TEL AVIV UNIVERSITY
Pursuing the Unknown

Gershon H. Gordon Faculty of Social Sciences
Tel Aviv University

LOOKING BEYOND LIFE EXPECTANCY:

HOW LIFESPAN INEQUALITY CHANGES IN ISRAEL

The Boris Mints Institute for Strategic Policy Solutions to Global Challenges,

Department of Sociology and Anthropology, Faculty of Social Sciences, TAU

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BACKGROUND

1. Lifespan inequality

One of the classic questions in the social sciences concerns the unequal distribution of resources and rewards among the members of societies (Smits & Monden, 2009)

Income and wealth inequality

Educational attainment inequality

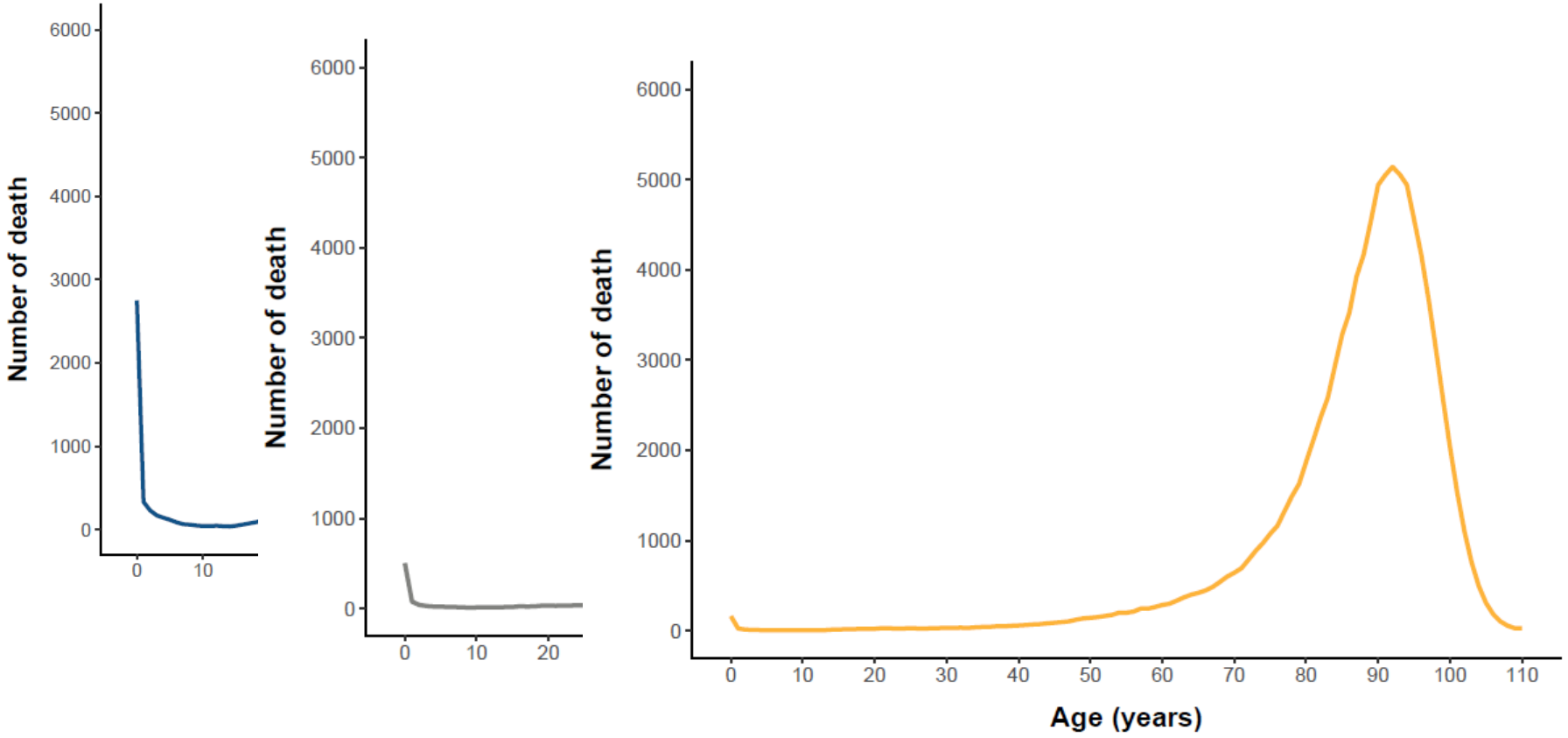
Occupational status inequality

Lifespan inequality

Individuals' difference in life chances or inequality in length of life

1. Lifespan inequality

Distributions in length of life (or age at death)



1. Lifespan inequality

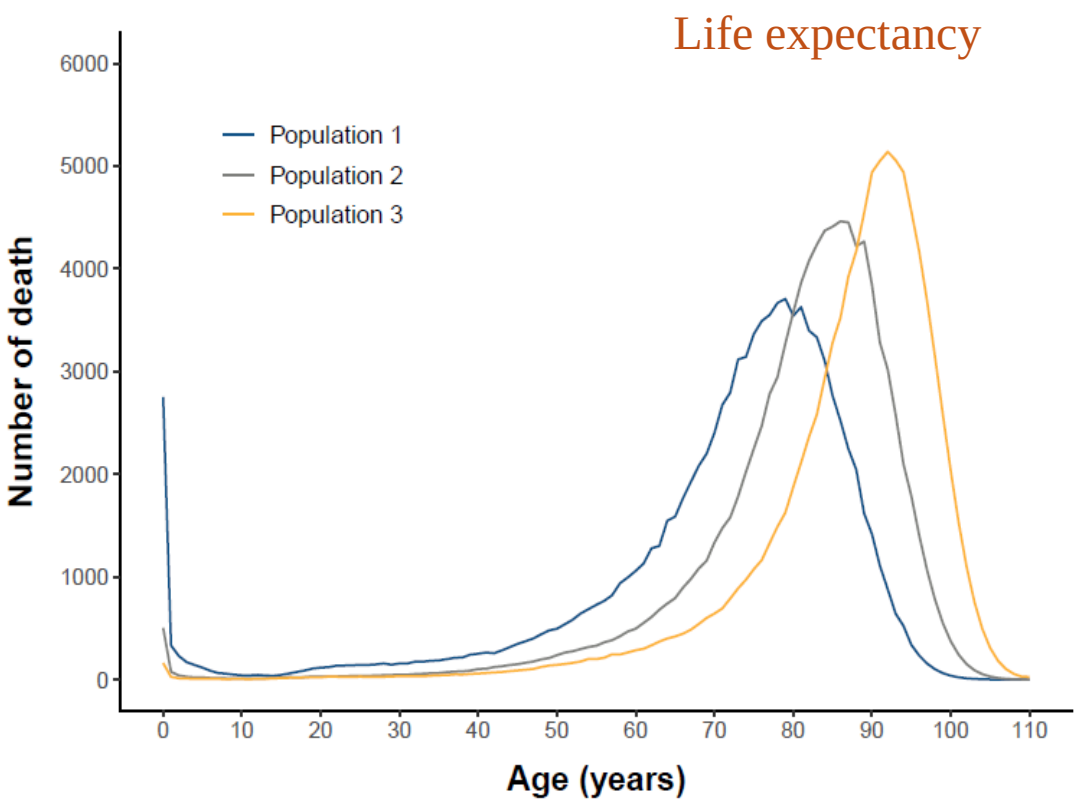


Fig. Distributions of number of death by age for different populations

- Lifespan inequality captures the heterogeneity in individuals' length of life
- Lifespan inequality is one of the most important inequalities
- Lifespan inequality, together with life expectancy present a broader understanding of population health
- Lifespan inequality has both individual and population impacts

2. Lifespan inequality changes

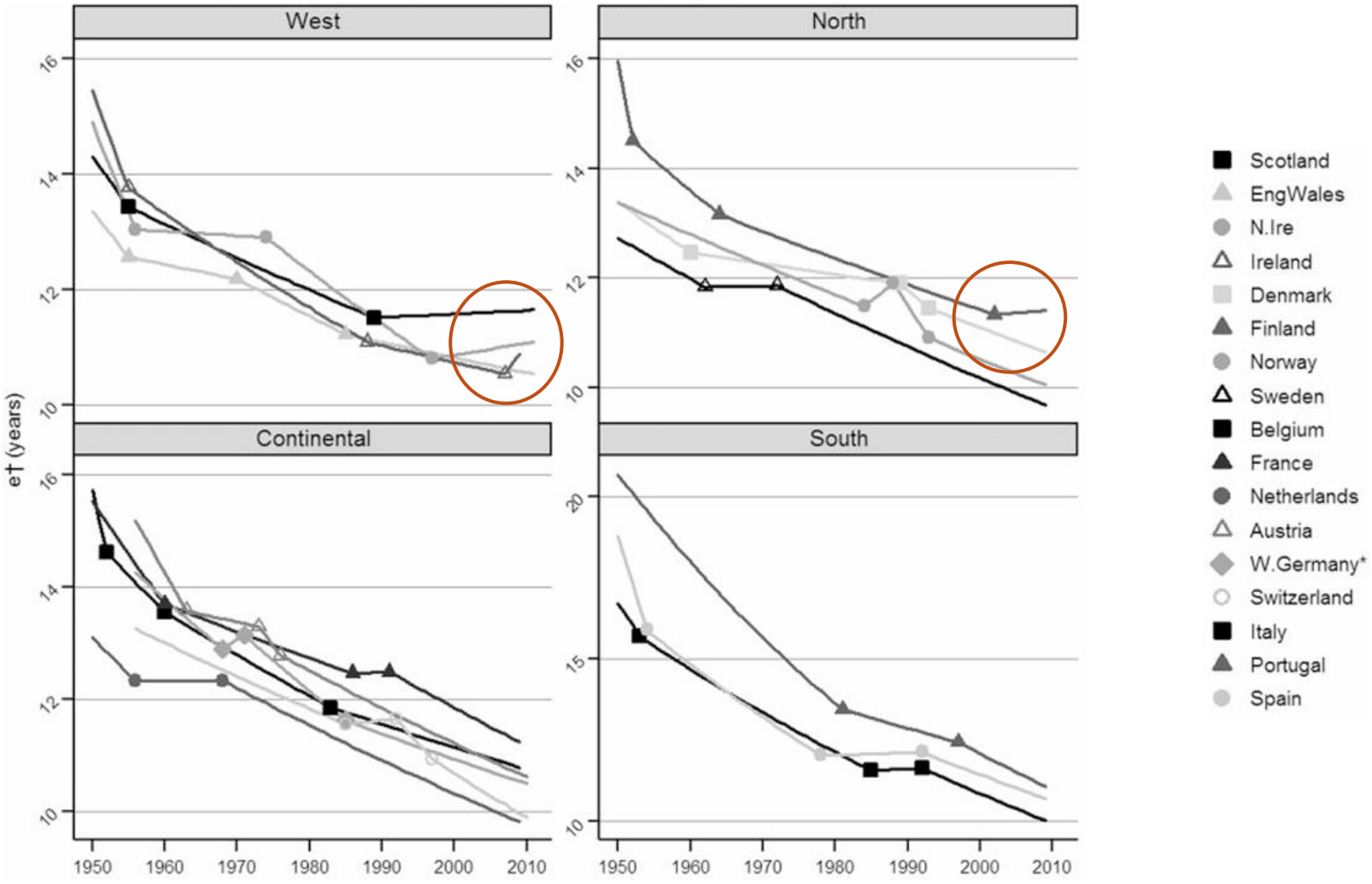


Fig. Lifespan inequality among men in some European countries, 1950-2010

(Seaman et al., 2016)

4. Why lifespan inequality changes

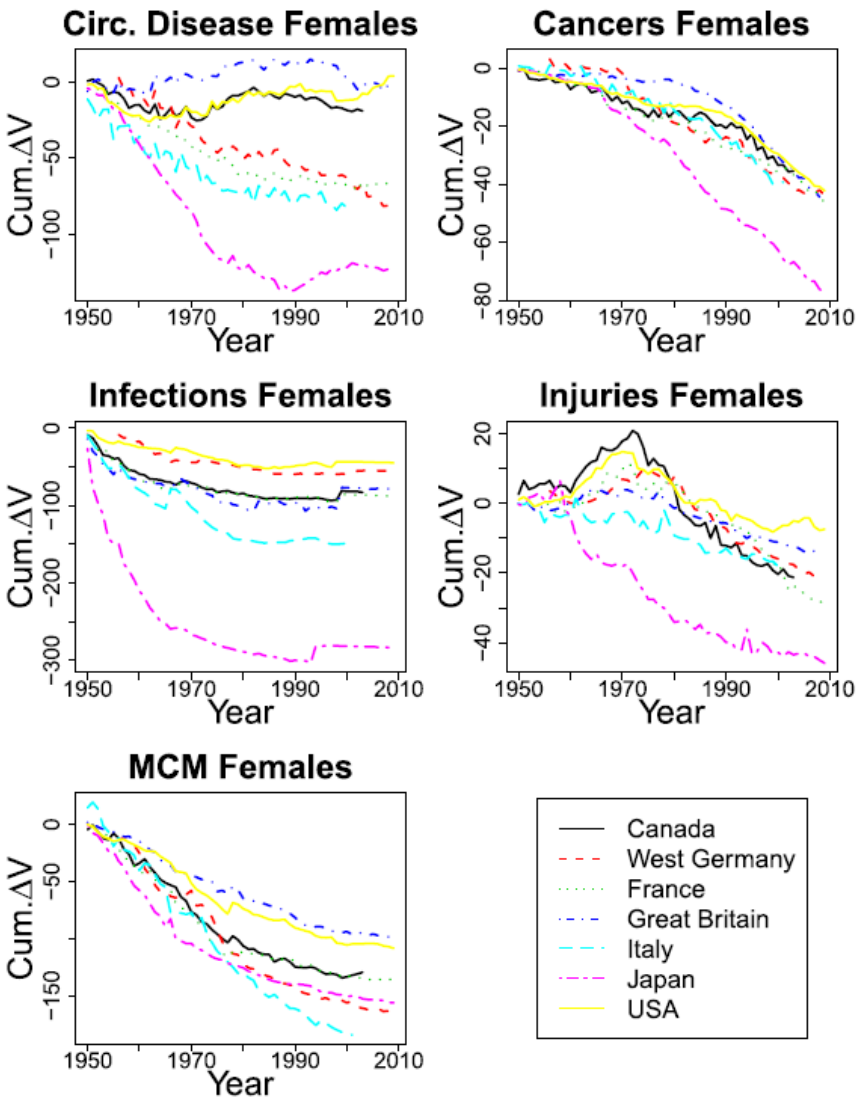


Fig. Cumulative cause-specific contributions to change in lifespan inequality in females between 1950-2010
(Seligman et al., 2016)

- Reductions in maternal and child mortality and reductions in mortality from infectious diseases and injuries were important contributors to lifespan inequality changes in observed high-income countries
- Cancers also played an important role in reducing lifespan inequality
- Circulatory diseases posed different impacts on lifespan inequality across observed high-income countries

5. Life expectancy in Israel

Why Is Israel's Life Expectancy

Arab–Jewish gap in life expectancy in Israel

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Abstract

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Background: Studies about the health status of ethnic minorities in the Middle East are rare. This article examines changes in the life expectancy gap during 1970–2010 between the Arab–Palestinian minority and the Jewish majority in Israel, a persistent gap that has widened over the last 20 years. It examines the gap in a period over which the minority group was undergoing an epidemiological transition and demonstrates consequences of the transition on changes in the main causes of death contributing to the life expectancy gap. **Methods:** Decomposition methods estimate the contribution of specific age groups and causes of death to the total gap in life expectancy at any given year and changes in these contributions over the studied period. **Results:** The contribution of mortality differentials at ages <45 years to the Arab–Jewish gap in life expectancy declined while that of differentials at ages >45 has been gradually growing reaching >70% of the total gap. For both males and females, trends in cancer and diabetes mortality differentials contributed to widening the gap among the elderly. Trends in heart mortality lead to increasing the gap among males but to decreasing it among females. **Conclusions:** While differences in infant and child mortality have declined, old-age (>45) mortality differentials have emerged and have been gradually widening. These findings calls for a special attention to the various factors responsible for the widening mortality gap including social inequality between Arabs and Jews and higher levels of smoking and obesity among the Arab population.

RESEARCH QUESTIONS

- How has lifespan inequality changed in Israel over the past decades?
  - *Between men and women, between Jews and Arabs*
- How lifespan inequality in Israel differs from major high-income countries?
  - *Israel and other 17 high-income countries*
- What are the reasons for the cross-national differences in lifespan inequality?
  - *Age and cause-specific contributions*

DATA AND METHODS

- Data for Israel were obtained from the Israel Central Bureau of Statistics
- Data for selected high-income countries were collected from Human Mortality Database and World Health Organization Mortality Database
- Total 18 high-income countries were included: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, **Israel**, Italy, Japan, Netherlands, South Korea, Spain, Sweden, Switzerland, UK, USA

- Life disparity was used to measure lifespan inequality
- Standard demographic methods were used to estimate life disparity
- Continuous decomposition method was used to quantify age, cause-specific contributions to changes in life disparity

RESULTS

1. Life disparity in Israel

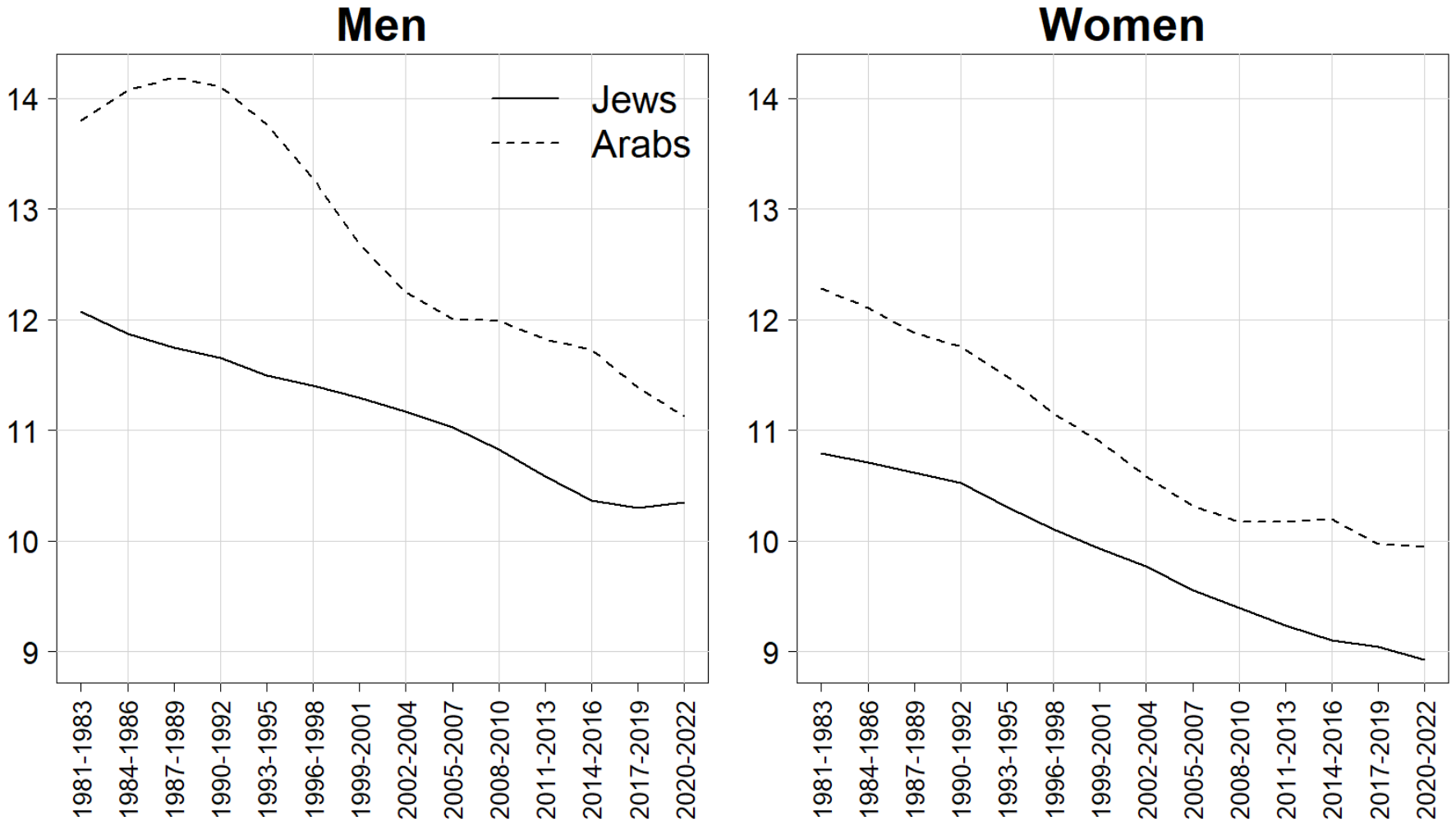

Fig. Trends in life disparity at birth for Israeli Arabs and Jews, 1981-2022

1. Life disparity in Israel

Threshold age

Fig. Decomposition of change in difference in life disparity at birth between Israeli Arabs and Jews, 1981-2019

2. Cross-national life disparity differences

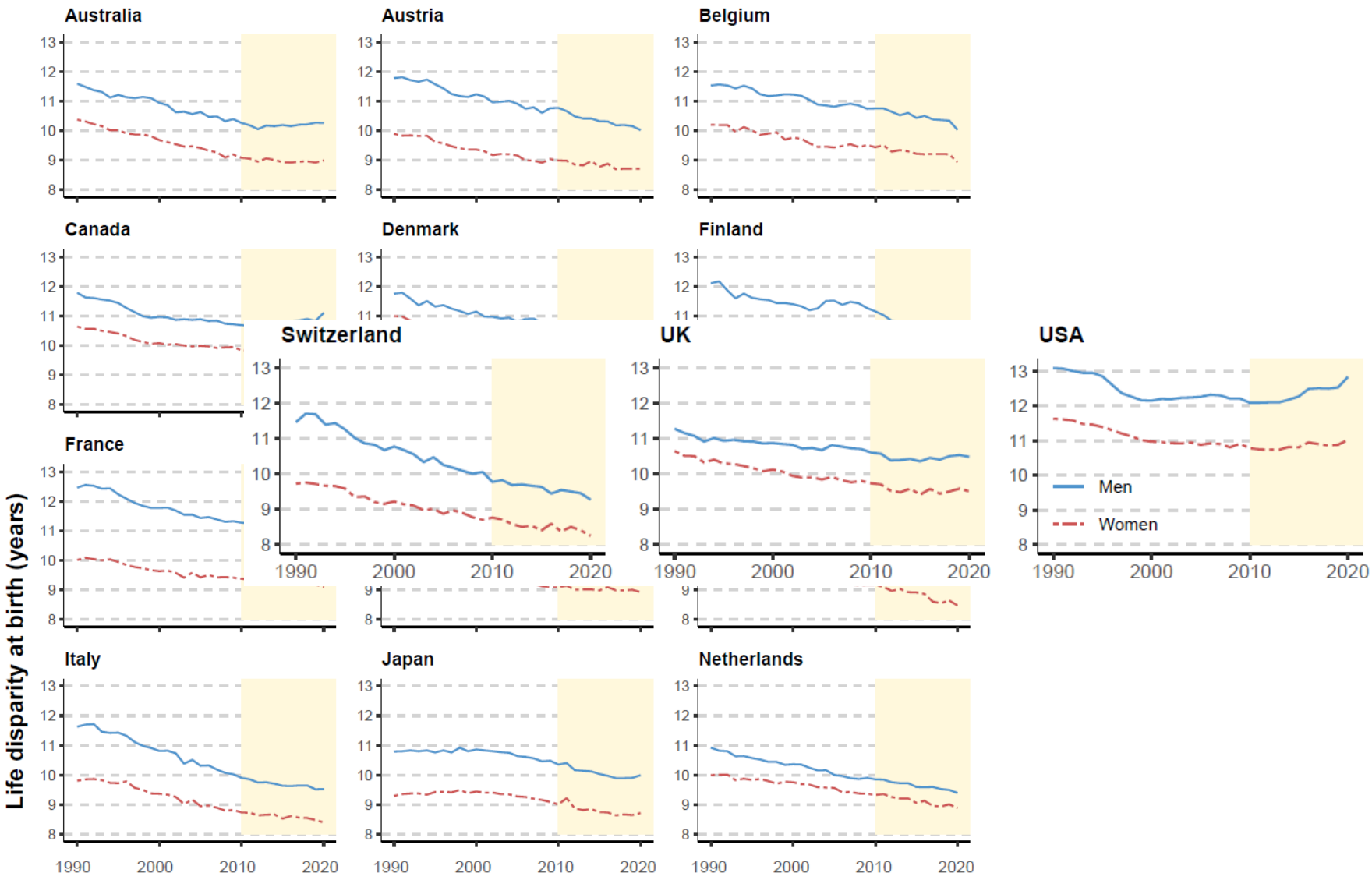

Fig. Longitudinal trends in life disparity in Israel and selected high-income countries for both men and women

3. Cross-national life disparity differences (Age decomposition)

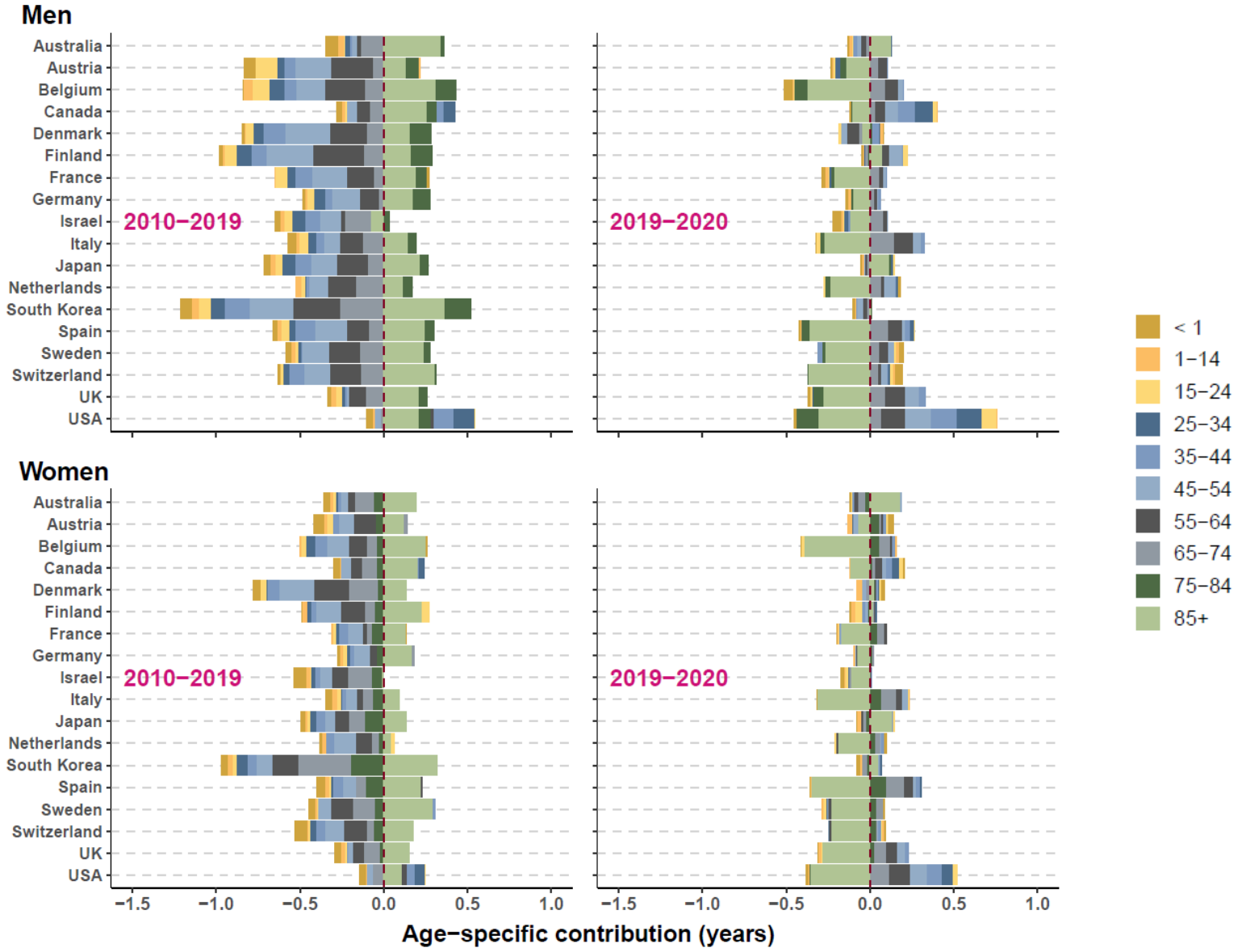

Fig. Age-specific contributions to changes in life disparity in Israel and selected high-income countries

4. Cross-national life disparity differences (Cause decomposition)

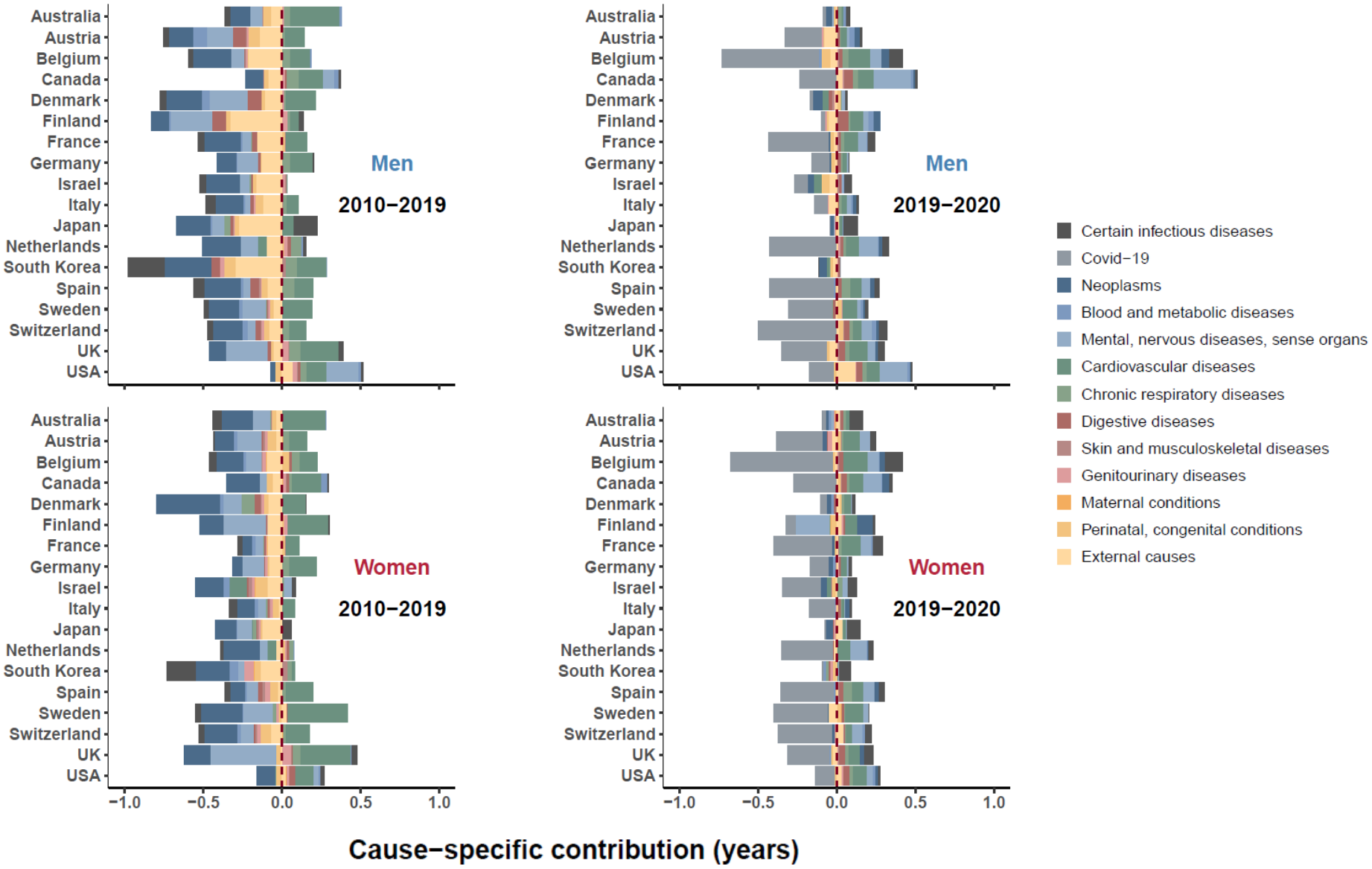

Fig. Cause-specific contributions to changes in life disparity in Israel and selected high-income countries

5.1 Cross-national life disparity differences (Age, cause decomposition)

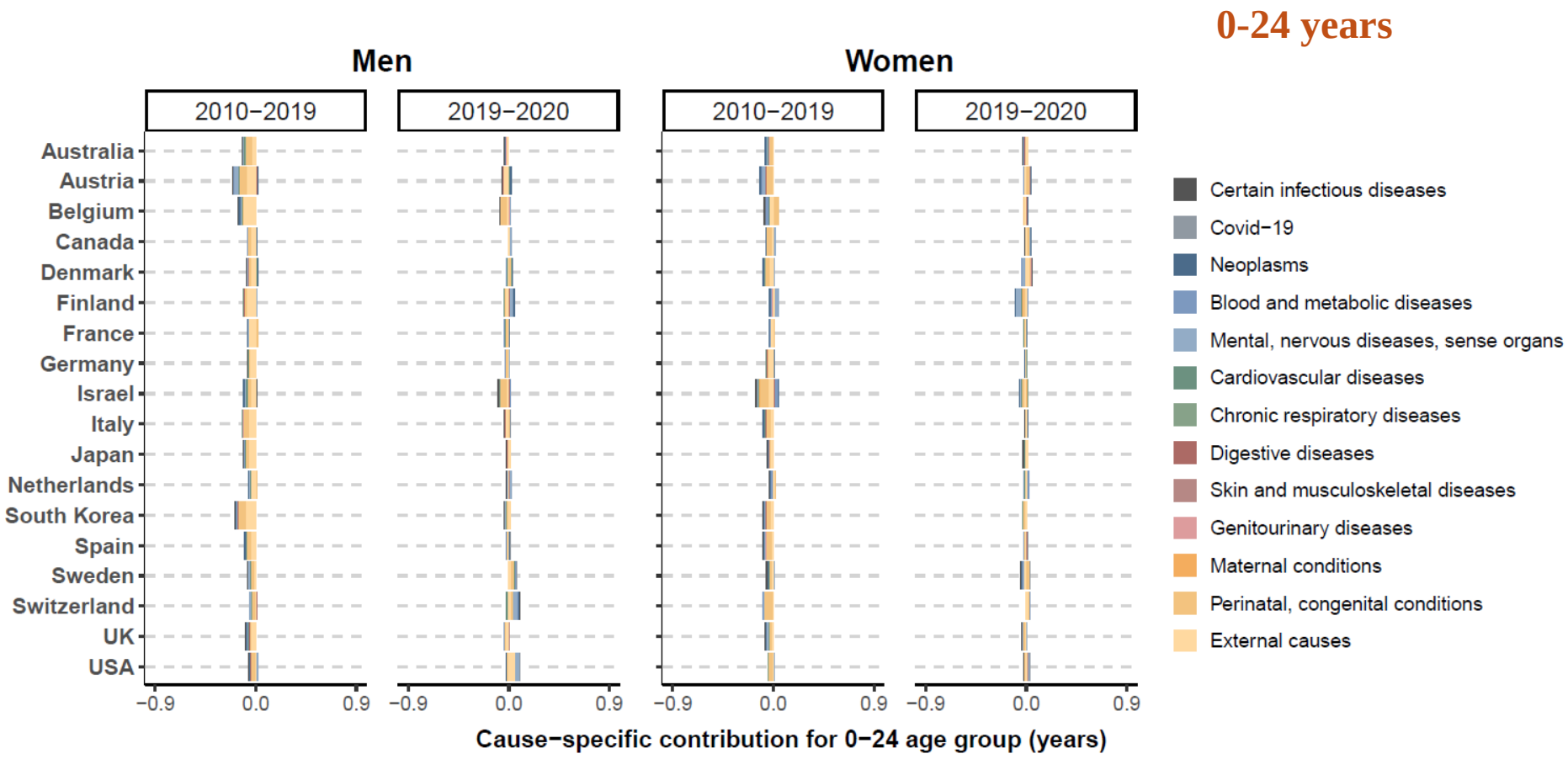

Fig. Age, cause-specific contributions to life disparity changes in Israel and selected high-income countries

5.2 Cross-national life disparity differences (Age, cause decomposition)

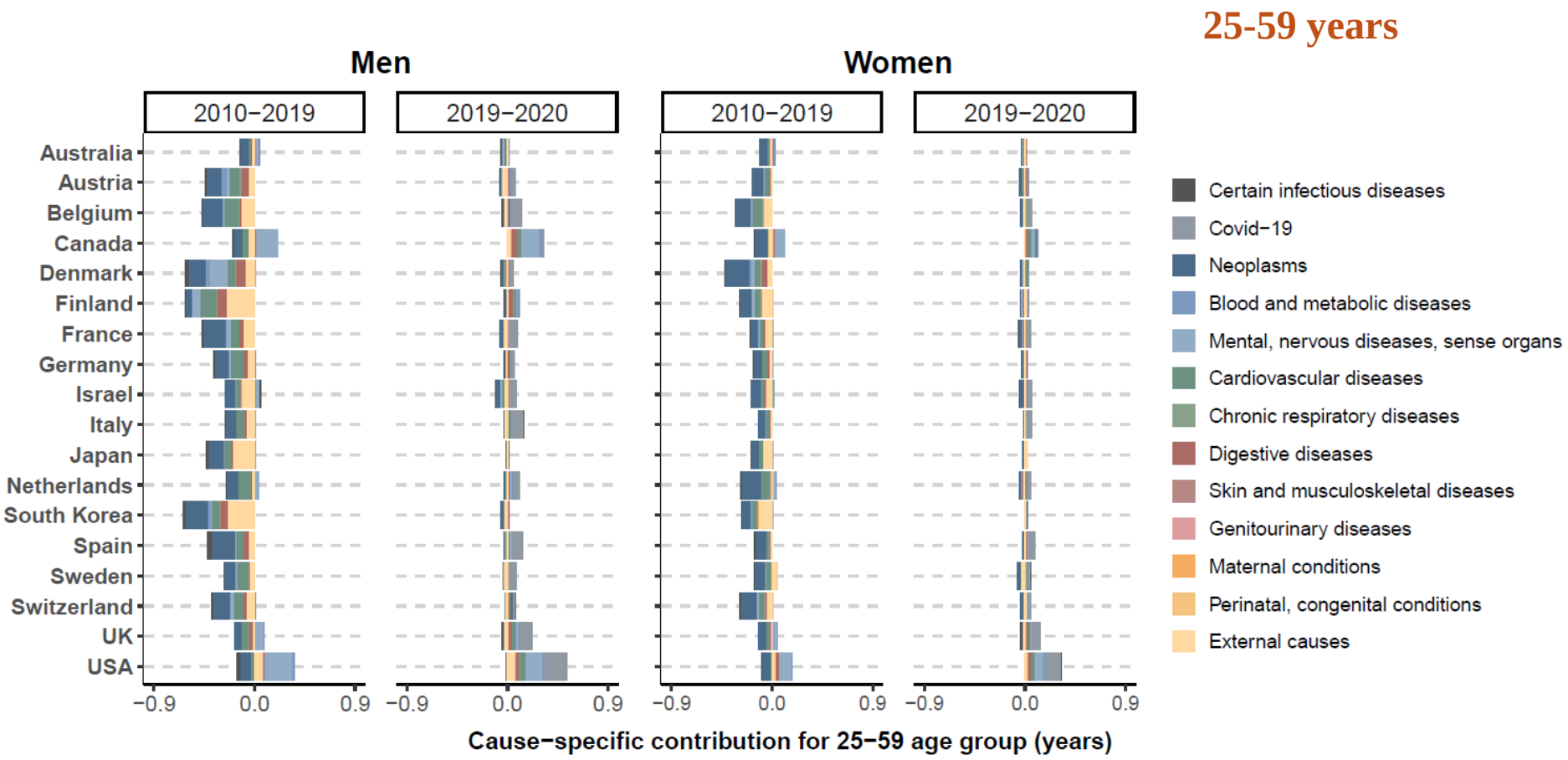

Fig. Age, cause-specific contributions to life disparity changes in Israel and selected high-income countries

5.3 Cross-national life disparity differences (Age, cause decomposition)

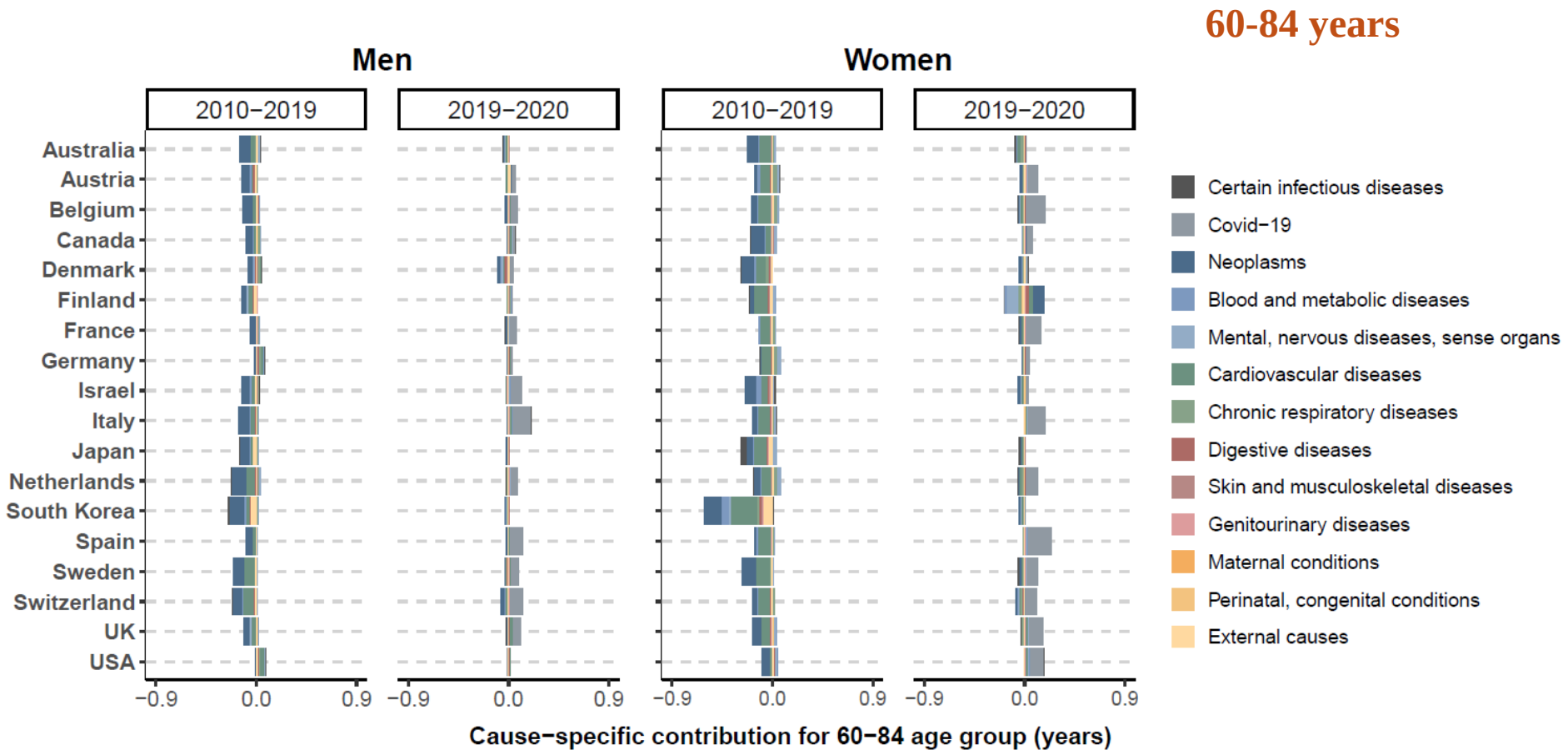

Fig. Age, cause-specific contributions to life disparity changes in Israel and selected high-income countries

5.4 Cross-national life disparity differences (Age, cause decomposition)

85+ years

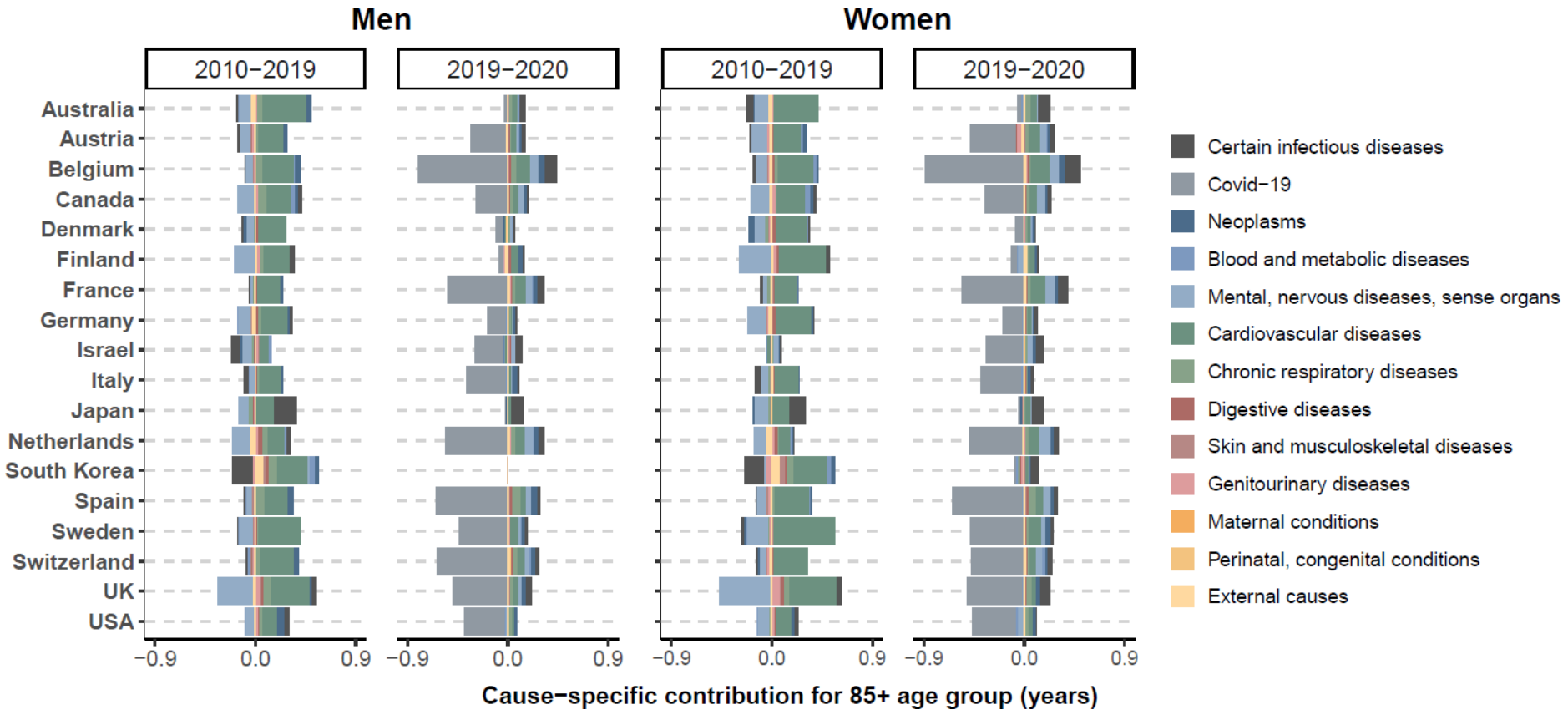

Fig. Age, cause-specific contributions to life disparity changes in Israel and selected high-income countries

CONCLUSION

- Compared with Jews, Arabs had larger life disparity for both men and women. Over the past four decades, life disparity has been generally decreasing for both Jews and Arabs, although it increased among Jewish men and Arab women in recent years. Differences in life disparity between Jews and Arabs were combined effects of mortality changes at all age groups.

- Changes in life disparity varied across observed high-income countries between 2010 and 2020. Similar to some of these countries, in spite of fluctuations, life disparity in Israel has been generally declining, particularly among women, even during 2019-2020 when Covid broke out. Some other countries such as the US and Canada underwent stagnation and increases in recent years.

- Overall, Israel shared similar contribution patterns as most of the observed high-income countries: (1) Between 2010-2019, declines in mortality from neoplasms and external causes of death (particularly among men) at adult ages played an important role in reducing life disparity among most of the observed high-income countries. However, declines in cardiovascular diseases among people aged 85 years above offset these reductions and increased their life disparity; (2) Between 2019-2020, changes in life disparity in most observed high-income countries were largely attributable to the rising Covid mortality at older ages. Impacts from other age groups were relatively small.

Acknowledgements

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- Alyson van Raalte

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Thanks for your listening !

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