

Book Review

Invisible Women: Data Bias in a World Designed for Men

Author: Caroline Criado Perez

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Overview

*Your phone is too big for your hand
Your doctor prescribes a drug that is wrong
for your body
In a car accident you are 47% more likely to
be seriously injured
- If any of this sounds familiar, chances are
that you are a woman*

This book, **Invisible Women: Data Bias in a World Designed for Men**, was the Winner of the 2019 Financial Times and McKinsey Business Book of the Year Award, and the Winner of the 2019 Royal Society Science Book Prize. The author, Caroline Criado Perez, is a writer, broadcaster, and award-winning feminist activist, named Liberty Human Rights Campaigner of the Year and OBE by the Queen.

In this book, Caroline Criado Perez identifies a phenomenon that exists in the real-world data world, the gender data gap. This phenomenon is overlooked by many, and some gaps are even taken for granted. However, she points out that the data gender gap is more than just silence. These silences, these voids, have consequences. They impact women's lives every day (Perez, 2019). In this book, Caroline Criado Perez discusses different elements of the modern world that seem to be designed with little regard for women: transportation systems, medical devices and treatments, tax structures,

consumer goods, and even the smartphones and voice recognition technology we use every day (Wired.com, 2019). The issues relevant to gender data gap are organized into six parts

Part I: Daily Life

Part II: The Workplace

Part II: Design

Part IV: Going to the Doctor

Part V: Public Life

Part VI: When It all Goes Wrong

Review

To justify her main claim of the book—the world is not designed for women, as clearly put in the title-- Caroline Criado Perez convincingly supports her argument from various sources --not only using a large amount of primary data (such as interviews, etc.), but also utilizing secondary data from authoritative sources, including the United Nations and the European Union and its subordinate agencies, official agencies in various countries, and a large number of newspapers and magazines. Rich data resources present us with a real 'gender data gap'. Furthermore, the examples she cites and elaborates on come not only from developed countries, but also from a number of developing countries. These provide readers with diverse and dynamic perspectives.

In Part 1, Caroline Criado Perez illustrates how women's needs in urban

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transport and public facilities are overlooked in male-dominated infrastructure design by providing examples of urban transport and public toilet availability. Women's needs are often unknowingly ignored in urban transport design. For example, a 2014 EU report (Eurobarometer, 2014) on transport satisfaction in European cities described men's travel patterns as "standard", ignoring the fact that women's travel patterns tend to be more complex. Women account for 75% of unpaid care work globally, such as taking children from school and shopping on the way home, which affects their travel needs. According to statistics, women tend to use more public transport. In France, two-thirds of public transit passengers are women, compared with 64% in Philadelphia and 62% in Chicago. However, transportation as an occupation (e.g., planning) is highly male dominated. The UN Commission on the Status of Women found "male bias" in transport planning and failure to address gender issues in system configuration (Zottis, 2014). Often, the men who originally designed the schedule knew how they traveled and designed it around their needs. Instead of deliberately starting to exclude women, they simply don't think about them, and don't consider whether women's needs will be different. Likewise, women's needs are problematic when it comes to public health facilities. For example, women are accustomed to queuing when they go out and go to the toilet 2.3 times longer than men. One third of women do not have access to a safe toilet. Difficulty accessing safe public facilities puts women at risk of sexual assault. Urban planning that fails to take into account women's risk of sexual assault clearly violates women's equal rights to public spaces—and inadequate sanitation is just one of many ways planners exclude women with such gender-insensitive designs.

Part II articulates how job rules and standards for career development have been designed for and by men (Rosenzweig, 2021). In the workplace, women's career development is also easily restricted. According to statistics, unpaid work is mainly done by women (such as in Denmark, Norway,

and the United Kingdom), and women often work longer hours than men (such as in South Korea, Portugal, China, South Africa). In addition, women are more likely than men to experience work-related stress, anxiety, and depression, which increases hospitalization and mortality in women. In terms of wages, women earn less than men. In the UK, for example, women make up 61% of those earning less than a living wage (Fawcett Society, 2018). This directly affects their pensions. Pensioners are paid directly based on their past contributions and the number of years they are expected to receive benefits. In this case, women belong to the disadvantaged group. In short, around the world, women continue to be disadvantaged in work cultures that are based on the prevailing ideological beliefs of men's needs.

In Part III, Caroline Criado Perez narrates the stories of product specification that have neglected sex differences. In product design, "one-size-fits-men" dominates, becoming a "one-size-fits-all" approach. Product designs are often based on male needs, such as standard keyboards and smartphones, which can affect women's health. The "one-size-fits-all" approach allows men to use their devices very comfortably with one hand, while women cannot. For example, female pianists have a 50% higher risk of pain and injury than male pianists. Similar problems have been found in various male-biased designs, including speech corpora, resume scanning software, image datasets, and databases such as artificial intelligence. In conclusion, the current approach to product design is not good for women, which is affecting their ability to work effectively, and their health and safety.

Part IV discusses how medical research and health care delivery overlook the needs of women. Male-default bias is commonly found in the medical field, in terms of how doctors are trained. Medical education has been focused on a male 'norm', and representation of the male body as the human body persists. In addition, women have largely been excluded from medical research. For example, most early research into cardiovascular

disease was conducted on men, and women continue to be under-represented. Female under-representation in medical research creates potential risk to women, and females are not even included in many animal studies on female-prevalent disease. Moreover, male-bias advice is also prevalent including recommendations for diabetics to do high-intensity interval training. Further, medical practices that do not consider women's socialization are a common problem in prevention efforts, including the use of condoms to avoid HIV and Ebola infections. This can lead to an undiagnosed behavioral disorder in which women live for decades.

Part V discusses how women are disadvantaged in social policy and taxation. Women are the main contributors to unpaid work, but unpaid work is not included in GDP. This largely negates the contribution of women to GDP. At the same time, in the calculation of the unemployed population, the proportion of women is larger than that of men. In the UK, tax, and benefit changes since 2010 hit women's incomes twice as hard as men's by 2020. As far as the current tax system is concerned, it gives men higher tax rebates than women. The truth is that men are more likely to be employed in the formal economy, while women are more likely to be self-employed in the informal economy. Many male-biased benefits actually come at the expense of women, who mostly work unpaid.

Politically, democracy is biased against electing women. That's because male and female legislators inevitably bring different perspectives to politics. Male-dominated legislatures "will therefore suffer from gender data gaps" that will prevent them from serving female citizens (Perez, 2019, p. 273). Most governments in the world are usually led by men. By 2017, the average share of women among the world's parliamentarians was only 23.5%. Under such circumstances, there are still objective obstacles to the realization of women's rights.

Part VI discusses how women often carry a disproportionate burden in difficult times. We face various crises, including wars,

natural disasters, epidemics, but reconstruction programs often ignore the needs of women (for example, in Gujarat, Sri Lanka). Because women's unpaid work is not measured, their needs are not taken into account in any reconstruction efforts. More importantly, there is no international law requiring the inclusion of women's voices in post-disaster planning. For women trying to flee war and disaster, there is a greater risk of sexual assault and violence while staying in refugee camps.

In summary, in a modern civilized society, we must listen to women's voices, safeguard women's rights and interests, and respect women's needs. Closing the gender data gap won't solve all the problems women face, but it can go some way to rebuilding society and lessening the effects of male dominance. This book is worth reading for everyone, especially businesspeople, policy makers, and academics. For example, merchants should consider the gender data gap during product development, where a "one-size-fits-all" approach can diversify to meet the needs of female consumers.

Main contents are extracted from *Invisible Women: Data Bias in a World Designed for Men*, by Caroline Criado Perez (Vintage Publishing, 2019)

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