matrix of domination to understand how design works to enforce and reproduce unequal distributions of power. In doing so, I will also point out principles within dominant paradigms of design and analyze a mainstream design process to further exemplify how these principles are structured and operate.

3.1 Power relations

Power is an elusive concept that has been studied, conceptualized, and contested by scholars in many disciplines. According to Flor Avelino’s (2021) article about power and social innovation design, where she studies theories of power and points of contestation for social change, scholars such as Talcott Parsons, Steven Lukes, Anthony Giddens, Stewart Clegg, Mark Haugaard, and Michel Foucault discuss important conceptualizations of power. Notably, French philosopher, Michel Foucault, is well known for his reconceptualization of power and how power operates in different dimensions of human interaction.

Foucault emphasized that an analysis of the mechanisms of power is not a general theory to define what power is, but, an analysis to understand the ensemble of procedures which constitute what power is (Foucault, 1978 as cited in Kelly, 2008). Therefore, there
is no totalizing theory of power, nor is there a singular definition, rather, it is an ongoing conceptualization that ought to be continuously examined (Kelly, 2008). A common and generalized understanding of power however is that it is seen as something that is possessed by individuals or institutions and is concerned with oppression and constraint (Mills, 2003). In other words, those in positions of power or dominance, hold power and impose the will of an individual or group on others, forcing and controlling them from a top-down approach (Collins, 1990; Mills, 2003). Foucault rejects this interpretation, as power is much more complex and instead should be thought of as a system of “relations and strategies dispersed throughout a society and enacted at every moment of interaction” (Mills, 2003, p. 30). Power, therefore, dictates and organizes how people behave and act in society through a complex network of relations that circulate at sites of interaction. Individuals and institutions thus act as sites where power operates, or as vehicles for power to be exercised. Understanding how these relations emerge and operate requires an examination of the relationship between power and knowledge.

As Foucault points out power and knowledge have a correlated and reliant relationship. Power and knowledge exist in conjunction, therefore, “it is not possible for power to be exercised without knowledge, it is impossible for knowledge not to engender power” (Foucault, 1980 as cited in Mills, 2003, p. 69). This suggests that relations of power rely on knowledge production to sustain and circulate effects of power, thereby, producing knowledge is always political and is directly involved in furthering operations of power (Wong, 2007). The production of any knowledge may aid in maintaining the status quo and current power relations (Mills, 2003), regardless of the intended outcome. Foucault refers to this relationship as *power-knowledge* (Foucault, 1980 as cited in Mills,
2003). Here, Foucault is less concerned with the specific knowledge that is produced and instead focuses on the exclusionary processes which produce and establish certain knowledge as fact at the expense of others (Mills, 2003).

In this regard, what is relevant are his reflections on the relationship between power and *discourse*. Discourse is concerned with all statements that form systems which structure the way reality is perceived and the process in which those statements are circulated over others (Mills, 2003). Since the exercise of power corresponds to defining and perceiving reality, discourse always embodies power and supports the production of knowledge by constraining perceptions and reinforcing certain narratives of reality over others. Discourse exists because of “a complex set of practices which keep them in circulation and other practices which try to fence them off from others and keep those other statements out of” (Mills, 2003, p. 54). This means that discourse is less concerned with the ideologies or values that are in circulation and more concerned with the processes and procedures that enable certain discourse to come into being as dominant forms of knowledge while disregarding and continuously subordinating others. Although this process marginalizes or devalues discourse that lies at the margins, discourse may also provide an opportunity to enact change since it exposes power imbalances (Kelly, 2008). The ongoing analysis of power-knowledge and discourse supports understanding of how power relations operate and work to exclude or marginalize certain discourse or knowledge in society and thus may also be useful in identifying points of resistance.

Based on these conceptualizations, design is a mechanism of power, since design as a discipline, practice, and materialized outcome, are considered as forms of knowledge or discourse that are both informed by power relations which either sustain or contest
relations of power. Therefore, existing design discourse fosters dominant forms of knowledge that may actively participate in maintaining and enforcing exclusionary practices. Consequently, these exclusionary practices may be reflected in the designed outcomes that emerge from dominant forms of knowledge, as discussed further in section 3.3, where I discuss dominant design.

3.2 The matrix of domination

Many feminist theorists such as Judith Butler, Irene Diamond and Lee Quinby, and Dorothy Smith, for example, reference Foucault’s critical thinking in their work since they share interests in local and intimate operations of power and how discourse may sustain and produce hegemony and marginalize other discourse (Mills, 2003). Influential Black feminist and sociologist, Patricia Hill Collins, examines how gender, race, class, and relations of power operate in different societal domains. Collins conceptualizes operations of power from a Foucauldian perspective by applying his concepts through her sociological model, namely, the matrix of domination. The matrix of domination emerged from Black feminist thought which confronts race, gender, and class oppression as interlocking systems, and emphasizes the importance of knowledge as an agent of empowerment (Collins, 2000). Black feminist thought reconceptualizes power or “the social relations of domination and resistance” by offering a different way of thinking about oppression and resistance (Collins, 1990) in various realms of society. Although the matrix of domination is developed from the standpoint of Black women in the United States, the matrix is not limited to an analysis of gender and race but can be used to
examine other identities (e.g., ability, class, age) and how they may intersect and interact with relations of power (Collins, 2000).

To better understand the interconnected web of power relations, the matrix of domination is organized in four different domains, namely: structural, disciplinary, hegemonic, and interpersonal. These four domains are identified as sites where “intersecting oppressions originate, develop, and are contained” and thus may also be potential sites of resistance (Collins, 2000, p. 228). This means that these domains highlight contexts where certain groups might experience injustices that have been developed and sustained within them. Since these domains reveal instances of power imbalances and support in understanding how they operate, they may also be considered sites where unequal relations of power can be challenged. Although the matrix of domination categorizes sites of oppression in four separate domains, arguably by scale, the domains should not be thought of as hierarchical nor mutually exclusive as they are interconnected and work together in a complex system to organize, manage, and reproduce relations of power. The four domains will be elaborated below.

According to Collins (2000), the structural domain of power involves large-scale, interlocking social institutions and how they are organized to reproduce oppression. Social institutions such as schools, banks, the media, the legal system, the housing industry, and the health care system, for instance, reproduce or enforce exclusionary practices through policies and procedures. Racially segregated public schools that intentionally intended to exclude people from society, or policies that did not grant women the right to vote, are examples of how social institutions codify inequality into
structural systems. To combat oppression in the structural domain, there must be a transformation of social institutions that are reinforcing exclusion.

While the structural domain explicitly encodes injustice in its operations, the disciplinary domain of power manages power relations “not through social policies that are explicitly racist or sexist, but through the ways in which organizations are run” (Collins, 2000, p. 280). In other words, the disciplinary domain relies on bureaucratic hierarchies and techniques of surveillance to exclude people from society rather than explicitly encoding inequality in social policies (Collins, 2000). For example, although most women gained the right to vote in the U.S in 1920, other bureaucratic voting laws such as the requirement to pass a literacy test, or residency requirements indirectly excluded people who were not “property-owning white men” (D’Ignazio & Klein, 2020, p. 6). To counteract and resist unequal distributions of power within this domain, Collins (2000) states that change must come from within organizations themselves and how they are run.

The structural, disciplinary, and interpersonal domains would not be able to function without the hegemonic domain of power since it “acts as a link between social institutions (structural domain), their organizational practices (disciplinary domain), and the level of everyday social interaction (interpersonal domain)” (Collins, 2000, p. 284). The hegemonic domain is characterized by practices that justify power dynamics in the other three domains by manipulating ideology and culture (Collins, 2000). For example, the externally mainstream idea of beauty that has circulated through mass media, culture, and any other means that enforce the mainstream narrative, results in many African-American women disliking their skin colour, or hair texture because it does not adhere to
the hegemonic idea of beauty (Collins, 2000). Resistance in the hegemonic domain entails producing knowledge that challenges or dismantles hegemonic ideologies and that embraces self-identity rather than societal norms.

The effects of the three domains can be seen in the *interpersonal domain* since it is concerned with the everyday experiences of individuals and how they experience and deal with forms of oppression. This domain “functions through routinized, day-to-day practices of how people treat one another (e.g., microlevel of social organization)” (Collins, 2000, p. 287). Oppressive interactions and practices in this domain often go unnoticed since they are systematic and so familiar. For example, Collins (2000) describes that her daughter’s kindergarten classmate (i.e., a blue-eyed blonde-haired boy) brought a Black, bald, male doll to school. To Collins (2000), this demonstrated that the mother who gave her son that doll took a personal stance against racism, sexism, and heterosexism in one small action. This may be considered a strategy of resistance in the interpersonal domain since knowledge was used to empower individuals instead of exploiting or objectifying members of subordinated groups.
Figure 3. **Conceptual diagram of the operation of the matrix of domination**

Figure 3 illustrates the interconnected nature of the domains where each black dot represents a site where power is exercised and can also be characterized by different domains of the matrix of domination. These four domains of power offer a conceptualization to better understand the complex and interconnected interactions between people, systems, services, environments, and power in society. Design is deeply entangled in all four domains and interactions of power since, as outlined in the examples provided above, design concerns the envisioning and creation of the structures and devices that enable power relations in and between the four domains. For instance, the structural and disciplinary domain might be concerned with how design institutions either
support or challenge laws, policies, and practices through educational practices. Whereas the hegemonic domain might consider circulating certain ideas of design or tools, processes, and artifacts over others. The effects of these operations can be seen in the interdisciplinary domain where designed artifacts may either affirm or deny aspects of an individual’s identity (Costanza-Chock, 2018) and affect everyday experiences. This suggests that the matrix of domination may be used to better understand the relationship between design and power and how specific design practices may directly engage with the matrix of domination to reinforce and reproduce forms of oppression and privilege in society. The relationship between design and the matrix of domination will be further explored in the following section, specifically, in section 3.3.4.

3.3 Dominant design

As previously stated, power-knowledge works to establish certain discourse over others, leading to the formulation of dominant bodies of knowledge. Similarly, mainstream design discourse, which includes all design methods, processes, and tools for world-making that have been widely accepted as ways of practicing design, may lead to the erasure of other ways of knowing and designing (Prendeville & Koria, 2022). This process of establishing normative ways of designing, thereby, othering marginalized design practices, results in the formation of dominant design. Dominant design, as a concept, exemplifies how design directly engages in relations of power and oppression, particularly within the hegemonic domain of power. To better understand dominant design, its emergence, its key features, how dynamics of power are exercised, and what can be done to counteract them, it is useful to examine the history of design theory and
practice. By exploring the names of key design scholars such as Nigel Cross; Donald Schön, Rittel and Webber; Bruce Archer; Christopher Alexander; Herbert Simon; John Chris Jones; Richard Buchanan; among others and the evolution of design theories, it can be argued that design theory has been shaped by a handful of people mostly from the United States and Europe (Akama & Yee, 2016; see also Frankel & Racine, 2010; Schultz et al., 2018) and their approaches became recognized as being the appropriate way of teaching design. As a result, it can be suggested that mainstream design discourse consists of Anglocentric/Eurocentric ways of knowing, acting, and seeing, and largely excludes many voices and worldviews from the development of design theory, the practice of design, and the fruition of design outcomes (Decolonising Design Group, 2017).

Design scholars and practitioners have begun to establish a discourse that points to fundamental issues instilled in design processes and the resulting implications due to operations of dominant design (for example see Costanza-Chock, 2020; Light & Akama, 2014; Schultz et al., 2018). Through a synthesis and analysis (see section 2.2.1) of these discussions, I identify three principles of dominant design that work to sustain and reinforce its operations: (1) institutionalization; (2) universalism; and (3) solutionism.

### 3.3.1 Institutionalization

Dominant design discourse is produced and maintained through a process of *institutionalization*. The process of the institutionalization of design works to recognize design knowledge and establish design as a discipline and accepted practice (Del Gaudio et al., 2021). Therefore, the process of institutionalization inherently engages with
relations of power by continuously producing and disseminating certain realities over others. That is, the process of institutionalization defines all behaviours that will be learnt and imposes certain ways of being (Del Gaudio et al., 2021). As certain discourse is established by “expert” knowledge and institutions, they are assumed to be universal, impersonal, and standardized (Escobar, 2018). As a result, institutionalized discourse dominates over others by disregarding possible or existing alternatives and normalizing the institutionalized version. Historically, institutionalizing design as a practice and discipline enables some design methods, tools, and knowledge, to dominate over others and to then be widely recognized as best practice. This has affirmed and strengthened dominant design practices as the accepted way of practicing design over alternatives or localized knowledge (Del Gaudio et al., 2021). People (future designers) are then only exposed to and experience institutionalized design practices which shape their reality of design and prevents them from knowing or acting differently (Del Gaudio et al., 2021). In this regard, some scholars express their concerns about how universities may act as sites which legitimize and circulate particular design knowledge to students, the academic community, and other universities worldwide thereby maintaining dominance over knowledge production from positions of power (Noel, 2020; Schultz et al., 2018).

### 3.3.2 Universalism

The process of institutionalizing design pushes the relevance of universalizing characteristics forward to strengthen the dominance of mainstream design. Therefore, mainstream design methods and processes often aspire for *universalism* (S. Bardzell, 2010; Rosner, 2018). Universalism supports the idea that norms, assumptions, and the
knowledge they are based on are generalizable to every situation irrespective of culture or context (Prendeville & Koria, 2022) meaning design knowledge, models, artifacts, methods, or processes may be reproduced and applied to any scenario (Akama et al., 2019). These design practices, therefore, become powerful tools which may transcend culture, time, places, and people (Akama et al., 2019; Akama & Yee, 2016). As a result, they may be spread and disseminated widely across contexts. Some early design theorists sought to create universal rubrics of design by codifying previous design methods, generalizing how design is practiced, and even going so far as to include a “checklist” to chart universal design ambitions (Rosner, 2018).

Other views of universalism in design practice have emerged over time such as the notion of “designing for all”, regardless of age, gender, ability, culture, class, etc., which emerged as a way to approach accessible design in the built environment (Erkiliç, 2011). Although the intention may be righteous in its attempt to include all people, universalism may erase differences and reinforce exclusionary practices (Costanza-Chock, 2020). In other words, universal approaches are often depoliticized and homogenous in that they assume shared experiences and are disconnected from political realities. Consequently, users are often assumed to belong to a homogenized or dominant group of consumers. For instance, designed artifacts, systems, and the built environment are mostly based on “normative” body types and thus designed in ways that exacerbate disability oppression (Cachia, 2016; Davies, 2016). Or even, risk assessment systems are designed based on what is considered “normal”. As such, disabled people have a higher chance of being flagged as a potential risk in airport security if they have non-normative bodies, or use wearable or implanted medical devices for example (Costanza-Chock,
Design processes and models that bear universal aspirations, therefore, tend to overlook social and political complexities (Akama et al., 2019; Schultz et al., 2018). Consequently, Human-Computer Interaction scholar and feminist, Shaowen Bardzell (2010), rejects claims of universalism in design on the basis that humans are “too rich, too diverse, and too complex a category to bear a universal solution” (S. Bardzell, 2010, p. 1306). Universal solutions subtly work to eradicate differences and complexities which enforce normative views and eliminate the discovery of possible or alternate ways of being (Hamraie, 2016).

### 3.3.3 Solutionism

Dominant design tends to align with certain aspects of solutionism. The concept of solutionism is based on the ideas of author and researcher, Evgeny Morozov (Morozov, 2014), who coined the term technological solutionism which questions the belief that technological devices and services can be relied upon to solve social and personal problems in society (Cramer, 2014). In the context of modern western societies and organizations, solutionist thinking is directly linked to a mindset of problem-solving, which works to shape political and social relations by problematizing certain realities over others (Edwards et al., 2021). Similarly, early design theorists and practitioners who attempted to understand the processes and methods of design practice emphasized design’s problem-solving features (see Dubberly, 2005). For instance, design practice often focuses on changing an existing situation into a desired outcome and developing new or alternative solutions of what ought to be instead of what is (Kimbell, 2015; Simon, 1996). In this sense, design is often seen as “a means to achieve specific ends”,
which has enabled a doctrine of solutionism to spread and become embedded within many processes and practices of design (Rosner, 2018). Considering the widespread need for solutions and belief in the potential of technology, this has strengthened the recognized value of dominant design practices.

In this regard, many conventional design processes follow a binary problem-solving logic by beginning with a problem statement and ending with a definitive solution. This binary logic often limits possible outcomes of a project since the problem and solution are correlated entities, in other words, the way the problem is framed directly affects possible solutions. For instance, problem statements are often reductive and do not acknowledge the “wickedness” or complexity of an issue (Tharp & Tharp, 2018). Breaking down complex or ill-structured problems into well-structured, smaller-scale problems simplifies design problems (Rosner, 2018). This approach takes away the social and political complexities (Rosner, 2018) and is, therefore, more pragmatic and likely to produce desirable (cookie-cutter) outcomes. However, understanding or framing the problem is arguably the most important step in the design process (Costanza-Chock, 2020) therefore when the problem is over-simplified, it may lead to negative implications. The simplification and reduction of a problem disconnect the designer from critically analyzing and addressing the root causes of an issue (Montuori, 2008). In this way, the problem is then also framed from a particularly situated perspective. Therefore, the manner in which a design problem is constructed or framed predefines outcomes and may limit or completely exclude possible solutions (Costanza-Chock, 2020; Edwards et al., 2021).
Solutionism and its respective features often conform to existing favoured relations of power relations and therefore may be an appealing strategy to adopt. This may be seen in the popularization of design as innovation. As design problems are simplified, they open opportunities for fast-paced solutions that can be delivered in a timely manner which is what managerial structure strives for to promote innovation. Almost all areas of design are concerned with pushing innovation through designed artifacts and social interventions (Williams, 2019). Innovation may be associated with incremental change that produces transformations but avoids costs of time and effort (Suchman & Bishop, 2000). The resulting transformations may be produced in a timely and realistic manner but may limit possibilities to address issues in their complexity and at their root.

3.3.4 Summary

Table 1 below provides an overview of the three principles, that is, institutionalization, universalism, and solutionism, and how their respective features enable operations of dominant design.

<table>
<thead>
<tr>
<th>Principles</th>
<th>Features</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutionalization</td>
<td>Perpetuation and affirmation of certain productions of knowledge as best practice.</td>
<td>“Expert” knowledge formed by institutions and people in positions of authority/privilege that repeat and strengthen the same knowledge and worldview. Certain design knowledge institutionalized as normative discourse thereby excluding local and</td>
</tr>
<tr>
<td>Principles</td>
<td>Features</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>----------</td>
<td>-------------</td>
</tr>
<tr>
<td>Universalism</td>
<td>alternative points of view. Homogenization of knowledge, practices, and processes.</td>
<td>traditional knowledge and other possibilities of reality. Generalized methods and practices that cut across culture, context, and time.</td>
</tr>
<tr>
<td></td>
<td>Widespread.</td>
<td>Mainstream discourse that is widespread and used in design practice everywhere regardless of context.</td>
</tr>
<tr>
<td></td>
<td>Depoliticized.</td>
<td>Apparent lack of engagement with socio-cultural issues and lacks specific direction for transformative processes.</td>
</tr>
<tr>
<td>Solutionism</td>
<td>Problem-solving mindset.</td>
<td>Binary problem-solution methods of design that also problematize certain situations over others.</td>
</tr>
<tr>
<td></td>
<td>Favoured by dominant power relations.</td>
<td>Pragmatic, fast-paced processes are desired by managerial practices and existing economic systems, since they may seek profitable, innovative, productive and efficient outcomes.</td>
</tr>
<tr>
<td></td>
<td>Simplification of design problems.</td>
<td>Simplified design problems that are framed from a particular perspective limit possible solutions and do not address root causes.</td>
</tr>
</tbody>
</table>

As seen in Figure 4, the process of institutionalization works to establish certain design practice through a system of knowledge production and institutions and people in positions of power. This is then materialized through discourse (and related artifacts) thereby affirming that knowledge as the accepted best practice. In doing so, this justifies its own operations and continues to produce knowledge from that worldview, thereby, excluding others. Institutionalized design discourse not only tends to benefit from existing power relations but also enforces and upholds relations of power that strengthen the status quo and result in the manifestation of dominant design. As the process ensues, dominant ways of knowing or dominant realities continuously exclude or devalue other
possible alternative realities (Figure 4). In this regard, universalism and solutionism can be seen as mechanisms that strengthen and enable this process (this will be further explored in section 3.5).

Figure 4. The process of institutionalization

Furthermore, the process of the institutionalization of design practice and the production and normalization of dominant design principles such as universalism and solutionism are part of the operation of the matrix of domination. The process of institutionalization uses social institutions, their organizational practices (structural domain), and the ways in which they administer those practices (disciplinary domain) as means to enforce dominant discourse: for example, they may encode strategies of
universalism and solutionism in policies and procedures either implicitly or explicitly. Design institutions and those in positions of authority or privilege may also adopt certain regulations or procedures that support doctrines of universalism and solutionism.

Regarding the hegemonic domain, dominant institutions and the people involved function as vehicles of power to circulate certain ideas and methods of design to other design institutions, students, practitioners, and the public. In this sense, the hegemonic domain works as a link between all other domains to spread and justify doctrines of universalism and solutionism, thereby, manipulating design culture and ideology. The implications of this process can be seen in the interpersonal domain as dominant practices and discourse of design influence and shape everyday experiences. For example, this might mean that an individual experiences the feeling of alterity because dominant discourse does not consider their individual identity in the process of design and therefore devalues their way of knowing and being.

### 3.4 The Double Diamond

To better understand and exemplify how dominant design operates within the practice of design, I chose to examine one of the most well-known design processes, namely, the *Double Diamond* model, because of its widespread influence and recognition in the field. This choice is also based on this being one of the main design frameworks that I was taught during my design education at the School of Industrial Design at Carleton University in 2014 - 2019. In this section, I will discuss the history and relevance of the Double Diamond model, its attributes, and how it has been adopted within the field of design.
3.4.1 Background

Since the 1960s, many design researchers and practitioners have attempted to theorize and conceptualize the ways in which design is practiced (see Frankel & Racine, 2010). Significant figures such as Nigel Cross, Richard Buchanan, Herbert Simon, Peter Rowe, and others, have contributed to the development of *design thinking* (Kimbell, 2015) and proposed various methods to make “designerly” ways of knowing and design methodology explicit. These influential design research efforts are well known and highly accredited in the field of design, but it was not until the popularization of design thinking that design practices became more mainstream (Kimbell, 2015). There is no consistent definition of design thinking, but it is generally understood that design thinking is a concept which attempts to encompass and define strategies or methods to approach complex problems in the context of design (Dorst, 2011).

The idea of design thinking was recently popularized by IDEO, one of the world’s most influential global design companies that aim to create a “positive impact through design” (IDEO, n.d., para. 1). Design thinking was developed as a way for designers and non-designers to approach innovation and complex problem solving (Costanza-Chock, 2020; Kimbell, 2015; Meroni & Sangiorgi, 2016). Despite the lack of research and literature on design thinking processes, IDEO, along with other accredited design organizations, disseminated their approaches and justified the value of design as an important contributor to creative and innovative processes to grow market share and/or improve user satisfaction in the public sector (Kimbell, 2015; Tschimmel, 2012).

In particular, the *Design Council*, a highly accredited design organization based in the UK, developed some of the most renowned design thinking tools in the practice of
design. The Design Council was formed in 1944 to support the British economy (Design Council, n.d.-a). Over the years, the Design Council continued and still does demonstrate the value of design value to the UK economy and has since evolved to be a worldwide leader in disseminating design research and tools, and how to apply them in the public sector (Design Council, n.d.-a). Although IDEO played a major role in contributing to design thinking and paving the way for the development of mainstream tools and methodological approaches to design, the Design Council stressed that there was not yet a standardized way to describe the design process (Ball, 2019). A team of designers at the Design Council, led by the Director of Design and Innovation at the time, Richard Eisermann, sought to accept the challenge of creating a framework to empirically define the design process in a coherent manner (Ball, 2019). In 2004, the team developed the Double Diamond model as a result but acknowledged that their model was built upon the work of influential design researchers and practitioners over the years (Ball, 2019). For example, similar models did exist in the 60s, but they were not shared more broadly with the design community (Ball, 2019). By analyzing and codifying commonalities across earlier design processes the Double Diamond model was produced (Design Council, 2007).

The model is arguably the most well-known mainstream design process and is used by designers, educators, technologists, policy makers, CEOs, and so on (Ball, 2019; Tschimmel, 2012). The Double Diamond model depicts the most common phases of most design or innovation projects (Ball, 2019) showing how these processes diverge to explore an issue more broadly and then converge to take focused action (Design Council, n.d.-b) as seen in Figure 5 below.
Figure 5. **The Design Council’s Double Diamond design process** (Lipiec, 2019)

The model is sometimes referred to as the 4 D model because of its four distinct stages, i.e., *Discover, Define, Develop, and Deliver* (Tschimmel, 2012). The four stages will be described in more detail along with their key characteristics:

1. **Discover:** The first phase, begins with an investigation of the project’s problem and focuses on identifying user needs (Ball, 2019). In this stage the model is diverging, meaning designers are looking outwards to conduct market and user research (Design Council, 2007) to better understand the problem at hand. Market research involves tracking a company’s products and services, brand and customer satisfaction, and competitors to identify gaps for potential innovation or improvement (Design Council, 2007). Whereas, user research is qualitative and may be quantitative so as to identify opportunities for creating products or services that address user needs (Design Council, 2007). This stage might entail activities such as
stakeholder or user interviews, data mining, ethnographic studies, contextual inquiry, and mind mapping.

2. **Define:** The second phase narrows with the analysis of the findings, resulting in a clear and well-defined brief that states the project’s challenge or problem statement (Ball, 2019). This stage narrows down the problem and may apply methods and tools to define the problem and target users, such as personas, and affinity mapping (Schicker, 2018).

3. **Develop:** Once the project’s problem opportunity is defined, the design process moves into the third phase, *develop*. This stage is concerned with developing ideas where multiple concepts and/or prototypes are iterated upon, refined, and tested (Ball, 2019). In the develop stage designers might engage in tasks like prototyping, conducting workshops, usability testing, creating various low-fi models, etc. (Schicker, 2018).

4. **Deliver:** The fourth and final phase of the process is *deliver*, which selects a final solution or outcome and prepares for launch (Ball, 2019).

### 3.4.2 Model’s contributions and critiques

The Double Diamond model represents the basic steps in most mainstream design processes. Although there is no single model that universally describes the design process (Clarkson & Eckert, 2005), a member of the Design Council stresses that the Double Diamond model is predominantly effective in exposing the “invisible” processes of design (Drew, 2019), as well, it showcases the value of design in an approachable manner since it appears to be easily applicable to any scenario (Akama et al., 2019). This has
allowed many non-designers to embrace design thinking, and recognize the potential contributions it can make in business and society (Akama et al., 2019). Through the Double Diamond’s worldwide acceptance, it has become a normalized part of design language (Ball, 2019).

Nevertheless, there are critiques concerning the Double Diamond’s linear structure and simplicity (Drew, 2019). The process is presented as the four phases in sequential order, but in practice, many designers jump from one stage to another and/or iterate during the process of design, for instance, starting with developing and prototyping instead of defining the problem (Drew, 2019). As for its simplicity, the Double Diamond model is open to interpretation, yet, its lack of specificity may make it more challenging to use in more complex areas of design such as systemic design (Drew, 2019). In response to these critiques, a new model was recently introduced by the Design Council in 2019 and was named the Design Council’s framework for innovation (Figure 6), keeping the Double Diamond model as its underlying framework.
This revised model by the Design Council provides an agile structure and a detailed layer to the original model with blue arrows to depict the iterative nature of the design process (Design Council, n.d.-b) with feedback loops such as re-defining, re-developing, and re-delivering to achieve better outcomes. The Design Council also stresses that these iterative loops represent that “no idea is ever finished” and there is always room for improvement (Design Council, n.d.-b). While the basics of the Double Diamond model remain mostly the same, the updated model also incorporates language that references the involvement of participants such as end users and other designers in the discover and develop stages. For example, the Design Council (n.d.-b) stated that the
discover stage helps designers “understand, rather than simply assume, what the problem is” and involves talking to people affected by the stages of the design process and the design once out in the world. On the other hand, the develop stage encourages designers to seek inspiration from outside and to co-design with different stakeholders (Design Council, n.d.-b). This is also reflected in some of the Design Council’s design principles such as putting people first to understand their needs and working together to collaborate and co-create.

The Design Council claims that the framework supports both designers and non-designers to better approach complex global social, environmental, and economic issues (Design Council, n.d.-b), although, it remains unclear how the framework can be used to achieve such complex outcomes such as addressing inequality, sustainability, poverty, and etc.

3.4.3 Adoption in the field

The Double Diamond model is used worldwide in a variety of contexts, such as product design, education, and service design, and is used by both designers and non-designers as a tool to support the design process and communicate with clients or other stakeholders involved in a project (for example see Daly-Smith et al., 2020; Garrod et al., 2016). Since the model is situated in practice or fieldwork, and is normalized, there is little scholarly research critically examining its use. There are however dispersed blogs, projects, websites, and design portfolios where practitioners comment on and describe their experience with the application of the Double Diamond model (for example Dong,
2018; Nessler, 2016; Tudor, 2020). Here I describe what designers and non-designers have done in practice.

As seen in Figure 7, a Google image search of the term “Double Diamond model” results in thousands of images, including many variations of the process that keep the main elements and the converging and diverging phases of the process. As intended by the Design Council, the simplicity of the model allows for replicability and customizability, enabling the model to be adapted and reframed by many practitioners in the field as listed in Table 2 below.

Figure 7. Google image search of the Double Diamond model
Table 2. The Double Diamond in the field of design

<table>
<thead>
<tr>
<th>Reference</th>
<th>Area of application</th>
<th>Double Diamond use</th>
<th>Key phases of the Double Diamond adaptation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daly-Smith et al., 2020</td>
<td>Education</td>
<td>The model is used as a tool to co-develop a creative education framework.</td>
<td>1) Discover 2) Define 3) Develop 4) Deliver</td>
</tr>
<tr>
<td>Dong, 2018</td>
<td>Service design</td>
<td>Incorporates design thinking into the model to conduct service design workshops.</td>
<td>1) Information input understanding 2) Define with empathy 3) Design 4) Deliverable</td>
</tr>
<tr>
<td>Garrod et al., 2016</td>
<td>Healthcare</td>
<td>The model is used to structure the approach to co-designing and to improve the quality of care. The model process supports a level of structured creativity, guides designers through a process to better understand consumer needs.</td>
<td>1) Discover 2) Define 3) Develop 4) Deliver</td>
</tr>
<tr>
<td>May, n.d.</td>
<td>UX/UI</td>
<td>Adaption of the model meant for designers to use and further develop; the 4 phases of the model are re-split into individual activities and steps.</td>
<td>1) Discover 2) Define 3) Develop 4) Deliver</td>
</tr>
<tr>
<td>Nessler, 2018</td>
<td>UX, HCD, Creative processes</td>
<td>Approach building on the model’s process, following the process of UX teams and the research process.</td>
<td>1) Envision 2) Restrain 3) Develop 4) Deliver</td>
</tr>
<tr>
<td>Tudor, 2020</td>
<td>UX</td>
<td>The model is used to highlight the ways in which design thinking can facilitate tourism innovation by proposing different strategies at each stage.</td>
<td>1) knowledge base that supports design decision-making 2) aligning roles of the design team with the design process 3) facilitate innovation 4) design outcomes: idea development and communication</td>
</tr>
<tr>
<td>Wan, 2020</td>
<td>Tourism industry</td>
<td>The model is used to highlight the ways in which design thinking can facilitate tourism innovation by proposing different strategies at each stage.</td>
<td>1) knowledge base that supports design decision-making 2) aligning roles of the design team with the design process 3) facilitate innovation 4) design outcomes: idea development and communication</td>
</tr>
</tbody>
</table>
In Table 2 above, I provide a sample of the applications of the Double Diamond across the field of design to highlight some of the ways in which practitioners adapt and use the model in practice. As mentioned above, the samples were collected in a search across grey literature by using the search phrase: “the Double Diamond” and design. These sources were selected based on prominence of information provided, visible adaptations to the current model, and an inclusion of its application in different fields.

As seen in Table 2, practitioners in the field are mostly using the Double Diamond model to guide them through the design process and/or to map their design process. Some of the areas in which practitioners are using the Double Diamond model include service design (Dong, 2018), education (Daly-Smith et al., 2020), and healthcare (Garrod et al., 2016), but the majority of sources found were based in user experience (UX) and user interface (UI) (Nessler, 2018; Tudor, 2020). Although these fields are diverse, the models share the same underlying principles of the original Double Diamond process, that is, discover, define, develop, and deliver (or similar variations). This can be seen in May’s (n.d.) phases of the Double Diamond: 1) Discover: research; 2) Define: analysis; 3) Develop: ideation; 4) Deliver: prototyping. Several practitioners have adapted the Double Diamond model to fit their project’s needs, either by making minor customizations or major changes to the structure. Minor changes involve altering wording or adding details to the project for each step in the design process, as seen in Figure 8 below for a project that involved using the Double Diamond model as an approach to develop a whole-school physical activity framework to improve children’s physical activity levels (Daly-Smith et al., 2020).
Figure 8. Using the Double Diamond to Co-Develop an Active Schools Framework (Daly-Smith et al., 2020)

Other practitioners have made drastic changes to the Double Diamond model’s shape by playing with the symmetrical aspect of the diamonds or by adding another diamond completely (Chen, 2020; Tudor, 2020). A member of the Design Council argues that the reason many people have added diamonds or changed their shape is that the model was originally based on creative problem-solving which focused on multiple rounds of divergent and convergent thinking (Drew, 2019), and therefore, kept a kite formation. Many adaptations build upon the model but there is one variation that was popularized in design practice. As seen in Figure 9 below, Dan Nessler (2016), a UX designer and educator based in Switzerland, breaks down each of the four phases by adding detailed steps.
The few examples provided demonstrate how the Double Diamond’s simplicity allows users to easily customize it by adding layers of complexity, changing the wording, or playing with the structure of the model itself and how, overall, the Double Diamond model has been a key contributor to mainstream design practice.

### 3.5 Dominant design’s implications through the lens of the Double Diamond

This section will explain how paradigms of dominant design are embodied in mainstream methods, tools and processes, and their implications. Specifically, I will exemplify this by analyzing the Double Diamond model, its attributes, and its adoption in the field of design and discussing its implications. Table 3 provides an overview of the specific ways in which dominant design is embodied in the Double Diamond model, which will be further discussed in the sections below.
Table 3. **How dominant design is embodied in the Double Diamond model**

<table>
<thead>
<tr>
<th>Principle</th>
<th>Features</th>
<th>Embodiment in the Double Diamond</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutionalization</td>
<td>Perpetuation and affirmation of certain productions of knowledge as best practice.</td>
<td>Based on synthesizing knowledge from design theorists from the Global North and is considered as best practice by design institutions and industry.</td>
</tr>
<tr>
<td></td>
<td>Lack of engagement or exclusion of alternative points of view.</td>
<td>Taught and practiced in institutions and industry as a mainstream, established design practice over others.</td>
</tr>
<tr>
<td></td>
<td>Homogenization of knowledge, practices, and processes.</td>
<td>Generalization of the design process and assumption of one way of designing.</td>
</tr>
<tr>
<td></td>
<td>Widespread.</td>
<td>The use of the Double Diamond worldwide and as a part of design language regardless of context.</td>
</tr>
<tr>
<td>Universalism</td>
<td>Depoliticized.</td>
<td>Lack of acknowledgment of the complexities of socio-political contexts in the four stages.</td>
</tr>
<tr>
<td>Solutionism</td>
<td>Favoured by dominant power relations.</td>
<td>Accepted and sought out by managerial practices and existing economical systems.</td>
</tr>
<tr>
<td></td>
<td>Simplification of design problems.</td>
<td>Over-simplified stages of the design process.</td>
</tr>
</tbody>
</table>

### 3.5.1 Institutionalization

As previously stated in section 3.3.1, institutionalization focuses on the process in which certain design knowledge, practices, and processes are produced, justified, and reproduced, resulting in a dominant discourse that prevents other ways of being or knowing. The Double Diamond model is both a product and a mechanism of the process.
of the institutionalization of design since it reproduces and sustains dominant discourses of design. The model does this using dominant forms of design knowledge and its recognition in industry and institutions.

To understand how the model is based on dominant forms of design knowledge, it is important to look at its genealogy. As previously stated, the Double Diamond model was created by members of the British Design Council who sought to make the design process visible. However, leadership at the time, Richard Eisermann, states, that they were “standing on the shoulders of giants” (Drew, 2019, para. 9), that is, they synthesized the works of previous influential design theorists who attempted to make the design process explicit from around the 60s to the 90s (see Dubberly, 2005). These early influential design theorists were mostly men based in the United States and Europe with similar foundational knowledge that guided their perspectives on design. This suggests that the Double Diamond model is based on a centralized foundation of knowledge that is mostly Eurocentric, involving male-dominated interpretations of design practices and processes.

Considering the underlying knowledge and lineage of the Double Diamond, the model reinforces hierarchy and dominance from the Global North. This might also explain why the Double Diamond model is so popular in the Asia-Pacific region, that is, there is a reliance on knowledge production from the west or sometimes referred to as the “west knows best” attitude (Akama & Yee, 2016). In this way, the Double Diamond perpetuates the authority and privilege of a certain community of “experts” and circulates a certain approach to world-making and being over other potential alternatives. The model is further disseminated and legitimized through its incorporation in both design
education and industry. Considering the widespread popularity of the Double Diamond, the model can be considered power-knowledge or a dominant design discourse that has been produced, circulated, and justified through the process of institutionalization.

3.5.2 Universalism

Universalism can be understood as a strategy that circulates and sustains institutionalized or dominant design practices (see section 3.3.2). Universal design methods, processes, and tools are successful in widely disseminating discourse and transcending contexts because of their generalizable solutions disconnected from local problems and experiences. The Double Diamond model directly aligns with features of universalism through its generalization of the design process, lack of recognition for socio-political contexts, and widespread use across the discipline of design.

The Double Diamond model was created to standardize the design process so that it may be used in any field and with anyone involved in the process (Ball, 2019). This aspiration resembles the thoughts of early design theorists who stated that “everyone would like to find a universally useful design method” (Koberg & Bagnall, 1972 cited in Rosner, 2018, p. 32). This universalist way of thinking is presented with a positive outlook, as the Design Council’s claims that the model is “a simple way to describe the steps taken in any design and innovation project, irrespective of methods and tools used” (Ball, 2019, p. 2). This mindset can be traced back to the origins of the Double Diamond. As mentioned earlier, the model was created by identifying commonalities among the work of previous designers. For example, the main element of the Double Diamond, and what gives it its infamous shape, is its depiction of convergent and divergent thinking that
leads the designer through the four phases of the design process. This defines a clear path and way of designing that is assumed to be successful in all situations regardless of context. In this way, the Double Diamond is a generalization of dominant design processes that impose a certain way of designing as universally correct.

In terms of its depoliticized nature, the Double Diamond also reinforces a doctrine of universalism by disregarding the inherent and interconnected relationship between power, politics, and the design process. The model may be seen as politically neutral since there is no evidence of acknowledgment of the complexities of socio-political contexts in any of the four stages. For example, the model is proclaimed to be applicable in any context, however, there is no mention of how different contextual conditions such as time, location, cultural backgrounds, etc. might affect using the process.

The Double Diamond model seems to be widespread as it has become a part of design language and culture (Ball, 2019), therefore not only accepted but referenced and applied worldwide, regardless of contextual differences. Generalizing the process of design from a particular perspective while maintaining its seemingly neutral position has contributed to its development as a mainstream design method and its application everywhere.
3.5.3 Solutionism

As outlined in section 3.3.3, solutionism assumes that through simplified processes and methods of design, all design problems can be solved to produce desirable, innovative solutions. The Double Diamond possesses solutionist traits which can be seen in its problem-solving structure, simplicity, and popularity in managerial practices.

Regarding its problem-solving structure, the Double Diamond embodies a problem-solving mindset through its structural elements. As outlined in section 3.4, the Double Diamond model is made up of two diamond shapes that each represent distinct phases of the design process. The model consists of problem discovery (divergent), problem definition (convergent), solution development (divergent), and solution delivery (convergent). The first diamond involves discovering and defining the problem while the second involves developing and delivering a solution. This symmetrical structure approaches the design process in a binary way, i.e., problem/solution, where the problem and solution phases are equally weighted in the design process. This suggests or implies that they should be given the same amount of thought, time, and effort. Additionally, each diamond starts at a singular point and ends at a singular defined point. These features indicate that the design process follows a problem-solving process where the problem definition stage directly shapes a definitive solution.

The problem-solving process is also broken down into four simple, open-ended stages, implying that the design process is straightforward and easy to follow, therefore more aligned with values as productivity, efficiency, and replicability. This is seen as one of the model’s greatest strengths as its simplicity is the reason why the Double Diamond model persists (Ball, n.d.) and has become accessible and approachable by both designers
and non-designers. For example, the representation of the problem discovery stage symbolizing an openness to explore information and issues. The limited information provided leaves room for interpretation and for designers to approach the problem framing stage in any way they desire. However, in doing so this might overlook the political and social complexities that are involved in problem framing stages of design.

The Double Diamond model has become successful (and marketed as) a tool for innovation. More specifically, it has been recognized as marketable because the proposed model adheres to and emerged from favoured and accepted worldviews such as the Global North perspective, dominant design knowledge, and etc. This suggests that its features and overall structure support certain relations of power that benefit from dominant structures of power and ignores or sidelines historical and systemic issues as they may be regarded as costly and time-consuming. These other issues are also not overtly discussed in the model.
Chapter 4: Critical and feminist approaches

Decolonial design theorists argue that, excluding some important exceptions, design practice, theory, and knowledge have not developed a critical understanding to address fundamental and systemic issues of power (Abdulla et al., 2019). Critical social theories can be useful lenses of analysis to evaluate and address issues of power and injustices in design (Mazé, 2014). These critical social theories are rooted in theory developed at the Frankfurt School in the 1930s (Meekosha & Shuttleworth, 2016) which is often adversarial and aims to not only reveal and challenge how power operates in society but seeks social emancipation as well (J. Bardzell & Bardzell, 2013; Martins, 2014). Critical social theories, attempt to expose hegemonic power relations enforced and reproduced by hierarchical ideologies within a given society (Meekosha & Shuttleworth, 2016). Social theories such as poststructuralism, critical disability studies, critical race theory, feminism, decolonial, post constructivist, and queer theory, to name a few, have added layers of societal complexity and diversity that extend far beyond traditional critical theory and Marxist models (Meekosha & Shuttleworth, 2016).

Escobar (2018) recognizes the emerging movement towards adopting critical social theories as theoretical foundations in design research, but Escobar also notes, that there remains a lack of analysis on the relationship between design practice, politics, and power dynamics concerning social identities such as race, class, and gender. One critical social theory that is heavily engaging with this type of discourse is feminism.
Feminism is regarded as one of the most disruptive critical theories insofar as it advances the development of cultural studies and crosses disciplinary boundaries (J. Bardzell & Bardzell, 2013). Feminism as a theory and a practice may collectively unify critical social theories. This has allowed feminist theories to serve as strong foundations in the pursuit of inclusionary practices across contexts. Considering that feminist theories aim to open opportunities for intervention, “feminism is a natural ally to design” (S. Bardzell, 2010, p. 1302) and many design scholars are recognizing feminism as a design methodology (see Rosner et al., 2020). However, research gaps remain and opportunities for further development of design knowledge to bring feminist methodologies into practice are required. These gaps will be further explored in the section below.

The following section provides a broad overview of feminism and the more recent emergence of intersectional feminism. As an important and emerging concept in the development of feminist studies, I will discuss intersectional feminism in depth since the concept opens potential opportunities to bridge a gap between theory and practice in relation to examinations of power and design. Then, I survey how design scholars are approaching the political dimension of design through an intersectional lens. I will also look to other theories which apply similar thinking as the concept of intersectionality to understand how design and non-design scholars approach issues of oppression and marginalization through design processes.
4.1 Intersectional feminism

Intersectionality is a concept introduced by Kimberlé Crenshaw in 1989 that emerged from critical race theory and Black feminist thought (Carbado et al., 2014). Intersectionality refers to the forms of oppression and privilege that manifest through one’s intersecting social identities (Canli & Martins, 2016). Drawing from critical theory and feminism, intersectionality presented a new way of thinking about social justice and power dynamics within society and is argued to be “the most important theoretical contribution that women’s studies, in conjunction with related fields, has made so far” (McCall, 2005, p. 1771). Intersectionality emerged from a rich history of feminist discourse; here I briefly explore key turning points in feminist discourse to understand why and how intersectionality emerged as its own concept within feminism.

Feminist theorists aim to examine power and injustices to change them (D’Ignazio & Klein, 2020). Feminism’s underlying goal is to eradicate all forms of oppression, not only concerning gender but also disability, sexuality, ethnicity, class, and race, and does so by engaging in discourse around power structures such as capitalism, globalization, neoliberalism, and colonialism (Dhamoon, 2015; Mohanty, 1988; Rosner et al., 2020; St. Denis, 2007). Early Western feminism did analyze power dynamics in society and focused on the categorical analysis of women’s oppression (Scott, 1986) where women were considered to be a collective group defined and grouped together based solely on sex (in a binary sense of the word) and grounded in a narrative that solely reflected White, middle-class, cisgender women, from the Global North (Grewal, 1999; Rottenberg, 2014; Valentine, 2007). When women are defined under such dichotomous terms, this presumes “a homogenous form of patriarchy and a universal sisterhood”
(Dhamoon, 2015, p. 29), therefore disregarding contextual variations and complexities among women (Mohanty, 1988), such as ethnicity, race, class, ability, location, religion, age, and etc. Feminists excluded from the totalizing views of Western feminism expressed the need for plurality within feminism (Hall, 2008; Lorde, 1984; Mohanty, 1988; St. Denis, 2007) and sparked discourse about feminisms (Allen, 2013).

Prior to that turning point, Black women activists in the 1800s, such as Maria Stewart, Sojourner Truth, Anna Julia Cooper, and Mary Church Terrell, to name a few, recognized the overlapping injustices that specifically lay at the intersection between race and gender (King, 1988; Romero, 2018). Many of these early Black feminists spoke from their lived experiences as enslaved Black women (Romero, 2018). They expressed their experiences as both being Black and being a woman and how these are inseparable lived realities. Political activist, Angela Davis (1981), later attempted to capture some of these experiences by re-examining the history of Black women during times of slavery in the United States. She stated that “when it was profitable to exploit them [women] as if they were [Black] men, they were regarded, in effect, as genderless, but when they could be exploited, punished and repressed in ways only for women, they were locked into their exclusively female roles” (Davis, 1981, p. 6). Black women experienced forms of discrimination on both fronts on account of their race and gender. The stories and works of early Black feminists voiced the issues of living with multiple social identities and the associated experiences of oppression through the treatment of race and gender as one-dimensional entities.

Although many activists were fighting against racism and sexism, the discourse primarily centred on Black men and White women, respectively (Canli & Martins, 2016;
Carbado et al., 2014). Many Black feminists including Barbra and Beverly Smith spoke about racism and feminism as inherently overlapping issues since the very definition of feminism is “the political theory and practice to free all women: women of colour, working-class women, poor women, physically challenged women, lesbians, old women, as well as white economically privileged heterosexual women” (Romero, 2018, p. 45). This suggests that Black feminist thought inherently incorporated a multidimensional approach to feminism which was also present in feminist movements in the late 1900s.

Feminists and social activists began to acknowledge and expand upon the complex interconnectedness of social inequalities such as gender, race, sexuality, and class, and the need to critically evaluate them as interlocking systems as opposed to isolated or additive issues (Collins, 2015; Hurtado, 2019; King, 1988; Phoenix, 2006; Romero, 2018). Although American Black feminists have been core contributors to bringing race/class/gender to the forefront in academia, many other feminists across cultures such as Chicanas, Latinas, Indigenous, and Asian Americans, have all contributed to the greater social movement of recognizing the interconnected nature of race, class, gender, and sexuality through lived experience and situated knowledge (Collins, 2015). Feminists across cultures were drawn to the concept of intersectionality (Collins, 2015) and contributed to its emergence by addressing dominant universal forms of Western feminism that overlooked cultural and contextual variations (Hall, 2008; Mohanty, 2003; St. Denis, 2007).

The introduction of the word intersectionality unified the mutual rhetoric of feminists whose voices often went unheard in academic discourse. Crenshaw (1989) originally explained the problem of intersectionality by examining how Black women
plaintiffs were unprotected by anti-discrimination laws in the United States. Crenshaw (1989) discussed several cases where Black women’s claims were disregarded because the court based its ruling on sex and race discrimination doctrine that was defined by the experiences of White women and Black men, respectively. Crenshaw (1989) noted that a single axis analysis where race and gender are independent constructs does not consider the intersectional injustices that lie at the intersection of race and gender. Therefore, Black women, who fall at the intersection, were not protected under discrimination laws seeing as their experiences coincided with these two ‘higher ranking’ groups only to a certain extent (Crenshaw, 1989).

To summarize the more recent developments of intersectionality, Ruiz et al. (2021) conducted an in-depth literature review and identified three overarching tenets to better understand the complexity of intersectionality: dominant ideologies, maintaining social inequalities, and the importance of positionality. The first tenet is concerned with how dominant ideologies contribute to and sustain interlocking systems of oppression and privileges within the hegemonic domain of the matrix of domination. Dominant ideologies circulate and impose certain norms or expectations from positions of power (Ruiz et al., 2021) and therefore marginalize other ways of being. The second tenet of intersectionality, Ruiz et al. (2021) identified, focused on perpetuating injustices through privilege. Privilege is based on social constructions of what is considered normative, and anyone who deviates from the norm is “othered”. In the context of design, this can be viewed through the hierarchical tendencies to privilege certain user groups over others, such as “able-bodied” people over “others”. The third and last tenet of intersectionality argues for the importance of situated knowledges and positionality (Ruiz et al., 2021).
This refers to the complex relationship of simultaneously experiencing privilege and oppression because of one’s intersecting social position. For example, a White woman might experience certain privileges due to her race, but face oppression on the account of her gender. These three facets of intersectionality demonstrate the concept’s complexity. The discourse on intersectionality discards binary thinking, and instead embraces positionalities, arguing that there is an interconnected nature of privilege and oppression that operate within a greater system of power, i.e., the matrix of domination (Ruiz et al., 2021).

4.1.1 Critiques and challenges

As the concept of intersectionality gained traction, it became widely used across disciplines as a theory, analytic framework, field of study, lens for analysis, and critical praxis (Carbado et al., 2014; Collins, 2015). Because of its complexity, intersectionality remains an emerging concept that faces many criticisms and challenges, such as maintaining a consistent definition and a methodological approach. The main challenges, which will be detailed below, are as follows: closely and appropriately engaging with intersectionality; systematically implementing intersectionality in practice; and empirically evaluating the application of intersectionality. It is important to note however that these challenges are overlapping and interconnected.

Since the term has been used in several contexts, intersectionality faces a definitional dilemma, as it is either used too specifically that it only focuses on the interests of one group, or too broadly that its widespread acceptance causes it to lose critical meaning (Collins, 2015). For example, the original term has been criticized by
several scholars for focusing too much on the interests of Black women, or for focusing only on race and gender thereby disregarding other identities (Cho, 2013). But Crenshaw (1991) stated that intersectionality was not meant to be a “new totalizing theory” (p. 1244) and Cho (2013) argues that intersectionality was only a starting point that radically revealed the need to address multiple forms of oppression.

On the contrary, the term has also been criticized for its ambiguity and general confusion because of its inconsistent definition (Phoenix, 2006). There is no standardized way of applying intersectionality in research or practice because of the saturated discourse and complex theoretical foundation. Patricia Hill Collins (2015) has observed that intersectionality is used in three main ways, i.e., as a field of study; an analytic framework; and as critical praxis.

As a field of study, this constitutes the analysis of intersectionality’s history, attributes, debates, and direction and is often studied in fields related to gender studies, media and cultural studies, humanities, and social sciences that revolve around narratives (Collins, 2015).

An analytic framework is concerned with an intersectional way of thinking and approaching relations of power (Collins, 2015). Similarly, Martins (2014) argues that intersectionality is not a discipline itself but rather a “theoretical stance” or approach to “feminist activism”, since most scholars use the term “intersectional approach” to describe the application of intersectional concepts. This echoes Ruiz et al. (2021) who notes that intersectionality is a conceptual framework for guiding research. Although, Collins (2015) stresses that an intersectional way of thinking is not about using the term,
but critically and intimately engaging with the concept by surveying intersectional discourses.

Intersectionality as a form of critical practice is mostly applied in areas of social justice work (Collins, 2015). Although there are no aspects that allow the concept to be empirically tested (Ruiz et al., 2021), small grassroots organizations that are concerned with social inequalities are adopting the concept of intersectionality into their practices. For instance, the Centre for Intersectional Justice (n.d.) in Europe has incorporated intersectional thought into its mission and values and strives to tackle inequality in policy through an intersectional lens. Similarly, Canadian Women and Sport (n.d.) advocates for intersectionality and has developed tools to educate and encourage sports organizations and programmers to incorporate intersectional thinking in their practices. Intersectionality as critical praxis seems to be more useful outside of academia and often goes unnoticed (Collins, 2015), but these developments serve as important contributions in the field of intersectionality. Different interpretations and approaches to the concept demonstrate that there is wide use of intersectionality and critical value but sociologist and political scientist, Leslie McCall (2005), argues that there is still a lack of discussion on how to study intersectionality and how to clearly implement it in practice.

Another challenge that the concept faces is the complexity of intersectionality. The concept’s complexity often takes away from the development of methodology and instead becomes the main focus of academic discourse (Phoenix, 2006). For example, some scholars argue that intersectionality enforces “categorical hierarchy” (Phoenix, 2006). Scholars who write on the concept of intersectionality often use the term *identities* to refer to social categories such as race, gender, ability, class, and etc. (Collins, 2015).
Though they refer to identities as intersecting instead of additive or isolated, the use of these categories may enforce categorical boundaries and pigeonhole people in “boxes”. Categorical attributes often thought to construct boundaries that homogenize social identity categories and assume a shared experience (Yuval-Davis, 2006). Therefore, some researchers attempt to take an anticalgocical approach to intersectionality which breaks down normative views within identities (McCall, 2005). These arguments and strategies point to the complex nature of the concept and how it continues to dynamically evolve.

These challenges demonstrate that as a concept, intersectionality is complex, ambiguous, and its definition and methodological approach are still evolving. Yet, the concept’s growing and widespread popularity stresses the importance of addressing power dynamics and injustices experienced in everyday life. Though there is confusion around defining intersectionality, its inconsistency allows for flexibility to apply the term in multiple contexts, opening the opportunity to develop a greater understanding of the way privilege and oppression are experienced in relation to power dynamics (Ruiz et al., 2021). Intersectionality is not limited to any one discipline or in academia and is not confined to any specific region as it has travelled across international borders (Carbado et al., 2014). Similarly, McCall (2005) argues that scholars and researchers must cross disciplinary boundaries to embrace multiple approaches and methods to the study of intersectionality.

Although several attempts have been made to integrate intersectional feminist ways of thinking in practice, there is still a need to understand how to do this in an effective and systematic manner. The modest aim of this thesis is to start to engage with this complexity to address the challenge of systematically implementing intersectional
thinking in design practice. I do so by surveying existing efforts, assessing, and organizing approaches and in turn contribute to strengthening the approaches of addressing dominant forms of design and power imbalances.

4.1.2 Intersectional elements in design practice

Based on all of this, intersectional feminist thought is concerned with how intersecting categories of identity are multidimensional, unique, and structure the simultaneous experiences of oppression and privilege (Guittar & Guittar, 2015). The closely linked framework, the matrix of domination, can be used to deeply understand this concept and how power operates through an intersectional lens, that is, how systems of oppression are interlocking and systematically distributed (Costanza-Chock, 2020). Therefore, intersectional feminist thought can be seen to embody the following elements: pluralism, and contextualization.

**Pluralism:** where P. a) recognizes and values multiple ways of being and knowing; P. b) understands every individual embodies unique multidimensional intersecting identities; P. c) the intersections of identities are considered when taking action.

**Contextualization:** is concerned with the contexts which govern and inform experiences of oppression and privilege. This means, C. a) acknowledging the importance of context such as histories, geographies, epistemologies, and etc. and its social shaping qualities; C. b) developing an in-depth understanding of the underlying conditions that shape intersectional social experiences across contexts to address forms of oppression.
These elements are fundamental to systematically implement intersectionality in design practice and offer alternative ways of thinking that may counteract dominant design. As seen in section 3.3 and 3.5, dominant design often promotes one worldview of practicing design which leads to harmful and oppressive outcomes. Pluralism is important to consider in practices of design, since it acknowledges different perspectives, worldviews, and values the complex intersections of identities.

Contextualization is rarely discussed in design (Del Gaudio et al., 2020) and when disregarded, practices of dominant design may promote universalist thinking and overlook the contextual and political complexities of design issues, as seen in section 3.3 and 3.5. Contextualization is important to support the understanding of intersecting social experiences in relation to power dynamics. Specifically, the matrix of domination allows designers to further understand the interconnected relationship between design and power and the conditions that inform and affect design outcomes.

4.2 Intersectional feminist thought in design practice

In design literature, the concept of intersectionality, although emerging, remains relatively scarce. A search was conducted across key design journals that focused on social and political aspects of design using the keyword “intersectionality”. This search yielded only 14 results in the following publications: The Design Journal (5), Design and Culture (4), Design Issues (3), International Journal of Design (2), Design Studies (0), CoDesign Journal (0). As seen in Table 4, these contributions did refer to intersectionality as a key feminist framework to support design research in investigating
design’s relation to power (see Broadley, 2021; Canli, 2018; Goodwill et al., 2021; Onafuwa, 2018).

Table 4. **Intersectionality in design literature**

<table>
<thead>
<tr>
<th>Journal</th>
<th>Title of article</th>
<th>Authors</th>
<th>Use of intersectionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Journal of design</td>
<td>Beyond Good Intentions: Towards a Power Literacy Framework for Service Designers</td>
<td>Goodwill et al., 2021</td>
<td>Intersectionality is used as a lens and theoretical concept to contribute to discussions on power and privilege in design.</td>
</tr>
<tr>
<td>The Design Journal</td>
<td>Advancing Asset-Based Practice: Engagement, Ownership, and Outcomes in Participatory Design</td>
<td>Broadley, 2021</td>
<td>Intersectionality is referred to as a concept that benefits marginalized communities and supports designers to consider that good intentions do not always ensure inequalities are not reproduced in the design process.</td>
</tr>
<tr>
<td>Design Issues</td>
<td>Made in Patriarchy II: Researching (or Re-Searching) Women and Design</td>
<td>Buckley, 2020</td>
<td>Mentions that there is a growing importance of intersectionality and the complexities of identities.</td>
</tr>
<tr>
<td>The Design Journal</td>
<td>Binary by Design: Unfolding Corporeal Segregation at the Intersection of Gender, Identity and Materiality</td>
<td>Canli, 2018</td>
<td>Intersectionality is referred to in the context of evaluating axes of social powers that contribute to one's privilege and oppression and used as a theoretical concept to expand discussions on how design has reproduced binary gender, sexuality, and identity categories that unequally distribute power.</td>
</tr>
<tr>
<td>Design and Culture</td>
<td>Allies and Decoloniality: A Review of the Intersectional</td>
<td>Onafuwa, 2018</td>
<td>Discusses some emerging uses of intersectionality in design research by outlining</td>
</tr>
</tbody>
</table>
Though these articles point to a growing interest in the use of intersectionality in design research, as Collins (2015) states, adopting intersectional feminist thought is not only about using the term in practice, but critically and actively engaging with intersectional discourse. Therefore, a different approach was required to better understand and identify if and how intersectional feminist thought has been incorporated into design processes. This involved looking to other works outside of design journals to identify ones that concretely position themselves as working directly with intersectional feminist thought. Three design approaches were identified and selected; all state that they adopt intersectional feminist thought as foundational knowledge to challenge mainstream design processes and look for alternative ways of designing to ensure better social outcomes. The 3 approaches were identified through the snowballing technique from works selected as part of the previous search (see section 2.2) and selected based on the following criteria:

- **Relevance**: The selected approaches had to be aligned to the chosen topics of this thesis, that is, (1) explicitly using intersectionality, (2) addressing power relations of oppression through design processes. More specifically, (1) it was necessary
for the approach to not only acknowledge the role design plays in upholding power relations and forms of oppression but also present viable strategies to counter unequal distributions of power through a proclaimed intersectional lens. Regarding (2) it was vital that the approaches examined and engaged with conceptualizations of power and the matrix of domination in the definition of their approach – that is exploring the interconnected and complex relationship between design processes, power, and oppression.

- **Critical praxis:** As this thesis aims to understand how intersectional feminism can be applied in design processes in a practical sense, the selected approaches needed to have a practical aspect that directly applied theory to practice. Further, the developed principles were required to have emerged from intersectional feminist thought.

The selected applied approaches I examined are as follows: *Design Justice; Data Feminism*; and *Towards an Intentional Intersectional Practice*. They not only closely engage with intersectional feminist discourse, but they also explicitly declare that their respective principles are based on an intersectional way of thinking. These approaches have been developed quite recently and are directly extracted from their respective book/Master’s thesis. As it is beyond the scope of this thesis to summarize each of their works in their entirety, in the following sections, I provide an overview of the relevant information of each approach to follow the analysis in Chapter 5. Each design approach presents a set of principles which will be used as data for the analysis in Chapter 5.
4.2.1 Design Justice

The Design Justice approach emerged from a workshop in 2015 at the Allied Media Conference in Detroit (US), where Sasha Costanza-Chock (2020), along with a group of practitioners whose work focuses on social movements and community-driven approaches, questioned the notion of designing for “good”. Design justice “rethinks design processes, centers people who are normally marginalized by design, and uses collaborative, creative practices to address the deepest challenges our communities face” (p.6). The approach consists of 10 principles that claim an intersectional feminist provenance. For most of the principles, the Costanza-Chock does not specifically specify when/where these principles should be implemented in the design process, but it is suggested that they ought to be considered throughout the design process. The design justice principles are considered as guidelines and the author encourages and invites others to follow, adapt, redistribute the principles, and contribute to furthering their development.

Costanza-Chock provides an overview of how these principles emerged in their book by discussing issues of power and design and outlining issues of injustice that are embedded in practices of design. To date, there have been 2694 signatories who have signed on to the Design Justice principles, however, as this approach is still emerging, there is little information on how these principles are being used by design practitioners. To exemplify how these principles might be applied in practice, at the end of their book, the author discusses how these principles can be used in the context of design education and design projects with local communities (Table 5).
Table 5. **Principles of Design Justice** (Costanza-Chock, 2020)

<table>
<thead>
<tr>
<th>Principle</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. “We use design to <strong>sustain, heal, and empower</strong> our communities, as well as to seek liberation from exploitative and oppressive systems” (p. 6).</td>
<td>Advocate for designers to participate in active healing and community empowerment and not only critiquing systems of oppression.</td>
</tr>
<tr>
<td>2. “We <strong>center the voices of those who are directly impacted</strong> by the outcomes of the design process” (p. 6).</td>
<td>Ensuring community members and partners are directly involved in the design and decision-making process. This involves asking questions like: “Who gets to do design work? What is the community in this project? Who gets to speak for the community?” (p. 191).</td>
</tr>
<tr>
<td>3. “We <strong>prioritize design’s impact on the community</strong> over the intentions of the designer” (p. 6).</td>
<td>Do no harm and put the needs of the community first. This involves asking questions such as, what will community members get out of the process? Often community members who live at the intersection of multiple form of oppression are subject to different conditions that make it more difficult to participate in design processes.</td>
</tr>
<tr>
<td>4. “We view <strong>change as emergent from an accountable, accessible, and collaborative process</strong>, rather than as a point at the end of a process” (p. 7).</td>
<td>Includes getting prototypes into the real-world to make design more accessible and to get community feedback early in the design process.</td>
</tr>
<tr>
<td>5. “We see the role of the <strong>designer as a facilitator rather than an expert”</strong> (p. 7).</td>
<td>Focus on power addressing power dynamics within design processes and design teams. It is important that all participants in a design project discuss power and privilege to work together to find ways to challenge reproductions of structural oppression within the design process.</td>
</tr>
<tr>
<td>6. “We believe that <strong>everyone is an expert based on their own lived experience</strong>, and that we all have unique and brilliant contributions to bring to a design process” (p. 7).</td>
<td>Building strong relationships with the community, respecting and acknowledging everyone’s lived experience.</td>
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<tr>
<td>Principle</td>
<td>Description</td>
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</tr>
<tr>
<td>7. “We share design knowledge and tools with our communities” (p. 7).</td>
<td>Designers share tools and knowledge with the community by participating in community events, organizing workshops with the community, or meeting in community spaces. Community-led events are important opportunities to strengthen the design process.</td>
</tr>
<tr>
<td>8. “We work towards sustainable, community-led and -controlled outcomes” (p. 7).</td>
<td>Emphasis on community ownership over design outcomes and building ongoing community relationships. Designers work to create ownership agreements with communities and sustainable outcomes. Ongoing process of working toward the ideal. No solution is perfect. Design Justice practitioners hope to avoid outcomes that are exploitative while considering existing boundaries such as structures, tools, platforms, and other operations.</td>
</tr>
<tr>
<td>9. “We work towards non-exploitative solutions that reconnect us to the earth and to each other” (p. 7).</td>
<td>Ongoing process of working toward the ideal. No solution is perfect. Design Justice practitioners hope to avoid outcomes that are exploitative while considering existing boundaries such as structures, tools, platforms, and other operations. Consider what is already working at the community level. Working with communities to repurpose or amplify existing knowledge, practice, tools, and projects. Designers might use existing tools earlier in the design process. It is important for Design Justice practitioners to spend as much time with the community and as early in the design process as possible.</td>
</tr>
<tr>
<td>10. “Before seeking new design solutions, we look for what is already working at the community level. We honor and uplift traditional, Indigenous, and local knowledge and practices (p. 7).</td>
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</table>

### 4.2.2 Data Feminism

Data Feminism is an approach developed by Catherine D’Ignazio and Lauren F. Klein (2020) that is presented in their book, of the same name, published in 2020. The authors are two data scientists and researchers interested in the complex and intertwined relationship between power imbalances, data science, and design issues. According to them, as data are directly involved in reinforcing and maintaining inequalities, practices of data science should instead be used to challenge and change distributions of power. They argue that the world must be reframed through a feminist lens, and therefore, propose the concept of data feminism as “a way of thinking about data, both their uses...
and their limits, that is informed by direct experience, by a commitment to action, and by intersectional feminist thought” (D’Ignazio & Klein, 2020, p. 10). Although their approach is situated within data science, it is considered as a design approach since it involves problem discovery, and evidence-based decision-making to feed design outcomes.

An important value of Data Feminism is to prioritize the voices of those who are closely or directly affected by issues of oppression rather than those who study them from a distance (D’Ignazio & Klein, 2020). In their book, D’Ignazio and Klein propose 7 principles to be implemented in data science and design practice which they state stem from intersectional feminist thought. These 7 principles engage with concepts of power, pluralism, knowledge production, and ownership in the context of data science (Table 6). Throughout their book they present how these principles are embodied in different contexts and projects using examples. For instance, a counterdata initiative to map cases of femicide in Mexico, is used to explore principles 1 and 2 of Data Feminism (see Table 6). Data feminism has since been adopted by others and implemented in practice. For example, the Urban Belonging project in Copenhagen, Amsterdam (The Urban Belonging Project, n.d.) draws from Data Feminism to understand complex social intersections in urban experiences and to collect, and communicate data that challenges and exposes power.
<table>
<thead>
<tr>
<th>Principle</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>1. Examine power</td>
<td>Examining how power operates across all domains of the matrix of domination, understanding where there is an exclusion of other identities and perspectives, for example, intersectional data gaps. People from dominant groups tend to benefit and those who are not from dominant groups are marginalized. Acknowledges that oppression is real and worth dismantling, and that design and data practices can be used to challenge unequal power structures. Understand the scope, scale, and features of problems with communities. Shifting the focus from things that secure power to those that challenge like equity and co-liberation.</td>
</tr>
<tr>
<td>2. Challenge power</td>
<td>“Teaches us to value multiple forms of knowledge, including the knowledge that comes from people as living, feeling bodies in the world” (p. 18).</td>
</tr>
<tr>
<td>3. Elevate emotion and embodiment</td>
<td></td>
</tr>
<tr>
<td>4. Rethink binaries and hierarchies</td>
<td>Binaries and hierarchies such as gender binary, circulate harmful and erroneous ideas. Rethinking and restructuring counting and measuring practices of data can balance power, reclaim disregarded histories, build solidarity.</td>
</tr>
<tr>
<td>5. Embrace pluralism</td>
<td>Synthesizing and valuing multiple perspectives, with an emphasis on local, Indigenous, and experiential ways of knowing. Multiple perspectives must be brought together in any knowledge production process, especially those directly impacted by the issues in question. Numbers cannot speak for themselves and are not representative of the context. Contextualizing is about questioning this and analyzing where there are silences in datasets or missing data, whose knowledge is subjugated. Discussing structural forces of oppression is important.</td>
</tr>
<tr>
<td>6. Consider context</td>
<td>Clearly making labour visible and valuing the importance of the work done and the people involved, for example using data to highlight the tremendous efforts of women in the field of data science who are often overlooked.</td>
</tr>
<tr>
<td>7. Make labour visible</td>
<td></td>
</tr>
</tbody>
</table>
Although not an explicit principle, “Our Values and Our Metrics for Holding Ourselves Accountable,” is presented as an important strategy and aspect of Data Feminism. To evaluate whether the authors upheld their values of including the voices of those who directly or closely experience forms of oppression, they created a set of metrics to audit the inclusion of the knowledge productions that informed their approach. The metrics consist of: (1) their initial aspirations; (2) draft metrics (open peer review of the book); (3) final metrics (copyedited manuscript). For example, for (1) they aspired to have at least 75 percent of citations of feminist scholarship from people of colour and 75 percent of examples of data projects led by people of colour in discussion on addressing racism. Regarding (3), the final metrics consisted of 32 percent for scholarship and 42 percent for examples. It is important to note that this approach was not meant to be tokenistic but instead examine how their initial values translated into their final outcomes to hold themselves accountable and commit to learning from their mistakes.

4.2.3 Towards an Intentional Intersectional Practice

Jacquie Shaw (2019b), a recent graduate from the Master of Design in Strategic Foresight and Innovation program at OCAD University in Toronto with a background in graphic design, poses the following research question in their Master’s research project: “how might we practice design with an intersectional feminist frame in order to explore designers’ ability to act as agents of change and future making?” (p. 4). To address this question, they created and presented designers with a path to embody intersectionality in their design process and to confront power and privilege. In their master’s research
project, Shaw uses an adapted design process structure and attempts to embed
intersectional thought into principles of design to create a six step, self-reflection tool for
designers (see Table 7 and Figure 10). Figure 10 illustrates this process, where each
principle is grouped into one of three main phases: understand, investigate, and action.
There is no clear explanation as to how this process was created and what informed each
principle. Additionally, as this approach emerged from a master’s research project, Shaw
states that the process was created with limited community feedback and would benefit
from evaluating the process in practice.

Table 7. **Principles of Towards an Intentional Intersectional Practice** (Shaw, 2019b,
2019a)

<table>
<thead>
<tr>
<th>Principle</th>
<th>Description</th>
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<tbody>
<tr>
<td>1. Show Up</td>
<td>Designers must be prepared and willing to engage in conversations on intersectionality and be ready to approach intersectional thinking before designing with/for/centering other people. Considers a level of reflexivity by asking questions like “what biases do I hold”. Learning is also about listening to other people, learning from outside perspectives, observing what is happening in different contexts, and being open to approaching things in new ways.</td>
</tr>
<tr>
<td>2. Learn/unlearn</td>
<td>This entails critical thinking and identifying blind spots such as exploring where information is coming from, who is at the table, and who is missing. Although Shaw uses the term “explore Shaw argues that this stage is about defining details and deeply engaging with the problem space.</td>
</tr>
<tr>
<td>3. Contextualize</td>
<td>Asking other people fills blind spots and supports contextualization. Intersectionality understands that every experience is valid and unique.</td>
</tr>
<tr>
<td>4. Question</td>
<td></td>
</tr>
<tr>
<td>Principle</td>
<td>Description</td>
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<td>-----------</td>
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</tr>
<tr>
<td>5. Apply</td>
<td>Taking action. This is when previous findings and learned principles are applied in practice. For example, if a blind spot was identified in the previous stage, it should be addressed in this step.</td>
</tr>
<tr>
<td>6. Evaluate</td>
<td>About evaluation and accountability. A time to reflect, learn from mistakes, hold yourself accountable, and commit to doing better next time. After this step the cycle continues by returning to the first stage.</td>
</tr>
</tbody>
</table>

Figure 10. **Towards an Intentional Intersectional Practice process** (Shaw, 2019b)
Chapter 5: Critical analysis of intersectional feminist approaches

The authors of the 3 approaches, Design Justice, Data Feminism, Towards an Intentional Intersectional Practice, each state that they closely engage with the concept of intersectionality to challenge and address oppressive implications that manifest through design processes and practices. As explored in Chapter 4, intersectionality is concerned with the multidimensional and intersecting nature of social identities and how this affects experiences of oppression and privilege. However, as stated earlier in section 4.1.1, because of the ambiguous and complex nature of the concept of intersectionality, it is difficult to empirically assess if a set of principles aligns with the concept. Also, to date, scholars have not yet been able to systematically implement intersectionality in practice as there is no single definitive method to do so or way of assessing its application.

Recognizing the complexity and challenge of applying intersectional feminist thought in practice and considering the emerging and still exploratory and experimental state of introducing intersectional thinking in design practice (as shown in 4.2), it becomes important to (a) understand how intersectional thinking has been implemented in a design process, and how this might be done systematically. In this regard, it is also useful to (b) understand how existing challenges related to this endeavour have been and can be addressed and overcome by designers.
To achieve (a), I used the elements of intersectional thinking identified in the literature on intersectionality (section 4.1.2) as categories of analysis to assess the implementation of the concept. I analyzed the 3 design approaches and their principles and assessed how they address the elements of intersectional thinking and how these were implemented into the design process. Regarding (b), in addition to the elements, the main challenges of intersectionality as outlined earlier (section 4.1.1), were used as categories of analysis to examine how the approaches addressed (or not) some of the existing challenges to implement the concept. This provided insight as to what remains as challenges and how these might be overcome.

I assessed the approaches according to the following categories: **pluralism**; **contextualization**; **engagement**; and **evaluation**. The following sections summarize the in-depth analysis of the 3 approaches (see Appendix A-D for detailed analysis).

### 5.1 Pluralism & the 3 design approaches

Drawing from the elements of intersectional thinking, outlined in section 4.1.2, pluralism is embedded in design practice when:

- **P. a)** designers recognize and value multiple ways of being and knowing;
- **P. b)** designers understand every individual embodies unique multidimensional intersecting identities;
- **P. c)** the intersections of identities are considered by designers when taking action.

The following summarized the in-depth analysis of each of the 3 design approaches regarding the implementation of pluralism. Appendix A includes a more detailed analysis of each.
The 3 approaches engage with aspects of pluralism, most notably of ways of being and knowing and recognize the value in experiential knowledge and how it can better inform design outcomes. Specifically, point P. a) of pluralism by either (i) incorporating direct local and marginalized knowledge into the design process or (ii) changing the mindset of the designer.

Regarding how to (i) incorporate direct local and marginalized knowledge into the design process, the approaches:

1) Suggest the use of collaborative design processes. Specifically, they focus on those directly affected by issues, and by opening the design process, they bring people and voices of affected community members to the whole decision-making design process (i.e., Design Justice and Data Feminism).

2) Ask designers to build on local knowledge and not substitute local knowledge. They suggest looking at local community solutions and local expert knowledge (i.e., Design Justice and Data Feminism) and suggest practicing reflexivity, transparency, inviting community perspectives in data analysis and including them in data storytelling, and data collection (i.e., Data Feminism).

3) Encourage designers to recognize and legitimize individual experience, embodiment, and feeling as valuable information in the design process (i.e., Data Feminism).

Regarding how to (ii) change the mindset of the designer, the approaches:

1) Find ways to expose designers to different perspectives by reading and learning from the works of those who are often marginalized and by asking
people about their lived experiences, listening to them, and learning from them (i.e., Towards an Intentional Intersectional Practice).

2) Suggest the designer self-reflects by acknowledging bias (i.e., Towards an Intentional Intersectional Practice) and by stating positionality (i.e., Data Feminism).

3) Prompt designers to take informed action by drawing on lived experience, different perspectives and knowledge and applying it to decision-making processes (i.e., Towards an Intentional Intersectional Practice).

Despite not including all aspects of pluralism, common techniques to implement pluralism in design can be seen across all the approaches: collectively, there is an emphasis on point P. a) of pluralism, that is, they emphasize the value in centering the design process around a plurality of knowledge productions that are local, experiential, and often marginalized to both amplify these voices and to inform design outcomes. The approaches suggest doing this by focusing on community-led processes or by focusing on the designer’s personal worldview and changing their actions and way of thinking. Using these main strategies, Data Feminism outlines more detailed techniques on how designers can effectively implement aspects of pluralism, whereas Design Justice provides more generalized guidelines or values for designers to embrace and Towards an Intentional Intersectional Practice guides designers through a process of critical thinking. At the same time, none of the approaches fully address points P. b) and P. c) of pluralism since they do not consider how identities are intersectional or how to implement these considerations in practice.
5.2 Contextualization & the 3 design approaches

Building upon the elements of intersectional thinking, as outlined in section 4.1.2, contextualization is embedded in design practice when:

C. a) designers acknowledge the importance of context such as histories, geographies, epistemologies, and etc. and its social shaping qualities;

C. b) designers develop an in-depth understanding of the underlying conditions that shape intersectional social experiences across contexts to address forms of oppression.

In this section, I will summarize the in-depth analysis of if and how the 3 approaches address contextualization in the design process. Appendix B includes a more detailed analysis of each.

All 3 approaches involve the element of contextualization by focusing on either (i) understanding contextual factors of the design process, or (ii) engaging in the problem space to reveal and analyze contextual factors.

Regarding how to (i) understanding contextual factors of the design process, the approaches:

1) Suggest open communication between all participants by bringing conversations on power and the design process to the forefront using tools and training resources and by discussing factors that affect meaningful participation and engagement (i.e., Design Justice).

2) Question the designer’s role and the actions that shape designed outcomes by self-reflecting and identifying blind spots (i.e., Towards an Intentional Intersectional Practice).
Regarding (ii) engaging in the problem space to reveal and analyze contextual factors, the approaches:

1) Analyze and investigate knowledge productions by researching contextual conditions, collecting counterdata, analyzing and exposing oppressive contexts, recognizing differences, and practicing co-liberation, and considering identities in knowledge production (Data Feminism). This is also done by prompting designers to critically think and observe different contexts (Towards an Intentional Intersectional Practice).

All 3 approaches address the implementation of point C. a) and mostly C. b) of contextualization. Design Justice and Towards an Intentional Intersectional Practice focus on considering contextual factors of the design process by either communicating with communities involved early in the design process or by having the designer identify the implications of contextual factors that affect the design process. Whereas Data Feminism addresses contextualization in-depth with more detail. Data Feminism suggests research strategies that challenge and expose root causes and conditions that uplift or suppress certain knowledge through collaborative processes of design. However, none of the approaches specifically address an important aspect of C. b), that is, how contextual conditions relate to intersectional social experiences.
5.3 Engagement and the 3 design approaches

Intersectionality is a difficult concept for designers to engage with (as outlined in section 4.1.1). An intersectional approach requires designers to engage with the concept critically and closely by directly surveying discourse to understand its elements. This is one of the main challenges of implementing intersectionality in design processes. Therefore, in this section, I summarize the in-depth analysis of if and how the 3 approaches address this challenge. Appendix C provides a detailed analysis of each approach.

The 3 approaches do not directly address the challenge of engagement as none of them ask designers to engage with discourse on intersectionality or to closely understand the elements of the concept. However, designers are asked to engage with principles and approaches that adopt aspects of intersectional thought. This drives designers to engage with intersectionality as an analytic framework and critical praxis rather than a field of study since the approaches avoid direct engagement with intersectionality as a theory.

Regarding how designers ought to engage with intersectionality as analytic framework, they focus on using strategies and techniques that attempt to embody the elements of intersectional feminist thought, as outlined in section 5.1 and 5.2. The approaches strive for designers to develop an intersectional way of thinking (analytic framework) which is then materialized further in practice by applying intersectional ways of thinking through actions (critical praxis).

Regarding engaging designers with intersectionality as field of study, all 3 approaches do not involve designers directly engaging with intersectionality as a field of study or intersectionality discourse to understand its elements.
Instead, this points to approaches that indirectly engage designers with the concept of intersectionality by focusing on developing strategies and techniques that attempt to embrace intersectional ways of thinking instead of having designers focus on understanding the concept of intersectionality itself. In doing so, designers avoid engaging with the theoretical complexities of intersectionality.

5.4 Evaluation & the 3 design approaches

Currently, there is no definitive way to evaluate the application of intersectional feminist thought in design practice. That is, there are no metrics to evaluate if an intersectional way of thinking and its elements are systematically implemented in a design approach. This is considered as a challenge because of the ill-defined ways of applying intersectionality in practice (McCall, 2005) which risks superficially implementing the concept and losing its critical meaning (Collins, 2015). There is the need to define strategies of evaluation to strengthen the implementation of intersectionality in practice. Therefore, in the following I provide a summary of the in-depth analysis on if and how the 3 design approaches address this challenge. Appendix D provides a detailed analysis of each approach.

Two of the approaches acknowledge the need for evaluation by either: (i) evaluating knowledge productions that underpin a design process, or (ii) asking designers to reflect on their decisions and actions made throughout the design process.

Regarding the strategy to (i) evaluate knowledge productions that underpin a design process, the approaches:
1) Evaluate references and sources of information by developing and using a set of metrics to audit knowledge production and by focusing on point P. a) of pluralism (i.e., Data Feminism).

Regarding (ii) asking designers to reflect on their decision and actions made throughout the process the approaches:

1) Require designers to hold oneself accountable by reflecting and explicitly acknowledging mistakes that were made in the design process (i.e., Data Feminism and Towards an Intentional Intersectional Practice).

These practices highlight the development of strategies of evaluation and focus on reflexivity. However, such strategies are still in their initial stages of development and lack specificity on how designers can use them and in what contexts. Additionally, there is no clear definition as to how to evaluate if elements of intersectional thinking are applied in a design process.
Chapter 6: Discussion

This chapter discusses the findings of the analysis of the 3 design approaches discussed in Chapter 5 and triangulates these with key concepts from theories of intersectionality, power, and design, and from the practices of dominant design that emerged through the analysis of the Double Diamond. In doing so, I will answer the question: how can intersectional feminist thought be systematically implemented in design processes to counteract dominant design?

Drawing from Chapters 4 and 5, counteracting dominant design means systematically implementing the elements of intersectionality, such as pluralism and contextualization in design processes as well as addressing the challenges of engagement, and evaluation. In the following sections, I discuss what aspects of intersectional thinking are addressed in the 3 analyzed design approaches and what is missing. This will inform further discussions on the strategies that could be used to counteract dominant design through design practice.

6.1 Systematically implementing intersectional thought in design practice

6.1.1 Embracing intersectional thinking

The analysis revealed that the 3 design approaches systematically addressed some of the elements of intersectional feminist thought, such as pluralism and contextualization. As presented in sections 5.1 and 5.2, the approaches tend to address point P. a) of pluralism with common techniques of implementing pluralism across all
approaches. Specifically, they emphasize the value of centring the design process around a variety of knowledge production processes that are local, experiential, and often marginalized. In a comparable way, all 3 approaches attempt to implement points C. a) and mostly C. b) of the element of contextualization through research strategies that challenge and attempt to expose root causes and conditions that uplift or suppress certain kinds of knowledge.

The suggested strategies to address pluralism that focus on marginalized and experiential knowledge align with the historical literature that led to the emergence of intersectionality as a concept in that it centralizes its discourse around the lived experience and situated knowledge of marginalized groups, specifically Black women in the context of feminist movements (Romero, 2018). The fact that they each suggested that this was an innovative aspect of their approaches implies that valuing and amplifying marginalized lived experiences within the design process remains an uncommon activity in design, except for participatory design which is still a niche approach in design.

Participatory design aims to democratize the design process by bringing the voices of those affected by designed outcomes into the design process itself and support mutual learning between participants to obtain better outcomes (Simonsen & Robertson, 2012).

The 3 design approaches share common strategies to embrace this thinking as seen through community-driven and collaborative design processes. Although two of the approaches present guidelines that lack specificity as to how to do so, such as spending time with the community, building relationships, involving marginalized voices, and listening and learning from marginalized perspectives, these strategies align with participatory design approaches. Therefore, considering this, when focusing on P. a) of
pluralism, the 3 design approaches do not appear to go beyond strategies of participatory design. Solely focusing on the strategy of incorporating a plurality of perspectives in a collaborative design process risks perpetuating doctrines of inclusivity and diversity as the only approach to address oppression which, unfortunately, may overlook how oppression is intersectional (Guittar & Guittar, 2015). Therefore, although soliciting unheard perspectives through collaborative design processes may be seen as a step in the direction toward bringing marginalized experiential knowledge into the design process, implementing this aspect of pluralism in design practice by exclusively suggesting collaborative processes is not sufficient on its own to suggest an intersectional way of thinking. There appears to be a fundamental gap in these strategies as they overlook some of the theoretical foundations of intersectionality – such as how intersecting identities and perspectives are to be considered in practice. These gaps will be further discussed in the following section.

Regarding contextualization, the findings emphasize the importance of considering more deeply contextualization in the implementation of intersectional ways of thinking in design. When this is missing, there is the risk of perpetuating oppression through design processes, even collaborative ones (Del Gaudio et al., 2020). Here it was seen that when aspects of contextualization were addressed, the approaches focused on the conditions which shape knowledge and experiences in the design process and design outcomes. For example, principle 6 of *Data Feminism* requires designers to question and examine how contextual factors such as the identities of individuals create particular productions of knowledge. Looking at the conditions and contextual factors that shape experiences and the production of knowledge (through a lens of power), means engaging
with the matrix of domination. Therefore, it is in contextualization that designers have the possibility not only to engage in understanding how the matrix of domination operates locally and how oppression is perpetuated but also as to how (collaborative) design processes might be strengthened.

This, therefore, suggests that both pluralism and a contextual analysis through a matrix of domination lens ought to be considered together in a design process to align with intersectionality theory to better understand how experiences of privilege and oppression might be situated within and informed by systems of power and design.

6.1.2 Gaps in intersectional thinking within design practice

The findings in section 5.3, showed that implementing intersectional feminist ways of thinking into design practices suggests that intersectionality is used as an analytic framework and critical praxis rather than requiring designers to engage with intersectionality as a field of study. For instance, principle 1 of Towards an Intentional Intersectional Practice asks designers to be willing to approach intersectional thinking but does not provide any information or strategies for how they can better understand the concept. Some theorists of intersectional thinking argue that to effectively use the concept of intersectionality as an analytic framework, and subsequently, as critical praxis, designers must intimately engage with intersectionality by surveying literature and discourse to gain an in-depth understanding of its elements (Collins, 2015). This is what is missing from all 3 approaches. Also, as much as the approaches aim to implement pluralism and contextualization, none address a vital component of intersectionality
theory, that is, how identities are multidimensional and intersecting (Crenshaw, 1989). Fully implementing intersectional thinking in design was not addressed directly.

An explanation for this may be related to the fact that it is complex to do so (Ruiz et al., 2021). Since the study of intersectionality focuses on the intersecting social categories of identities, it also comes with challenges and complexities of identity politics and categorical boundaries (McCall, 2005) which might make it difficult for designers to grasp these within a design process, and doing so might make the design process more difficult and time-consuming. This in turn might prompt designers to avoid adopting intersectional thinking or adopting it might make it difficult for participant interactions. It may also be perceived to distract from overall goals and/or thwart the creative flow in a process already complicated with the distributions of power typical of participatory design processes.

However, removing the theoretical elements of intersectionality entirely from the design process risks oversimplifying its application, making it acritical, and risks becoming a replicable practice that loses its political value, therefore, falling back into current issues of dominant design. As discussed, the Double Diamond model as a simplified and generalized process disconnects designers from political and social complexities and does not address root causes of a design problem. This should not be replicated by adopting an oversimplified version of intersectional thinking. Instead, there might be a balanced approach that systematically considers the elements of intersectionality in an approachable manner while remaining coherent to intersectionality theory.
The next challenge that was analyzed is how to evaluate the application of intersectional thought in design practice. Two of the analyzed design approaches provided some strategies that point to practices of evaluation. Of these approaches, assessing mistakes made, reflexivity about what led to these actions and outcomes, assessing knowledge productions, and holding oneself accountable were proposed as strategies to evaluate the design process. For example, in the case of Data Feminism, the authors hold themselves accountable by evaluating their sources and the inclusion/exclusion of a plurality of perspectives from their process and approach. However, as the findings suggest, all the analyzed approaches did not provide any direct information on how designers are to evaluate the application of intersectionality in the design process. This may be because, as discussed in this thesis, it is understood that to evaluate the application of intersectionality there is the need to define elements of intersectionality. Although the approaches do not address this challenge, the proposed methods of evaluation may provide a starting point for further exploration since they recognize the importance of a step in the design process to reflect and assess the designer’s actions and outcomes. This aligns with intersectional feminist thought that considers reflexivity as an important strategy to better understand positionalities and unpack the complexities of power relations (Goethals et al., 2015). It is hoped however that there not be a singular way to do so as intersectional approaches are intended to not lead to universalist methodologies.
6.2 Counteracting dominant design through intersectional thinking

Drawing on the strengths of the 3 design approaches, there is a recognition that knowledge is a form of power, in that they examine how design practices and discourse are informed, produced, subjugated, suppressed, privileged, circulated, and etc. (Collins, 2000; Mills, 2003). The previous literature suggests that an ongoing examination of power-knowledge is necessary to understand systems of oppression and therefore propose strategies of resistance (Collins, 2000). Power-knowledge can therefore not be avoided when proposing strategies to counteract dominant design. The fact that the 3 design approaches focus on power-knowledge as a key aspect in their approach, points to a direct engagement, examination, and confrontation with the relationship between power and design. This also acknowledges and supports the notion that design is ontological in that it shapes how people experience the world (Escobar, 2018; Fry, 2010) and therefore can be used to challenge and change dominant practices of design. Here, I discuss how the analyzed approaches may counteract principles of dominant design, that is, institutionalization, universalism, and solutionism, through an intersectional lens.

Institutionalization

The strategies used by the 3 approaches that focus on marginalized knowledge and systems of oppression, may counteract dominant institutionalization because they work to legitimize alternative realities and support world-making from different perspectives rather than mainstream ones. In doing so, this decentralizes knowledge productions from institutional structures of authority and privilege. As these approaches
focus on local and existing solutions and hearing directly from those who are affected by systems of oppression, they legitimize other ways of knowing and being through design processes. These strategies may also introduce new or alternative ways of thinking in institutional design practices.

**Universalism**

If the analysis indicated that many of the principles and proposed strategies are quite general, it might seem that they are caught up in universalistic thinking. For instance, proposing general strategies of resistance such as engaging with community members to ensure those who are directly affected participate in the design process, is seen to be vague and lacks an acknowledgement of the political complexities involved when designing with a community. This is also supported in the analysis of the Double Diamond model which pointed to how its generalized and overly simplified features perpetuated universalism. However, if the approach focuses too much on the specificity of a design process it also risks universalizing a specific approach that will not apply to all people, in all contexts. *Data Feminism* addresses this dilemma by exploring how principles may be used in specific contexts and across different contexts, therefore, acknowledging the complex, dynamic, and unfixed nature of addressing issues of power. There is still the need to understand how intersectional design approaches may be widely adopted without perpetuating universalist practices.
Solutionism

When addressing contextualization, there was an emphasis on the importance of deeply engaging in the problem discovery and definition, and the research phase in the design process. This not only counteracts doctrines of solutionism that view the design process as a problem-solving process (Rosner, 2018), but also points out how design approaches should focus on identifying conditions which shape knowledge production and experiences of oppression. In other words, rather than focusing on solution generation, the approaches focus on an analysis of power-knowledge. This may contribute to a greater understanding of the relationship between power and design, its operations, and how that same power-knowledge can be used as a form of resistance to injustice, that is, how design can be used as a tool to enact change. This further justifies the value of the matrix of domination as a tool or approach not only for understanding and examining operations of power in society and design but for understanding how to challenge unequal distributions of power through the identification of points of resistance.
Chapter 7: Final considerations

7.1 Summary

This thesis explored how dominant design operates in practice, the resulting implications, and how some early attempts to adopt intersectional feminist thought in the design process may counteract dominant design.

In the preparatory phase, I described and examined conceptualizations of power: power-knowledge, discourse, and the matrix of domination. These concepts provided the necessary theoretical foundation to understand the relationship between design and power and how practices of design play a role in maintaining forms of oppression and privilege. I also conducted an integrative literature review where the concept of dominant design emerged identifying three principles. To better understand dominant design and how it operates in design practice, I studied the mainstream Double Diamond design framework and discovered that it is a form of dominant design.

I also conducted a critical literature review of intersectional feminism, how it emerged, its features, applications, and related challenges. By doing so I engaged with discourses of intersectionality and identified elements of intersectional feminist thought and some of the challenges of implementing it in practice. I then developed a way to analyze 3 design approaches. In the analytic phase, I identified if and how the 3 design approaches implemented intersectional feminist thought in the design process and how they addressed challenges related to implementation. I then analyzed and assessed how they: implement pluralism; contextualization; engage designers with intersectionality as a concept; evaluate the application of an intersectional approach.
In the synthesis phase, I answer the research question by discussing what the approaches address, what is still missing, and how the approaches contribute to counteracting dominant design. I determined that while there are meaningful attempts to implement aspects of intersectional thought in design practice and address some aspects of the challenges of implementation, the emerging efforts are still in their infancy, especially when it comes to systematically implementing intersectional feminist thought in design processes. This thesis did also reveal the potential for intersectional design approaches to address aspects of dominant design through an analysis of power-knowledge. Considering this, more work is required on how to do so and to fully explore the potential of intersectionality to improve design outcomes and counteract unequal power distribution. However, the following suggestions can be made as a starting point for designers when engaging with intersectional thinking in design practice:

(1) Embrace intersectional thinking by focusing on incorporating a plurality of experiential knowledge within the design process and by engaging with contextual relations of power;

(2) Strengthen collaborative and participatory design processes by systematically implementing intersectional thinking;

(3) Avoid implementing intersectional thinking in an oversimplified manner in design processes or turning intersectionality into a universal tool;

(4) Considered the matrix of domination as a framework to engage designers with power-knowledge, and to determine the root causes of problems and the implications of design outcomes.
(5) Recognize the risks of designing without acknowledging and addressing issues of power and assess the potential implications of using design frameworks.

7.2 Main contributions

Given that there is little scholarship about the relationship between design and power through an intersectional feminist lens and that there is an emerging call for design to critically engage with intersectionality (Canli & Martins, 2016), this study bridges this gap by exploring the potential of intersectionality in addressing issues of power in design. In addition, to my knowledge, assessing the implementation of intersectional thinking in design practice is a novel research contribution. This study also proposes an approach to assess intersectionality in the design process and provides a starting point for future design approaches that may want to do the same.

Furthermore, this thesis also contributes to the emerging scholarship on the often-unaddressed political nature of design and the potential harms of contemporary approaches by examining the concept of dominant design and how it operates in practice. The identification of some key principles of dominant design and the critical analysis of a mainstream design framework may offer ideas for analyzing other potential dominant design frameworks and tools. It is hoped that in a small way, this research will open opportunities to question the power-knowledge dominant design discourses and how they operate in different contexts and move toward a more even distribution of power in design practice and the outcomes of design.
7.3 Limitations and future research

As the scholarship on design and power is still emerging, it was difficult to find directly relevant material. Only a handful of works adopting intersectional feminist thought in design practice were discovered. However, non-English works were not included in this study, which may add to the breadth of literature that address these topics. Future work in this area would involve exploring works across cultures and collecting primary data in the field. This may include exploring how intersectional thinking is adopted in practice and engaging with design practitioners to strengthen the validity of the findings on dominant practices of design and the Double Diamond model.

It would also be interesting in future work to explore dominant paradigms of design and how they relate to power dynamics occurring from historical, geographical, political, economic, cultural, and etc. perspectives, as this may situate design – theory and practice – in time and space and identify milestones in how dominant design emerged.

Similarly, as this thesis evolved it became clear that theory and practice dynamically interact, once again supporting the idea that universalism may not be a preferred approach and context matters. It is certain that the design process will change and studying the evolution of the application of intersectional feminist thought and practice would also be an interesting study.

This thesis examined the role design plays in socio-political contexts and how the introduction of alternative ways of thinking in design may support social justice. There is still much work to be done to better understand how intersectional feminist thought can be systematically implemented in design processes. It would be useful to assess the
categories for assessing intersectionality to assess their validity in different contexts and how a successful implementation might strengthen co-design processes.

Since power evolves, there is the opportunity for future researchers to expand on the concept of dominant design to explore how the principles of dominant design may vary across contexts to both reveal power imbalances and to understand how to challenge them. It would also be useful to explore other mainstream design frameworks and assess how they fare under an intersectional feminist lens.

7.4 Reflections

In this thesis, I originally set out to explore how intersectional feminist thought might be incorporated into a mainstream design framework, such as the Double Diamond model, to challenge oppressive and exclusionary practices of design. As the research progressed, and as I deeply understood the nature of these paradigms of knowledge, I recognized how the Double Diamond model, in its current form, is incompatible with intersectional thought, that is, because it stifles the potential for bringing new ways of thinking forward in design. This led to a crucial turning point in this study where I suggested a change with my supervisors to move in a direction that further explored the nature of intersectional feminism and practices of dominant design.

Reflecting on this direction and the findings derived from this thesis raises further questions about the future of intersectionality and design and other potential areas of exploration, especially considering that the studied design approaches are still in their infancy. For instance, while evaluation or reflexive strategies are important to include in the design process, examining how these can be implemented in a design process to lead
to meaningful change should be explored further as well as questioning who ought to be involved in this activity and how.

Since this study focused on dominant design and its institutionalization processes, I worked within these boundaries by exclusively exploring academic knowledge. However, I recognize that there is the need to examine spaces outside of academia in future studies, such as community or industry initiatives, or local and traditional knowledge which might offer ways to counteract dominant design through an intersectional lens. Additionally, it would be beneficial to explore other modes of design, and critical methodological approaches in disciplines outside design since they may provide some insight as to how to rethink and question what design thinking is and to advance the introduction of intersectionality into mainstream and other forms of dominant design practices. This may also offer ideas for implementing intersectionality in specific sub-disciplines of design or other areas such as design education and bridge the gap between different approaches in design and institutionalized design practices. I hope to continue to engage with intersectional thinking in future endeavours and further contribute to the continuous evolution of the development and application of intersectional feminism in design.
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Appendices

Appendix A Analysis of the 3 design approaches - Pluralism

Design Justice & Pluralism

Design Justice, includes 3 principles that reflect, embody, and implement the element of pluralism: 2, 6 and 10. A principle to Design Justice is principle 2: “We center the voices of those who are directly impacted by the outcomes of the design process” (Costanza-Chock, 2020, p. 6). This principle partly embodies aspects of pluralism by bringing the voices of community members to the centre in the design process. This addresses aspect P. a) of pluralism: recognizing and valuing multiple ways of being. Specifically, community members are seen to bring valuable experiential knowledge to the design project to produce outcomes that better reflect those affected by design. As for how and when to implement aspect P. a), the principle proposes to strengthen the codesign process by partnering with community-based organizations from the beginning of the design process and ensuring their full participation in the design process. Similarly, Principles 6 and 10:

We believe that everyone is an expert based on their own lived experience, and that we all have unique and brilliant contributions to bring to a design process

Before seeking new design solutions, we look for what is already working at the community level. We honor and uplift traditional, Indigenous, and local knowledge and practices (Costanza-Chock, 2020, p. 7),
Both address aspect P. a). They do this by valuing knowledge and local productions of knowledge that are often marginalized or suppressed and the need to consider them in the design process. In principle 6 and 10, the author provides more information on how and when to implement aspect P. a) of pluralism: designers must build strong relationships with the community they seek to support by spending time with them and repurposing and modifying existing tools and processes at the community level early in the process. This amplifies community perspectives and practices and centres the design process around them.

There is no specific reference in any of the Design Justice principles that involve P. b) or P. c) of pluralism, that is, how designers can understand the multidimensional intersecting aspect of identity and how they consider the intersections of identities when they design.

**Data Feminism & Pluralism**

Data Feminism, includes 3 principles that reflect, embody, and implement pluralism: 2, 3, and 5. Principle 2: *Challenge power* addresses P. a) by proposing strategies to counteract oppression such as critically collecting datasets that might be overlooked or completely missing due the lack of regard for marginalized perspectives and experiences. Furthermore, the community must be involved in this process. This addresses P. a) since it acknowledges and values different ways of knowing and being that are often underrepresented in datasets. For example, a more specific suggested strategy might be countermapping with local communities as it brings local knowledge to
the centre of the design process to reveal information and knowledge that is otherwise overlooked.

Principle 3: *Elevate emotion and embodiment*, partly addresses P. b) and P. c) by taking feelings and emotions into consideration in the design process. Feelings and emotions can provide a different perspective for designers in design processes and enable plural solutions. It does that by deepening designers’ empathy through revealing the complexities and dimensions of human emotion that is embedded in social identities and ways of being. A specific way in which this is done is by asking everyone to state their positionality in any knowledge production process at the beginning of the process. However, they do not refer specifically to how this should be implemented in the design process.

Principle 5 of Data Feminism which is *Embrace pluralism*, embraces P. a) since it advocates for synthesizing and valuing many perspectives during the design process, with an emphasis on local, Indigenous, and experiential ways of knowing and being. This is also the case when the authors argue that multiple perspectives, especially those directly impacted by the issues at hand, must be brought together in any knowledge production process and at all stages of the process from collecting data to communicating data. Regarding how, this principle proposes several strategies that embrace pluralism: practices of reflexivity, transparency, inviting other perspectives into data analysis, and including them in data storytelling.

Although principle 3 partly addresses the multidimensional aspect of identity and how to consider this in the design process, that is point P. b) and point P. c), there is no
specific reference to how designers can understand that identities intersect and how to consider this when designing.

Towards an Intentional Intersectional Practice & Pluralism

Towards an Intentional Intersectional Practice reflects, embodies, and implements the element of pluralism in principles 2, 4, and 5. Specifically, principle 2: 

*Learn/Unlearn* advises designers to self-reflect by stating potential bias, listen to people, learn from different perspectives and experiences, and be open to approaching things in new ways as an ongoing process – which are suggestions on how to implement P. a) of pluralism because they encourage designers to expose themselves to new or alternative knowledge and perspectives. Regarding how and when, a suggested strategy is to read works by persons who belong to marginalized groups early in the design process.

Similarly, principle 4: *Question* addresses P. a) since it advises designers to ask different people about their lived experiences. These principles and strategies encourage exposure to diverse ways of being and knowing from those who have directly or closely experienced different forms of oppression.

Principle: 5. *Apply*, partly addresses aspect P. c) since it is concerned with taking action to inform design decisions by applying a designers’ pluralistic insights and learnings from the previous steps in the design process. To do this, designers are told to draw on the diverse knowledge, lived experiences, and different perspectives collected throughout their design process and ask marginalized groups what they need and how to support them. However, this principle does not state exactly how to specifically apply these aspects to the design process or how to apply multiple intersectional perspectives.
There is no specific reference in any of the principles on how designers can address P. b).

Appendix B Analysis of the 3 design approaches - Contextualization

Design Justice & Contextualization

The Design Justice approach considers and aims to implement aspects of the element of contextualization in principles 3 and 5. Principle 3: “We prioritize design’s impact on the community over the intentions of the designer” (Costanza-Chock, 2020, p. 6), embodies aspect C. a) since it encourages designers to consider factors that shape the social experiences of participatory design processes such as time, resources, economic access, and ownership. However, there are no specific details regarding how to consider these factors in the design process.

Principle 5: “We see the role of the designer as a facilitator rather than an expert” (Costanza-Chock, 2020, p. 7), partly embodies C. b) by encouraging an examination of power dynamics and how social experiences may be affected by different conditions that affect the design process. This encourages designers to confront forms of structural inequality that may be reproduced by the design process. Regarding how, when, and who should do this, this principle suggests that all participants openly and explicitly discuss experiences of oppression and privilege early and often in the design process to understand how to deal with them and suggests that different tools and training resources
such as the AORTA anti-oppression training manuals (Anti-Oppression Resource & Training Alliance, n.d.) can support these discussions.

There is no specific mention of how designers are to address the aspect of understanding how conditions relate to intersectional experiences.

**Data Feminism & Contextualization**

Data Feminism embodies and includes the element of contextualization in principles 1, 2, and 6. The first two principles of Data Feminism: 1. *Examine power* and 2. *Challenge power* embrace both C. a) and partly C. b) of contextualization by urging designers to directly and deeply engage with conditions that shape problem spaces to address root causes of structural oppression. In doing so, designers acknowledge the importance of context and critically engage with relations of power to understand how experiences of oppression and privilege manifest through different conditions. In terms of when this should be done, these principles emphasize that designers ought to focus on the research phase to identify the underlying factors that frame varying issues of oppressions and intersectional experiences. These principles suggest specific strategies for how this can be done such as: collecting counterdata, analyzing and exposing oppressive contexts, recognizing differences and practicing co-liberation, and considering identities in knowledge production.

Principle 6: *Consider context*, embraces both C. a) and partly C. b) since designers are encouraged to investigate contexts using the framework of subjugated knowledge. This means that this principle recognizes the importance of power-knowledge and the conditions that shape certain discourse. To do this, designers are to
ask questions and investigate the social, historical, cultural, institutional conditions of
knowledge claims and about the identities of the people who created such knowledge.
This principle therefore focuses on the research phase in a design process which pushes
designers to develop deeper understandings of forms of oppression and the contextual
factors which shape them to expose and address them.

All three principles, i.e., 1, 2, and 6, ought to be used in a collaborative and
participatory design process to better understand the context of an issue to enact change.
Also, the principles emphasize the importance of identity in knowledge production
processes but do not explicitly offer strategies for how designers can connect contextual
factors to the intersectional nature of social experiences.

Towards an Intentional Intersectional Practice & Contextualization

With Towards an Intentional Intersectional Practice, there are three principles that
aim to implement the element of contextualization: principles 2, 3, and 4. Principle 2,
b Briefly touches upon aspect C. a) by asking designers to observe what is happening in
different contexts but little explanation is provided. In contrast, principle 3. Contextualize
and principle 4. Question, directly address aspect C. a) and partly C. b) since these
require designers to deeply engage with conditions related to the design process by
encouraging them to critically analyze their role and how their actions shape the context
that inform the outcome, and subsequently user experiences of oppression and privilege.
In terms of how, this principle asks designers to critically think and identify blind spots
through a series of suggested questions. These principles however do not mention how
designers should address the relation between contextual factors and intersectional social experiences.

**Appendix C Analysis of the 3 design approaches - Engagement**

**Design Justice, Data Feminism & Engagement**

Although the Design Justice and Data Feminism approaches ask designers to design with an intersectional lens there are no clear strategies that address the challenge of engagement. The authors engage with intersectionality as a concept by surveying and presenting relevant literature, yet there is no explanation of how the elements of intersectional feminist thought systematically informed the emergence of all 10 Design Justice principles and all 7 principles of Data Feminism. In terms of recommended approaches and guiding principles, none explicitly describe if and how designers ought to closely engage with the concept of intersectionality and to understand its elements during the design process.

**Towards an Intentional Intersectional Practice & Engagement**

Towards an Intentional Intersectional Practice partly addresses the challenge of engagement in the first principle of the approach: 1. *Show Up*. This principle directly asks designers to be prepared to engage with intersectionality, which leans toward an engagement with intersectional discourse but does not explicitly outline methods for how to prepare or how to engage in conversations on intersectionality.
Appendix D Analysis of the 3 design approaches - Evaluation

Design Justice & Evaluation

In the case of Design Justice, there is no reference or proposed strategies in any of the ten principles on how designers can evaluate whether intersectional thinking was successfully applied in their design process while using a Design Justice approach. The Design Justice approach refers to the need for intersectional tools and methods by suggesting the development of intersectional benchmarks to systematically evaluate if intersectional thought is considered in designed objects, systems, and services. However, no specific details on how to do so are provided in the principles, nor when this should take place in the design process.

Data Feminism & Evaluation

Data Feminism provides a strategy that partly addresses evaluation in their metrics for holding the authors accountable (see section 4.2.2). The metrics partly evaluate by developing a strategy to audit the values that they aimed to uphold and to hold themselves accountable for their actions and final outcomes. Specifically, the metrics are used to evaluate point P. a) of pluralism: designers recognize and value multiple ways of being and knowing, since the audit is focused on the inclusion/exclusion of multiple voices and perspectives. However, the metrics do not explicitly include anything about intersecting identities or how to evaluate the application of all elements of intersectionality.
Towards an Intentional Intersectional Practice & Evaluation

In Towards an Intentional Intersectional Practice, there is one principle that partly addresses evaluation: principle 6. *Evaluate*, which acknowledges the need for an evaluation of the design process by suggesting that designers reflect on mistakes made and by holding themselves accountable for unforeseen implications by acknowledging those mistakes. However, there remains a lack of specificity on how this relates to intersectionality since there is no mention as to how designers evaluate whether intersectional elements were successfully applied to the design process.

Appendix E Analysis of the 3 design approaches – Data organization

Analysis of Design Justice

<table>
<thead>
<tr>
<th>Intersectional element or challenge</th>
<th>Principle/quote</th>
<th>Description</th>
<th>Strategy to implement or address challenge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pluralism: P. a)</td>
<td>2. “We center the voices of those who are directly impacted by the outcomes of the design process” (p. 6). “Who gets to do design work?” Especially in design teams that include students, many ask some version of questions like: What is the community in this project? Who gets to speak for the community? How do we make our design process?</td>
<td>Ensuring community members and partners are directly involved in the entire design process and decision-making. Value experiential knowledge to better inform outcomes.</td>
<td><strong>How:</strong> bringing voices of community members in the design process through collaborative processes. <strong>Who:</strong> community members, community-based organizations. Designers’ responsibility to strengthen co-design process. <strong>When:</strong> entire design process and partner with community at the beginning of the process.</td>
</tr>
<tr>
<td>Intersectional element or challenge</td>
<td>Principle/quote</td>
<td>Description</td>
<td>Strategy to implement or address challenge</td>
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</table>
| 6.                                | “We believe that everyone is an expert based on their own lived experience,” and that we all have unique and brilliant contributions to bring to a design process” (p. 7). | Building strong relationships with community, value lived experience as form of knowledge. | **How:** already have relationships with community partner organizations. Foster relationships with communities.  
**Who:** designers and community members.  
**When:** before or during the design process. |
| 10.                               | Before seeking new design solutions, we look for what is already working at the community level. We honor and uplift traditional, Indigenous, and local knowledge and practices what already works at a community level.” (p. 7). “This includes exploring whether the design team might be able to amplify, remix, or otherwise repurpose existing projects, practices, applications, or tools, rather than build something new” (p. 203). | Valuing the work that is already being done from multiple perspectives that are often marginalized. | **How:** reuse or repurpose existing projects and knowledge from the community. Spending time with the community.  
**Who:** designers and community members.  
**When:** early in a design process. |
<p>| Contextualization: C. a)          | 3. We prioritise design’s impact on the community over the intentions of the designer. “What will community members | Encourages designers to consider factors that shape the social experiences of participatory design processes such as time, | No specific details on how to consider these |</p>
<table>
<thead>
<tr>
<th>Intersectional element or challenge</th>
<th>Principle/quote</th>
<th>Description</th>
<th>Strategy to implement or address challenge</th>
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<tr>
<td>Contextualization: partly C. b) (no mention of intersectional social experiences)</td>
<td>get out of the process? In particular, community members who live at the intersection of multiple forms of oppression often don’t have free time to dedicate to a design process. Ideally, they will be paid for their time, but even so, community partners can sometimes be, and feel, used by the design process” (p. 193).</td>
<td>Privilege and power must be discussed with everyone involved in the project to work together to find how to challenge the reproduction of structural oppression within the design process. Balance hierarchies of decision-making.</td>
<td>How: participants openly and explicitly discuss experiences of oppression and privilege. Different tools and training resources such as the AORTA anti-oppression training manuals. <strong>Who:</strong> all participants involved in the design process. <strong>When:</strong> often and early in the design process.</td>
</tr>
<tr>
<td>Engagement</td>
<td>Does not mention anything related to engaging designers with intersectional discourse.</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>Evaluation</td>
<td>Not part of a principle but mentioned in the book. Must develop “Design Justice auditing methods that account not only for the intersectional nature of</td>
<td>Intersectional benchmarks must develop design justice tools to evaluate discriminatory design through an intersectional lens. There must be tools to conduct intersectional audits through multiple</td>
<td>No specific strategies on how, who, and when.</td>
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<td>identities, but also for the fluidity of identity categories (which shift over time at a societal level), individual identification (which may shift over an individual’s lifetime), and expression/performance (which constantly shifts, consciously or not, in the course of daily life)” (p. 224).</td>
<td>strategies and approaches.</td>
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**Analysis of Data Feminism**

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<tr>
<td>Pluralism: P. a)</td>
<td>2. Challenging power “Requires mobilizing data science to push back against existing and unequal power structures and to work toward more just and equitable futures” (p .53).</td>
<td>Four starting points to challenge power in the context of data science, i.e., collect, analyze, imagine, teach. Acknowledgement that “oppression is real, historic, ongoing, and worth dismantling” (). Exposing intersectional injustices and building evidence of the existence of plurality (important to remember that oppressed groups should not have to prove that their oppression is real). Change binary logic and reductive ways of thinking. Embracing multiple perspectives</td>
<td><strong>How:</strong> critically collecting datasets that might be overlooked or missing. Countermapping to bring local knowledge to the centre of the process. <strong>Who:</strong> community must be involved in the process, local communities. <strong>When:</strong> no specific details, but examples focus on data collection (research), and communicating data. <strong>How:</strong> state one’s positionality</td>
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<td>3. Elevate emotion and embodiment. “Teaches us to value multiple</td>
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<td>Contextualization: C. a) and partly C. b)</td>
<td>forms of knowledge, including the knowledge that comes from people as living, feeling bodies in the world” (p. 18). 5. Embrace pluralism. “Embracing pluralism in data science means valuing many perspectives and voices and doing so at all stages of the process—from collection to cleaning to analysis to communication. It also means attending to the ways in which data science methods can inadvertently work to suppress those voices” (p. 130). 1. Examine power and 2. Challenge power “Who does the work (and who is pushed out)? Who benefits (and who is neglected or harmed)? Whose priorities get turned into products (and whose are overlooked)? Ultimately, the goal of examining power is not only to understand it, but also to be able to challenge and change it&quot; (p. 47).</td>
<td>and positionalities to acknowledge and incorporate emotion in data visualization. Focus on human experience and allows focus on honouring intersections. advocates for synthesizing and valuing multiple perspectives, with emphasis on local, Indigenous, and experiential ways of knowing. Multiple perspectives must be brought together in any knowledge production process, especially those directly impacted by the issues in question. Strategies might be reflexivity, transparency, inviting other perspectives into data analysis and storytelling.</td>
<td><strong>Who:</strong> everyone involved in a knowledge production process.  <strong>When:</strong> at the beginning of the process. <strong>How:</strong> Multiple perspectives must be brought together in any knowledge production process, especially those directly impacted by the issues in question. Strategies might be reflexivity, transparency, inviting other perspectives into data analysis and storytelling.  <strong>Who:</strong> designers and community members  <strong>When:</strong> throughout process. <strong>How:</strong> Deeply engaging in problem space, problem discovery/root causes. Understand the scope, scale, and features of the problems. Shifting the focus from things that secure power to those that challenge like equity and co-liberation.  <strong>Who:</strong> Learn from and design with the communities  <strong>When:</strong> research/entire process.</td>
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<td>Contextualization: C. a) and partly C. b)</td>
<td>6. Considering context, “a process that includes understanding the provenance and environment from which the data was collected, as well as working hard to frame context in data communication (i.e., the numbers should not speak for themselves in charts any more than they should in spreadsheets)” (pp. 171-172).</td>
<td>Numbers cannot speak for themselves and are not representative of the context. Contextualizing is about questioning this and analyzing where there are silences in datasets or missing data, whose knowledge is subjugated.</td>
<td><strong>How:</strong> subjugated knowledge. investigate the social, historical, cultural, institutional conditions of knowledge claims and about the identities of the people who created such knowledge. <strong>Who:</strong> designers and community. <strong>When:</strong> research phase, discovery.</td>
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<tr>
<td>Engagement</td>
<td>Does not mention anything related to engaging designers with intersectional discourse.</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>Evaluation</td>
<td>Not a principle but a strategy by authors in their work. <em>Our Values and Our Metrics for Holding Ourselves Accountable.</em></td>
<td>Prioritize the voices of those who are closely or directly affected by forms of oppression rather than those who study them from a distance.</td>
<td><strong>How:</strong> metrics to audit their own work. How/if values transpire to action. Assessing their inclusion/exclusion of sources and examples. <strong>Who:</strong> designers/authors <strong>When:</strong> at the end of their process.</td>
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### Analysis of Towards an Intentional Intersectional Practice

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<tr>
<td>Pluralism: P. a)</td>
<td>2. Learn/Unlearn “At first your job is to listen. All it takes it to listen to these people. It is no one’s job to teach</td>
<td>Learning is about listening to other people, learning from outside perspectives, observing what is happening in</td>
<td><strong>How:</strong> stating potential bias, listen to people, learn from different perspectives and experiences, be open to approaching things in new</td>
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<tr>
<td>1. Intersectionality</td>
<td>you if they don’t want to. Especially if these people are marginalized. We’ve taught enough people, you’re not the first, you won’t be the last. Practice consent while learning. Do not be extractive with your process. You’ve got to educate yourself” (p.34). 4. Question “Ask other people. Intersectionality is based in understanding that every experience is unique and valid. Asking fills blind spots, it adds robustness to your learning, contextualization, questioning; your overall practice” (p. 34).</td>
<td>different contexts, and being open to approaching things in new ways. Asking questions like “what biases do I hold”.</td>
<td>ways. Read works by marginalized individuals. <strong>Who:</strong> designers learning from others. <strong>When:</strong> early in the design process.</td>
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<td>Contextualization: C. a)</td>
<td>5. Apply “This looks different for everyone, in every situation. It can look like actively, vocally sharing your intersectional practice” (p. 34). 2. Learn/Unlearn “At first your job is to listen. All it takes it to</td>
<td>This step goes hand in hand with contextualize. It is about questioning and critically thinking about your processes and information. Asking other people fills blind spots and supports contextualization.</td>
<td><strong>How:</strong> ask different people about their lived experiences. <strong>Who:</strong> designers asking others.</td>
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<td><strong>How:</strong> draw on the diverse knowledge, lived experiences, and different perspectives collected throughout their design process and ask marginalized groups what they need and how to support them. <strong>Who:</strong> designers taking action. <strong>When:</strong> near the end of the process.</td>
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<td>No specific details provided on how to observe different contexts.</td>
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<td>listen to these people. It is no one’s job to teach you if they don’t want to. Especially if these people are marginalized. We’ve taught enough people, you’re not the first, you won’t be the last. Practice consent while learning. Do not be extractive with your process. You’ve got to educate yourself” (p.34).</td>
<td>perspectives, observing what is happening in different contexts, and being open to approaching things in new ways.</td>
<td><strong>Who:</strong> designers</td>
<td></td>
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<td><strong>Contextualization:</strong> C. a) and partly C. b) (no mention of intersectional social experiences)</td>
<td>3. Contextualize “Who is your community? How are you connected? What is your power? Who do you ally with? Why? What makes you uncomfortable? (Dig deep) whose ideas do you seek out? what ideas do you seek out? whose ideas do you legitimize?” (p. 34).</td>
<td>This entails critical thinking and identifying blind spots such as exploring where information is coming from, who is at the table, and who is missing. This stage is about defining details and deeply engaging with the problem space</td>
<td><strong>How:</strong> critically think and identify blind spots through a series of suggested questions related to conditions and actions in the design process. <strong>Who:</strong> designers analyze their role and actions and how this might affect others. <strong>When:</strong> middle of the process.</td>
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<tr>
<td>4. Question “Ask other people. Intersectionality is based in understanding that every experience is unique and valid. Asking fills blind spots, it adds robustness to your learning, contextualization, questioning; your</td>
<td>This step goes hand in hand with contextualize. It is about questioning and critically thinking about your processes and information. Asking other people fills blind spots and supports contextualization.</td>
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<td><strong>How:</strong> critically think and identify blind spots through a series of suggested questions. <strong>Who:</strong> designers. <strong>When:</strong> middle of the process.</td>
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<td><strong>Engagement</strong></td>
<td>“How ready are you to make this, not about (just) you? You’ve got to commit, and sometimes it’s going to suck. But if you’re not ready to approach this work, how can you be ready to design with/for.centering other people?” (p. 34).</td>
<td>Being prepared and willing to engage with discussions on intersectionality and be ready to approach intersectional thinking before designing with/for.centering other people.</td>
<td>No specific details provided on how designers can prepare or how to engage with intersectionality.</td>
</tr>
<tr>
<td><strong>Evaluation</strong></td>
<td>“It is NOT enough to say, “well we tried” Intersectionality is about accountability. HOLD YOURSELF ACCOUNTABLE” (p. 34).</td>
<td>Evaluation and accountability. A time to reflect, learn from mistakes, hold oneself accountable, and commit to doing better next time.</td>
<td>Acknowledges a need for evaluation but no direct mention of how to evaluate the application of intersectionality in the design process. <strong>Who</strong>: designers <strong>When</strong>: end of the process.</td>
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</table>