

UMEÅ UNIVERSITY MEDICAL DISSERTATIONS
NEW SERIES NO 1013 ISSN 0346-6612 ISBN 91-7264-036-7

From Epidemiology and Public Health Sciences, Department of Public Health and Clinical Medicine,
Umeå University, SE-901 85 Umeå, Sweden

Health, Economics, and Feminism – on judging fairness and reform

Anna Månsdotter



STATENS
FOLKHÄLSOINSTITUT

Swedish National Institute of Public Health
Stockholm, Sweden

Epidemiology and Public Health Sciences
Department of Public Health and Clinical Medicine
Umeå University, Umeå, Sweden



Epidemiology and Public Health Sciences,
Department of Public Health and Clinical Medicine,
Umeå University, Sweden

© Copyright: Anna Månsdotter

Printed in Sweden by Print & Media, Umeå University, 2006: 2001702

Till Alice, Lina, och Maurits

ABSTRACT

Introduction: The point of departure in this thesis is that women live longer than men, while men have more power, influence and resources, and probably better health-related quality of life, than women. In order to judge and act from this situation, the classical idea that both facts and values are needed for conclusion is adopted. The diverse positions of the sexes are mainly assumed to depend on the gender system, i.e. the societal structure organising human activities and relations, ultimately privileges and burdens, by sex. Hence, abolition of gender is held to be associated with decreased differences in health. The handling of facts and values is divided into two principal questions: 1) how to compare women and men within a particular state of the world, and 2) how to choose from their positions between states.

Aims: The overall aim is to propose a public health framework for judging fairness and change from the positions of women and men. The specific aims are to: illustrate how the choice of normative approach affects judgements on fairness and resource allocation (I), explore public health views regarding various ethical principles (II), study the relationship between aspects of gender equality in public/domestic and health (III), estimate costs, savings and health gains, associated with the Swedish parental insurance reform (IV).

Methods: The methods used are: ethical analysis based on the normative theories of welfarism, extra-welfarism, egalitarianism, and feminism; and the notions of justice by separate spheres, equity as choice and attainment/shortfall principles (I), survey among public health workers regarding within-state and between-states ethical views (II), epidemiologic study on death and sickness leave among traditional, equal, and untraditional Swedish couples who had their first child in 1978 (III), cost-effectiveness analysis based on men who took paternity leave 1978-1979 (IV).

Results: The selected normative theories are likely to claim different opinions on fairness regarding women and men, and different proposals on resource allocations (I). Most public health workers support the idea of judging fairness by separate spheres, end-points, and shortfall equity. The rejection of health maximisation, and support for equality in life span and income, are convincing; although females and males differ significantly in judging societal change (II). In comparison to being equal in the public sphere, traditional women have lower risks of death and sickness, while traditional men tend to have higher risks. Being equal in the domestic sphere seems to be associated with lower risks among both sexes (III). Men who took paternity leave run significant lower death risks than other men. Base case cost-effectiveness of the reform is 6,000 EUR, and worst case 40,000 EUR, per gained QALY (IV).

Conclusions: A public health framework for judging fairness and reform by women and men could look as follows: 1) identify facts at present and from past, 2) ask whether the situation is fair by within-state rules, 3) claim or refuse change, 4) identify consequences from reform, 5) consider whether the change was satisfying by between-states rules. The gains from more ethical analyses of public health based on sex/gender should overcome the many tricky issues involved. Since there is no common understanding on how to judge fairness and change from female/male differences in health and wealth, added research and exchange of views are called for. At Swedish state of gender (in)equality, it seems public health relevant to support further similarity in child-care. Provided an effective fraction of 25 percent, the entitlement to paternity leave is probably approved of by common welfarist, egalitarian, and feminist goals.

Key words: *women & men, health & wealth, fairness & reform*

FOREWORD

When I had the opportunity to begin a doctoral education within the field of public health and economics, the choice of focusing on the groups of women and men was easy made. Aspects of the division of privileges and burdens by sex have been a concern of mine for a long time – from early teens, via the professions of economics and psychotherapy, to current date.

There are several reasons behind my particular wish to explore how to judge fairness from the positions of women and men. A key one is that I had perceived the subject as quite confusing; especially when applied to health. The thesis does also explore increasing equality between women and men, by its impact on health and from a broader range of ethical goals. One reason for this is that I had imagined joint interests exist in public health, economics, and feminism; but also, that it would be of importance to elicit likely clashes between the fields.

My doctoral years represent a fantastic journey of increased experience and knowledge; the very base for this has been my family and friends.

The thesis was made possible by a part-time arrangement between the Swedish National Institute of Public Health, at which I work, and Epidemiology and Public Health Sciences, Umeå University. Hence, my initial thanks go to Christer Hogstedt for believing in me, and to the heads of these organisations Gunnar Ågren and Stig Wall.

I am also grateful for the intellectual, practical, and emotional support from a number of colleagues and collaborating partners. It is not possible to thank each of them, but Mona Backhans, Eva Wiklund, Mia Danielsson, and Liselotte Schäfer-Elinder have to be mentioned by name. A special gratitude is directed to Michael Lundberg for his empathic guiding in statistical views and methods. Besides, I value a lot the kind treatment from all the staff at Epidemiology when I have been in Umeå. This includes particular thanks to my associates Emil Löfroth and Lars Hagberg. Alan Williams is not with us anymore, but my appreciation for his encouraging support is also great.

In addition, I thank my co-supervisors Anna Winkvist and Ann Öhman for their competent and persistent help during the entire process.

At last, I would like to express my deepest gratitude to my main supervisor Lars Lindholm. My appreciation for having had access to his unique wisdom, patience, and affection is immense. I thank him, with all my heart, for making me feel trustworthy and capable.

March 2006

Anna Månsdotter

LIST OF PAPERS

The thesis is based on the following papers:

- I. Månsdotter A, Lindholm L, Öhman A. Women, men and public health – how the choice of normative theory affects resource allocation. *Health Policy* 2004, 69:351-364.
- II. Månsdotter A, Lindholm L, Lundberg M. Health, wealth and fairness based on gender: the support for ethical principles. *Social Science and Medicine*, accepted for publication and electronically published 2005.
- III. Månsdotter A, Lindholm L, Lundberg M, Winkvist A, Öhman A. Parental share in public and domestic spheres – a population study on gender equality, death and sickness. *Journal of Epidemiology and Community Health*, accepted for publication 2006.
- IV. Månsdotter A, Lindholm L, Winkvist A. Paternity leave in Sweden – costs, savings and health gains. Submitted 2005.

Papers I, II and III are reprinted with permission from the publishers.

CONTENTS

ABSTRACT	
FOREWORD	
LIST OF PAPERS	

1. INTRODUCTION	1
1.1. Outlining the thesis	1
1.2. World at present – health and socioeconomic position of women and men	3
1.3. Information from earlier states and health impact from gender abolition	6
1.4. Ethical principles aimed at within-state judgements	10
1.5. The parental insurance reform of 1974 – official motive and health motive	12
1.6. Ethical principles aimed at between-state judgements	14
1.7. Preferences for normative rules – on guidance, but first exploration	18
2. AIMS	20
3. METHODS	21
3.1. Ethical analysis of public health based on sex and gender (paper I)	21
3.2. Survey on ethical views among public health workers (paper II)	23
3.3. Epidemiologic analysis of parental division and health (paper III)	26
3.4. Cost-effectiveness analysis of the paternity leave reform (paper IV)	28
4. RESULTS	31
4.1. Interpreting normative theories from the position of the sexes (paper I)	31
4.2. One set of ethical views and the relationship between principles (paper II)	35
4.3. Gender (in)equality and female/male risks for death and sickness (paper III)	38
4.4. Paternity leave and mortality; and the cost per QALY for the reform (paper IV)	42
5. DISCUSSION	46
5.1. Public health ethics by sex/gender – lack and need (paper I)	46
5.2. Public health preferences – no common understanding (paper II)	49
5.3. Towards gender equality – probable health trends (paper III)	55
5.4. Paternity leave – findings of (transferable) consequence? (paper IV)	60
5.5. Feminism and public health – harmony and conflict	64
5.6. How to judge fairness and change from the paternity leave reform	65
6. CONCLUSIONS	68
6.1. A framework for judging fairness and reform by women and men	68
6.2. Conclusions – by paper and main points	69
6.3. Final remarks	71
REFERENCES	72

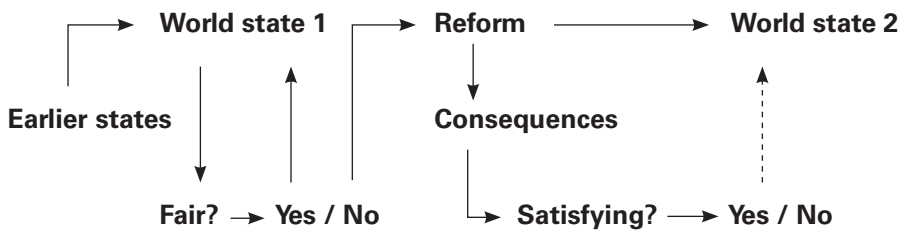
1. INTRODUCTION

1.1. Outlining the thesis

Women live on average longer than men, while men generally have more power, influence and resources, and probably better health-related quality of life, than women. That is the common state of the world at present. Many people are likely to judge this situation to comprise unfairness, although some are likely to say that the situation of women and men is on the whole fair. People can also assert that judgements on health differences are unlike judgements on, for instance, differences in societal influence. Moreover, judging fairness about one state of the world may require information from earlier states. If people conclude that the disparate position of women and men is fair, follows no incentive for societal change. If, on the other hand, people judge the world to be unfair (or unacceptable which is a more convincing concept), the logical step is a demand for change, and ultimately, implementation of a reform. After the consequences have been identified, people may decide whether the reform was satisfying or not. Whatever the conclusion is (yes/no), the world has changed from one state (1) to another state (2), and the process may restart (Is the world in state 2 fair/acceptable or not? etc.).

This way of reasoning (illustrated in Figure 1) represents a suggested framework for societal process from the positions of women and men in the thesis. My overall intention is to further explore it by theoretical and empirical search.

Figure 1 Suggested framework for societal process from the positions of women and men



Women's and men's lives may be described in terms of life expectancy, sickness, income, representation in parliaments and boards, unpaid duties, violent acts, anxiety and fear, etc. Presumably, considerable consensus can be reached about the accuracy of these facts, as they are in principle possible to verify or falsify by means of empirical studies. However, in order to, for instance, justify and evaluate a reform, facts such as these must be confronted with values. Our ideas of right and wrong are often implicit, but from the perspective of societal decision-making, one may require the applied ethical principles, or normative rules, to be rather explicit.

Hence, the overall model of thinking in the thesis, to which David Hume (1711-1776) is the classical source, is:

Facts
Values
Conclusion

A state is defined as a situation in which individuals have a particular set of resources, rights, duties, etc. If components in the set are altered, a new state for the same sample of individuals appears. From this it follows that the way of handling facts and values for judgements regarding fairness and change is divided into two principal questions:

- a) How to compare the relative positions of women and men within-state (e.g. if present situation is acceptable)?
- b) How to choose from the positions of women and men between-states (e.g. if a reform improves the situation)?

The analytical categories throughout the thesis are the two groups of women and men. An essential limitation is, hence, that differences (inequalities) and unfairness (inequities) within the group of men, and within the group of women, are not considered, e.g. dominance hierarchies between men, various forms of masculinities and femininities, and same sex couples. Worth noting is that the emphasised distinction between descriptive and explanatory analyses, and normative views, is flawed from the very beginning. My values have affected the choice of analytical categories, and the considered facts and ethical principles. Thus, I obviously judge differences in women's and men's lives as important; something that, in some way or another, links to the fact that I am a woman with two daughters and one son. The ambition is a world-wide approach in principle, although the empirical parts are restricted to Sweden. At last, I would like a reader to be indulgent with the sometimes simplified and speculative attitude towards facts; hopefully, this is restricted to the purpose of illustrating various ethical reasoning.

1.2. World at present – health and socioeconomic position of women and men

In accordance with the suggested framework for societal process, I begin with a summary of essential facts for judging fairness from the present situation of women and men.

The gender system

The basic factual notion is that, in all societies of today, a gender system (or in short gender) exists, from which no-one escapes. This is the societal structure organising human activities and relations based on sex, and ultimately, the societal division of privileges and burdens between women and men. Opinions about the gender system differ among researchers, but a considerable consensus has been reached in two respects (Connel, 1987; Hirdman, 1988; Okin, 1989). First, gender implies structures that help to keep apart women's and men's work, characteristics and behaviours, i.e. dichotomy. Second, gender implies that the relationship between the sexes is unequally divided into a male superiority and a female subordination, i.e. asymmetry. The acknowledgement of the gender system as a fact does not mean that everything in society must count against women and in favour of men (Benatar, 2003); for instance, the duty of cooking may be judged more favourable than the duty of going to war.

In order to understand the gender system and the ongoing reproduction of it, Harding (1986) suggests a division into three major components. Gender as a symbolic system implies that different and opposite characteristics are assigned to men and women (e.g. public/private, active/passive, independent/dependent, etc.). Gender as a structural system means that the division of labour is organized to fit the symbolic system (e.g. mainly men work in the military and building trade, while women manage most paid and unpaid care for children and elderly). Finally, gender as an individual system entails that personal identity is formed by collective opinions about what is appropriate for men and women respectively. In a similar approach, Connell (1987) claims three concurrent elements in the gender order: the division of labour by sex, the power inequalities between women and men, together with the social structure of sexuality (i.e. gender as an erotic value).

Henceforth, the concept of 'gender' is associated with social, economic and cultural grounds for disparities between women and men (thus in principle changeable factors), while the concept of 'sex' is associated with biological grounds (thus in principle unchangeable factors). This is done despite the evident interaction between the concepts; gendered factors manifest in biology (e.g. the symbolic dichotomy of active/passive contribute to encouraging training aimed at physical strength among men while limiting it among women) and biological factors manifest in gender (e.g. the biological fact of afterbirth have hindered women from visiting church, and hence, to confirm male influence over religion). The concept of 'sex' is also used in writings like the subordinated sex, sex-diverse incomes, and results by sex.

Mortality, morbidity, and overall health

Almost all over the world nowadays, men die on average earlier than women. From a global point of view, the female/male difference in life expectancy at birth is about six years. Data from 2003 (World Health Report, 2005) show that the female advantage in life span is largest in eastern Europe, e.g. Russia at 14 years and Lithuania at 12 years. Corresponding figures in countries with a long average life span, like Japan and Sweden, are 7 and 5 years respectively. In only a few countries can a boy at birth expect to live longer than a girl; one year longer in Botswana, Niger, Qatar, and Zimbabwe, while similar life expectancy is reported from Bangladesh and Zambia. The Swedish picture from 1751 and beyond demonstrates a consistent pattern of a female advantage in life expectancy at birth (Statistics Sweden); the largest absolute sex/gender difference was in 1984 (6.05 years, and 7.9 percent compared to average), while the largest relative sex/gender difference was in 1841-1850 (10.1 percent compared to average, and 4.44 years).

The common understanding is that women have higher rates of morbidity than men. Several studies and reviews have found that women report more physical and psychological symptoms, have more chronic illness and disability, utilise more medication, visit health professionals more frequently, etc. (e.g. MacIntyre & Hunt, 1997; Sen, George & Östlin, 2002). Moreover, a recent study among adolescents shows that girls have increased risks for subjective health complaints in European and North American countries (Torsheim, Ravens-Sieberer, Hetland, Vålímáa, Danielsson & Overpeck, 2006). This female disadvantage may also be observed in measures like healthy-years and health-related quality of life. From a global perspective it is reported that females in all countries are expected to have larger loss of healthy-years at birth compared to males (World Health Report, 2004), e.g. a difference at 1.7 years in Sweden. Moreover, a study based on Swedish data (Burström, Johannesson & Diderichsen, 2001) demonstrates that women have a lower health-related quality of life weighting than men (0.81 versus 0.86 out of 1.0). The picture of a female disadvantage in morbidity is however not unambiguous, as it has been pointed out that men have an excess of life-threatening conditions, whilst women tend to suffer from less serious ones (Verbrugge, 1989).

In order to make a comparison between women's and men's overall health, one might use indices combining mortality and morbidity. Examples of such measures are disability-adjusted life years (DALYs), healthy life expectancy (HALE) and quality-adjusted life years (QALYs). The Global Burden of Disease Study (Murray & Lopez, 1996) reports that women are better off than men in all regions except India. The picture of a female advantage in overall health is also given in the World Health Report (2002). It reports a total burden of disease of 699 billion DALYs for females and 768 billion DALYs for males, and that girls can expect more HALE at birth than boys in all countries except three (Bahrain, Botswana and India). Finally, a Swedish study based on remaining QALYs shows that women are better off than men at all ages (Gerdtham & Johannesson, 2000). Despite the picture of an almost universal female advantage in overall lifetime health, it should be noted that these kinds of indices have been criticized for being gender biased, e.g. that the consideration of an inherent longer potential for life span among females is too small in the DALY measure, and that a larger proportion of males have taken part in valuing the morbidity dimension (Hanson, 1999; Sundby, 1999).

Socio-economic privileges

Data from all over the world show that women have fewer socio-economic privileges than men. This is for instance revealed by a composite index labelled the Gender Empowerment Measure (Human Development Report, 2005), which measures differences between females and males in three basic dimensions: 1) economic participation and decision-making, 2) political participation and decision-making, and 3) power over economic resources. The value of 1.0 refers to a situation of absolute gender equality in these respects. Among the 80 countries from which values were reported, ten have a value above 0.8 and more than one third have values below 0.5. If we accept income to be a fairly good indicator of factors like power, influence, resources, etc., and consider that Sweden has the world ranking of 3 by the Gender Empowerment Measure, the Swedish female to male ratio in income at 0.72 in 2003 (Statistics Sweden) further manifests a global female disadvantage in socio-economic privileges.

Overall situation of health and socio-economic privileges

It is a difficult, or most likely an impossible, task to compare women's and men's overall situation of mortality, morbidity and socio-economic privileges. The reasons are that such a comparison inevitably requires an act of selecting vital components, and that the process of aggregating selected components is not clear-cut. However, an indicator that provides some possibility of overall comparison is offered by the Gender-related Development Index, which is a supplement to the Human Development Index (Human Development Report, 2005). The purpose of this measure is to elucidate differences in the achievements of women and men in three dimensions: 1) a long and healthy life (note that females are assumed to have a five year longer inherent potential than males), 2) knowledge, and 3) standard of living. According to data from 2003, women have a poorer overall situation than men in all of the 140 countries from which information is gathered. Moreover, 33 countries report a gender development value below 0.5 (out of possible 1.0). If one supplements this information with data on morbidity and empowerment, the picture of a female shortcoming in a combination of health and socio-economic privileges will become even more convincing.

There are still missing facts, and competing opinions, regarding the current situation of women and men. However, a plausible summary is that males are disadvantaged in overall health, while women are disadvantaged in a combined health and socio-economic situation.

1.3. Information from earlier states and health impact from gender abolition

Opinions of fairness regarding the present position of the sexes may depend on earlier states of the world. Possibly relevant issues when people judge the disparate health of women and men are differences in their previous scope for making free choice and in inherent potentials for living a healthy life. In this section, causes (per definition previous) to health differences are considered. These may be principally divided in biological factors and social factors, where the latter concern causes that in different ways connect to the gender system. First and foremost, however, biological and social factors interact in a delicate way; this must be carefully considered in order to understand health differences between women and men (Hammarström, Härenstam & Östlin, 2001; Krieger, 2003; Rieker & Bird, 2005). The section ends up in a principal proposal aimed at understanding the sex/gender gap in health; and moreover, the motives and beliefs regarding a first step study.

Biological causes – a female advantage in life span?

The disparate biological constitutions of women and men may lead to different risks for a variety of illnesses and diseases. As an illustration, it has been shown that aspects of the sex-diverse biology contribute to different alcohol consumption behaviours (Holmila & Raitasalo, 2005). The fact that women in general live longer than men, despite being the subordinated sex, is often said to prove that women have an inherent advantage in life span potential, e.g. 2.5 years as adopted by Murray and Lopez (1996) and 5.0 years as adopted by Anand and Sen (1995). Hemström (2001) suggests four major categories of biological factors for the purpose of explaining differences between females and males in cardiovascular/heart disease, breast cancer, infectious disease, etc.: sex hormones, cholesterol levels and body fat, iron levels, and genetic factors. These factors are, however, mostly said to contribute to the disparate burden by sex in combination with societal factors.

Waldron (1983) has reviewed evidence concerning genetic causes to the female/male gap in mortality; for example, the proposal that males have higher fetal mortality was rejected, the proposal that X-linked genes contribute to greater female resistance to infections was supported, and the idea that male sex hormones may affect differences between women and men in behaviours like accidents and other violent causes was accepted. She concludes that females may have an inherent advantage in life span; but, that it is impossible to make even a preliminary quantitative estimate of the contribution of biological factors to the mortality gap. It is reasonable to believe that this statement still holds.

Social causes – does gender disadvantage women or men?

Traditional beings of women and men

The gender system may be seen as principally counteracting male health. According to Courtenay (2000a), health notions form femininities and masculinities in general; for instance, health-damaging beliefs and behaviours among men are means for demonstrating a powerful masculinity.

He states: "Naming and confronting [this] may well improve their physical well-being, but it will necessarily undermine men's privileged position and threaten their power and authority in relation to women" (2000b, p. 1397). Other supporters of the idea that men are most harmed by the gender system are Meinecke (1981) who states that men are socialized to die younger, and Sabo and Gordon (1995) who refer to the idea that "more men ought to refuse to be men" if they want to live healthier lives. From the Swedish setting is suggested that changes in the traditional male role (regarding alcohol in particular) is the best way to further reduce the gap between female and male life expectancy (Hemström, 1998). Moreover, based on Swedish mortality trends, Danielsson (2002) proposes that one reason women in general are more averse to health risks and live longer lives than men, is their principal responsibility of taking-care of children. For instance, heavy drinking may interfere with practical and emotional child care responsibilities, unhealthy food habits risk being adopted by the children, and risk-keen behaviours in general threaten the children's security (e.g. Waldron, 2000).

Gender can also be seen as mainly health-damaging to women. This is a commonly accepted view in the public health tradition (Annandale & Hunt, 2000), and depends reasonably on the overwhelming evidence that disadvantages in power, influence and resources generally are connected with poor health. From the perspective of women and men, and indications that women are best off in combined measures of mortality and morbidity, it follows that this view must acknowledge biological mechanisms favouring women. In this context, I would like to put forward the finding that women's subordinated position may explain both their excess ill-health by poorer nutrition, more infectious diseases, repeated pregnancies, etc. in deprived settings, and lower ill-health by protection from non-infectious causes in wealthy settings (Johansson, 1991a). One must also consider that the forming of femininities/masculinities by health-related beliefs and behaviours may work to the disadvantage of women, e.g. in health measures exposing feelings of inferiority and tiredness (Hammarström, 2002).

For the sake of completeness, the gender system may be seen as implying health risks (and perhaps safeties) to both sexes. Data from most parts of the world suggest that there is a positive relationship between "gender equity" (for now, a vague meaning of this concept is accepted) and population health (e.g. Human Development Report, 2005; Sen, 2001). From a study based on US data (Kawachi, Kennedy, Gupta & Prothrow-Stith, 1999) it is reported that both sexes experience higher mortality and morbidity in states where women have lower levels of political participation and economic autonomy. Further, a cross-country study demonstrates that patriarchy, measured by female homicide rates, is bad for men's life expectancy, and (though more implicitly stated) also for women's (Stanistreet, Bamba & Scott-Samuel, 2005).

Traditional doings of women and men

Traditionally, men's primary role in life has been productive work and the responsibility to support a family, while women's primary role has been reproductive work at home and within the family. In a country like Sweden however, most women are active in the public sphere of work, and several men have entered the private sphere of responsibilities and duties. Hence, it is rational to consider whether multiple roles are good or bad for health (Annandale & Hunt, 2000, Härenstam, Aronsson and Hammarström 2001). According to the stress hypothesis (Goode,

1960), individuals with many different activities and responsibilities experience more pressure, conflict and ill-health; the reason is that the primary role in life is so hard that additional duties risk health. The foundation in the expansion hypothesis is the contrary; namely that people with many roles have health advantages compared to others as they may compensate stress in one area with positive circumstances in other areas (e.g. Thoits, 1983).

The major part of research on multiple roles and health is related to females, quite simply as they are hitherto most confronted with this situation. Verbrugge and Madans (1985) accept that there are added pressures for women with multiple roles, but that the net impact on various measures of morbidity is beneficial for women. Weatherhall, Joshi and Macran (1994) conclude that the stresses and strains of combining jobs and child rearing are not drastic enough to result in premature death. These results are confirmed in a review by Barnett (2004), i.e. several roles may cause health problems, but they are less severe than problems associated with too few roles. From studies among males it is reported that, in addition to job role quality, marital and parental role quality (note, not parental status) are significant predictors of psychological distress (Barnett, Marshall & Pleck, 1992). Moreover, based on the idea that work and family roles have different meanings for the sexes, Simon (1995) finds that the mental health advantage of multiple roles is larger for men than for women. Krantz, Berntsson and Lundberg (2005) conclude that working life and private circumstances, and the interplay between them, need to be taken into account to limit stress-related ill-health among both women and men.

Studies on multiple roles are inevitably based on current gender structures, i.e. different hypotheses may be required for women and men. Härenstam, Aronsson and Hammarström (2001, p. 280) state: "as most men are active in one sphere, they are worse off than women, according to the expansion hypothesis. If men were to expand their work and responsibilities to include the private sphere, this might lead to a change in social roles and behaviours, improved well-being and perhaps also longer lives. Moreover, it would also benefit women's health, since it would reduce the overall burden on them" (i.e. the stress hypothesis).

The gendered contribution to the female/male gap in life span

Several efforts have been completed aimed at explaining the contributions from gendered factors regarding the gap between women and men in mortality. Waldron (1976) shows that one third of men's excess mortality is due to behaviours which are more encouraged or accepted in males than in females, e.g. drinking alcohol, working at hazardous jobs, and seeming to be fearless. Wingard (1982) has examined the mortality risk by sex while simultaneously controlling for 16 factors (socioeconomic status, occupation, sleeping patterns, marital status, social contacts, life satisfaction, etc.). The result shows that these factors do not account for the different risks of females and males; in fact, they increase the gap, which makes her conclude that the interaction of biological and societal factors must be considered. Also Verbrugge (1989) suggests, after considering the gendered factors of acquired risks, psychosocial aspects and health-reporting behaviours, that men are still disadvantaged and that the reason may lie in biology.

A first step study – what would be left if gender was abolished?

A principal proposal

My conclusion from research about causes for health differences between women and men is that further information is needed. I suggest that the principal idea behind understanding the possibly inherent contribution to these differences must be to examine what would be left if gender was abolished (see Feminist justice, section 1.6). The gender system is a huge complex of symbolic, structural and individual dimensions. Hence, establishing the remaining health differences between women and men would require data from the moment of birth to the moment of death – all attempts are severely constrained. Besides, the idea of a society without gender is perhaps as hypothetical as Rawls' idea of the 'veil of ignorance' (see Egalitarianism, section 1.6). Nevertheless, when reviewing research about "gender and health", "gender equity/equality and health", "multiple roles and health", etc., I lack convincing attempts aimed at examining health trends from gender equality defined as similarity between women and men in both public and domestic spheres of life.

Motives and beliefs

The principal motive for a first step study on what gender abolition would mean for female and male health in the thesis (paper III) is that it may contribute to the factual basis from which people judge fairness (c.f. gendered causes may tell about different possibilities to freely choose, and may be considered more unfair than inherent/biological causes). Another motive is that such exploration could indicate the good, or bad, health consequences of the moral duty to strive for a society in which burdens and benefits are distributed independently of sex, i.e. about the accord, or discord, between public health goals and gender equality goals.

The different biological constitutions of women and men are likely to contribute to health differences between the sexes. Yet, my overall belief is that a society of entire cultural, social, and economic similarity between women and men would result in little or no differences in measures like life expectancy, QALYs, psychological symptoms, sickness leave, health-related behaviours, etc. Women will at that state of the world have entered health-related life styles and spheres traditionally linked to men, and vice versa. This idea of increased health similarity by increased gender similarity is henceforth referred to as the hypothesis of convergence.

However, societal steps towards gender equality/similarity/abolition are not symmetric; women seem to enter traditionally male spheres like paid work, before men enter traditionally female spheres like child-care duties (a logic consequence, I believe, of the human wish to be the first, and not the second sex, Beauvoir, 1949). Since the sexes have different experiences of multiple roles, they have also different starting positions regarding the hypotheses of stress and expansion. This implies that there are most likely trends opposing convergence during the process towards equality between the sexes. My conclusion is that several roles and activities benefit health among both sexes until the point of extreme stress. Hence, in Sweden, during the last decades, the typical woman may have been harmfully rich of roles and duties (would gain from reduced stress level), while the typical man may have been harmfully poor regarding the same (would gain from expansion).

1.4. Ethical principles aimed at within-state judgements

After having identified facts from a particular state of the world and from past states, the question arises of within-state fairness. In order to make comparisons and judgements from the relative position of women and men, the collected factual information has to be supplemented with normative rules aimed at answering:

1. Is it possible that higher mortality is compensated by lower morbidity so that two individuals with different levels of mortality and morbidity can be judged to have equal health?
2. Is it possible that poorer health is compensated by, for instance, higher income so that two individuals with different levels of health and income can be judged to have equal welfare?
3. Should judgements on fairness be based or influenced by past processes rather than on end-results?
4. Should judgements on fairness consider that health differences between females and males might be caused by biological variations?

Monistic view or separate spheres?

Support for the idea of compensation between various aspects of life (regarding e.g. women and men) may be connected to a monistic view on life. That is, everything is of one essential essence, and health, income, influence etc. can equally contribute to a good life. On a more tangible level, the view on compensation may be linked to the view on indices; health indices such as quality-adjusted life expectancy at birth, and more inclusive indices such as the Gender-related Development Index.

According to Walzer (1983), justice should be considered in different spheres of human life. Social justice does not require an equal distribution within each sphere, but rather that different spheres must be kept autonomous. Thus, inequality in one sphere (e.g. money) must not be allowed to translate itself into inequalities within other spheres (e.g. politics, recognition, security, and art). The well-known connection in general between advantages in health, power, money, security, recognition, etc. between and within countries is hence unjust, while it seems doubtful to assert the male disadvantage in lifespan and female disadvantage in income as an expression of social injustice. Nevertheless, the most relevant inference of Walzer's theory when applied to health, wealth and gender is probably rejection of indices, since they prevent an examination of the translation of unfair distributions between spheres. Rawls' theory of justice will be further explored (see Egalitarianism, section 1.6). Yet, in this context it could be noted that justice according to Rawls requires that the societal distribution of essential goods must benefit the worst-off group. This group should be identified in an overall index, which indicates that Rawls, in contrast to Walzer, would have supported in principal the idea of compensation between life spheres like mortality, morbidity, income, etc.

Consideration of past processes?

According to Le Grand (1984, 1987), a crucial factor in determining fairness of health inequalities is how they link to preceding differences in opportunities for free choice: "If an individual's ill-health results from factors beyond his or her control, then the situation is inequitable" (1987, p. 269). The gender system limits both sexes from carrying out free choices, but as women are subordinated in society, they are presumably most restricted. Whether this applies also to health-related choices is more difficult to determine; for instance, men may be considered to both be forced and willing to take on health-damaging behaviours like alcohol consumption, and to both be prevented from and refusing to take on health-protecting duties like child care. I am inclined to believe that women are the most restricted sex even regarding health, and hence, that Le Grand would deem it more appropriate to judge a female shortage in health unfair, than to judge a similar shortage among males in the same way.

It has been suggested that there is a distinction between a masculine ethic of justice and a feminine ethic of care; the former being concerned with rules and principles, while the latter being concerned with responsibilities and relations (Gilligan, 1982; Noddings, 1984). The ethics of care were developed in order to understand families and friendships, but many advocates propose that the private guiding morality should be extended to guide action in the public sphere as well (Kymlicka, 1990). A central idea is that subjective suffering forms a valid base for moral claim, i.e. society's obligation to help should be independent of self-cause and blame. The notion of ethics of care as considering end-result rather than past procedures is thus in considerable opposition to Le Grand's idea of equity as choice.

Consideration of biological potentials?

Equity can be defined either in terms of attainments, or in terms of shortfalls (Sen, 1992). For attainment equity, one compares the actual levels of achievements, whilst for shortfall equity; one compares achievements from their respective maximal potential. The distinction between these principles may be of particular interest from a health perspective of females and males. Measured in attainment, men have an equity drawback in the sphere of mortality almost all over the world (they live shorter lives). Though applying the principle of shortfall, and assuming that the biologically caused female advantage in life expectancy is, for the sake of illustration, five years, the conclusion differs. Women will still have an equity advantage when they live more than five years longer than men (e.g. Japan and Russia). But when the difference is smaller than 5 years (e.g. Ethiopia and Bolivia), women will be the disadvantaged sex in terms of having an equity drawback in the sphere of mortality.

1.5. The parental insurance reform of 1974 – official motive and health motive

After the step of judging whether the world is fair (acceptable) or not follows the step of demanding or rejecting societal change. A typical reform that was implemented from the viewpoint of women and men is presented in this section.

The Swedish situation and official motive

Sweden in the 1970s was a social democratic welfare state regime (Esping-Andersen, 1990) in which strategies aimed at altering unequal gender relations had been part of the liberal and socialist agenda since the beginning of the twentieth century (Sörensen & Bergqvist, 2002). The division by sex of employment, economic resources, political influence, unpaid duties in family and household, etc. was great, and three basic reforms were implemented: the 1971 tax reform which strengthened the dual-earner norm by separate taxation for married people; an extended and publicly funded child care system; and the introduction of a parental insurance system in 1974 to replace the maternity insurance system from 1954. The latter reform will be further explored and utilised for illustrative purposes.

The official motive behind the reform which permitted fathers to take paid parental leave was to achieve greater gender equality, i.e. to enhance the potential for males in the sphere of caring work and for females in the sphere of paid work (Ferrarini, 2003). A more equal division of parental leave in the beginning of parenthood was seen as a prerequisite for a more equal division of the parents' future duties in private and in public (SOU, 2005:73). That is, a common Swedish opinion (among the people and/or the parliament) in the beginning of 1970s must have been that existing differences between women and men in caring work and paid work were unacceptable. Hence, by the vocabulary of normative rules aimed at judging fairness within-state: a rejection of the monistic view on life, concurrent with support for judging fairness in separate spheres.

A partial study on health consequences

The motive for including an evaluation of the reform which granted paternity leave in the thesis (paper IV) is that one may expect consequences other than being beneficial for gender equality in private and public, e.g. health improvements among men. This expectation is founded on the notion that men use health-damaging beliefs and behaviours as a means of demonstrating masculinity (Courtenay, 2000a; 2000b), and the finding that men's excess mortality is partly due to behaviours which are more encouraged or accepted in males than in females like drinking alcohol and seeming to be fearless (Waldron, 1976; Hemström, 1998). Moreover, the proposal that having the primary and practical responsibility for children may be health-protecting, and that this could apply to men as well, is essential (Danielsson, 2002). Specifically, if fathers adopt a more tangible caring role during infancy (i.e. depart from traditional masculinity by taking parental leave), they may develop health-promoting attitudes and behaviours more congruent with the traditionally female being. As the division of parental leave is assumed to determine

the future division of duties between the parents, the expectation of health gains is also based on the finding that having several roles mostly benefits health (e.g. Verbrugge & Madans, 1985; Barnett, 2004); and moreover, that the advantage of additional roles may be larger for men than for women at present (Simon, 1995; Härenstam, Aronsson & Hammarström, 2001).

A logical question in this context is whether the reform represents a wise use of resources compared to traditional public health work. According to Anand and Hansson (1997), there is a general need to broaden the application of health economic evaluations to sectors outside the health sector. Society risks, otherwise, a sub-optimal resource allocation, as interventions not primarily directed at improving health may well be cost-effective in terms of gaining health.

I am not aware of earlier studies on paternity leave from a combined perspective of costs, savings and health. However, Ruhm (2000) has estimated how parental leave entitlement in general affects child survival, and concludes that it may be a cost-effective way of improving health among children. There is a general lack of research on paternity leave (SOU, 2005:73), and this is logical as it is in essence a rare global phenomenon. On the other hand, paid leave at the time of childbirth is becoming the norm in almost all industrialised countries and in many developing countries (Kamerman, 2000). Moreover, increasing levels of paternity leave are reported from, for instance, the Nordic countries, which are known to have generous paternity leave schemes. For illustration, 44 percent of the parental leave grants in Iceland regarded fathers in 2004 (State Social Security Institute), and the male share of parental leave in Sweden has increased from 0.5 percent in 1974 to 19.4 percent in 2005 (National Social Insurance Board). Hence, further examinations of impact from paternity leave seem justified.

1.6. Ethical principles aimed at between-states judgements

In order to judge change from the positions of women and men (effectuated by e.g. the reform of paternity leave in 1974), normative rules beyond those aimed at a particular situation are desired. Some theories claim that they can guide societal choices between-states, i.e. from one situation of the world to another. In the context of public health and socio-economic privileges, at least three systems of belief play important roles: the welfarist approach, the extra-welfarist health approach, and the egalitarian approach. (Despite the distinction made between the welfarist and extra-welfarist approach, it should be noted that there is a debate about the appropriateness in doing so, see for example Birch & Donaldson, 2003; Tsuchiya & Williams, 2001). When gender is concerned, it seems rational to consider feminism and conservatism as well.

Welfarism

According to welfare economics, welfare (or utility) should be the outcome of interest when judging the desirability of societal change. Welfare refers to some mental characteristic such as satisfaction, pleasure, happiness, etc. that an individual derives when consuming goods and services (Johansson, 1991b). The welfarist approach could also be considered to take other aspects into account, e.g. the satisfaction individuals derive from living in a society with an equal distribution of health and wealth (Culyer, 1980). In the classical welfarist approach, utility was assumed to be cardinally measurable and interpersonally comparable; and the social arrangement that maximized the sum of utilities was optimal.

Today, utility is mostly seen as ordinally measurable (i.e. possible to rank) and interpersonally non-comparable (i.e. impossible to say that one has more than another) (Hurley, 2000). In this connection, the sum-maximizing criterion was initially replaced by the Pareto principle. According to this, an intervention is desirable if it makes at least one individual better off without making anybody worse off. The Pareto principle may, however, counteract societal change since most real-world interventions produce both gainers and losers (e.g. a taxpayer, who doesn't necessarily benefit from it, has to pay for a publicly founded health information campaign). This conserving effect led to the development of a less restrictive criterion. By the Potential Pareto principle, interventions are sanctioned if the gainers hypothetically can compensate the losers, i.e. a partial return to the normative base in the classical approach (Sugden & Williams, 1987).

Welfare economics is linked to the notion that individuals are the best judges of their own welfare. Consequently, decision-makers should accept people's choices between health and other components influencing welfare such as wealth, leisure, pleasure, social status, self-respect, friendship, etc. (Gold, Siegel, Russell & Weinstein, 1996). A general limitation in the welfarist approach is evident in the presence of inequalities. Via an adaptive strategy of living, individuals who lack vital necessities may not appear to be quite so badly off based on self-assessed welfare (c.f. Tocqueville and the phenomenon called 'Happy Slave': "Should I call it a blessing of God, or at least malediction of his anger, this disposition of the soul that makes men [and women] insensible to extreme misery?"; Sen, 1992); something that may be of relevance from a perspective

of women and men. Nowadays welfarists do not however claim interpersonal comparisons – their concern is whether the welfare benefits throughout society from e.g. health promotion exceed its welfare costs. In order to accomplish a cost-benefit analysis, which is the evaluation method founded on welfarism, changes in welfare are normally estimated by individuals' willingness to pay or accept (Mitchell & Carson, 1989).

Extra-welfarist health approach – maximization and equity regard

The concept extra-welfarism is derived from the idea that supplementary information besides welfare may be relevant when assessing social arrangements. Sen (1979, 1980) argues that a particularly important type of extra information is basic capabilities. Consequently, the relevant normative issue is if an intervention increases individuals' capacities to do certain things or to achieve their life goals. The relevance of a capability approach in analyses of gender and justice has been further emphasized and explored by Nussbaum (1999).

Building on Sen's notion, health-economists have developed an extra-welfarist approach intended for the health sector (Culyer, 1989). According to this, health interventions should be judged in to the light of their impact on health, and hence, the core issue is how health should be defined, measured, and valued (Drummond, 1990). Various justifications for applying this extra-welfarist approach have been suggested. One might for instance argue that health is the best indicator of people's well-being if one has to select only one (Sen, 1998). Further, since health services can be necessary for a person's very existence, their value should not be linked to an individual's economic resources (Hurley, 2000).

Normally, the extra-welfarist health approach is linked to a principle of maximization, thus consideration of average health while insensitive to the distribution of health between people and groups (Culyer, 1989; Gold et al., 1996). By this foundation, the purpose in health economic evaluations is to choose among interventions based on estimations of costs per added unit of health (e.g. QALY). Weinstein (1990, p. 93) writes: "Most often, cost-effectiveness analysis is applied from a societal viewpoint or from the viewpoint of a national health care system. In this formulation, the implied decision-maker is an agent for the society at large, and the objective is to achieve the maximum possible health benefit".

Extra-welfarism may however incorporate distributive concern, as was done by Wagstaff (1991). By using so-called social welfare functions, one might take into account how far society is prepared to accept a lower per capita health in order to achieve greater similarity in health. That is, a trade-off between efficiency and equity. Williams (1997) further developed the health equity concern by suggesting the use of a 'fair innings', which is basically founded on the idea that everyone has a right to a certain span of normal health. In order to allow effects on the distribution of health in cost-effectiveness analysis, one might for instance use equity-adjusted QALYs (EQALYs) as suggested and applied by Lindholm, Henriksson, Rosén, Bergenheim and Salander (1999). Consideration of equity in the extra-welfarist health approach is normally restricted to individuals' health characteristics, e.g. expected lifetime QALYs (Nord, Pinto, Richardson, Menzel & Ubel, 1999). However, Anand and Hanson (1997) have proposed that income, education and social status should also be considered, which works to the advantage of women in health sector priorities.

Egalitarianism – justice as fairness

John Rawls's theory 'justice as fairness' (1972) is probably the most well-known egalitarian theory (though not truly egalitarian). The general conception of justice according to Rawls is that "all primary goods – liberty and opportunity, income and wealth, and the social bases of self-respect – are to be distributed equally unless an unequal distribution of any or all of these goods is to the advantage of the least favoured" (p. 303). There are two main reasons for choosing these goods; every rational man (and one might add, woman) is presumed to want them, and they enable an objective identification of the least favoured. In order to justify his principles of justice, Rawls suggested that individuals were hypothetically placed in an original position – in which no one knew his fortune, intelligence, strength, etc. (and one must add, sex). Behind this 'veil of ignorance' everyone would agree that society should favour those in exposed positions, simply because everyone risks being the least advantaged.

According to Rawls "primary goods such as health and vigour, intelligence and imagination, are natural goods" (p. 62), and thus not considered in his theory. However, since health is so importantly influenced by the societal structure, it has been proposed that Rawls's principles may be applied to the area of health (Daniels, 1985; Le Grand, 1987; Vågerö, 1995). Among the many theoretical and practical difficulties then arising, is if the least advantaged should be defined in terms of primary goods, in terms of health, or in a combination of health and primary goods (it is also possible to imagine an incorporation of health in some of the five primary goods, e.g. opportunity). Rawls states that the disadvantaged should be identified in an overall index, and that this is mostly an easy task since the worst-off group frequently has less of each primary good. Hence, the inclusion of health in the list implies no difficulty in general. From a perspective of women and men, however, troubles may arise since the division of overall health may not harmonise with the division of the original primary goods.

Rawls's theory has not, as far as I know, been scrutinized from a combined perspective of public health and sex/gender. My suggested interpretation, from present state of the world and from the perspective of the two sexes, is that women are disadvantaged in terms of primary goods and are likely to be so even if health is included in the index. Thus, societal interventions that favour women are desirable – obviously if they are made better off in terms of primary goods and plausibly if they are favoured in health.

Feminist justice – genderless society

Feminism in all its diversity (liberal, marxist, radical, multicultural, existentialist, post-modern, etc.) begins with the conviction that women are systematically subordinated to men, and that this is wrong. Although the common desire is to end this situation, opinions about how to reach the objective differ (Kiss, 1998). An important division is between feminists who reject the gender system in itself and look forward to an androgynous society (i.e. they claim to end both asymmetry and dichotomy), and those who consider that the problem is not the female and male division but the devaluation of women's unique nature and traditional roles (i.e. their claim is to end only the asymmetry) (Young, 1985).

According to Okin (who I would define as a combined liberal and radical feminist), the whole gender system is unfair and must be abolished (1987, 1989). The foundation in her conception of justice is that the family is the lynchpin of gender and that typical family life is not just, neither to women, boys or girls. The rearing of citizens with a strong sense of justice (e.g. rejecting female subordination) requires a society in which men and women would participate in more or less equal numbers in every sphere of life, from infant care to high-level politics. "A just future would be one without gender. In its social structures and practices, one's sex would have no more relevance than one's eye colour or the length of one's toes" (1989, p. 171).

It is Okin's belief that the abolition of gender would have positive effects for all of us. One reason is that influential public spheres will be populated more or less equally by women and men, most of whom are also actively participating parents. That is, Okin suggests that people with day-to-day experience of child nurture would make more beneficial decisions, than other people, regarding issues such as "the foreign policies, the wars and the weapons that will determine the future or the lack of future" (1989, p. 179). Although the achievement of the genderless society requires momentous reform at present (chiefly to "force" men into traditionally female domains), the ultimate goal is to transcend such a requirement (Sterba, 1998).

The abolition of gender is an ethical principle against which any social policy and action may be tested. Okin's conception of justice does not explicitly focus on a particular outcome of interest, but on the similarity between women and men within each sphere of human life (e.g. political power, hard work, money, commodities, security, etc.). Defining health as one of these spheres leads to the conclusion that society should strive to eliminate differences between women and men, in mortality as well as in morbidity. Yet, I suggest that a more probable public health interpretation is that the fair health gap between women and men is what would remain in the genderless society: "... until the life experiences of the two sexes become as similar as their biological differences permit (1987, p. 72).

Hereinafter, terms like feminism, feminist justice, feminist criterion, etc., are used with the meaning of wanting a genderless society in which top positions, income, child care, purchases, violent acts, etc., are divided independent of sex.

Conservatism

The first wave of formulations about the conservative ideology was initiated by the French Revolution, while industrialism and socialism were points of departure in the second wave. Conservatism is commonly defined as a will to preserve, or change in order to preserve, traditions. That is, it suggests a sceptical attitude in general against theories and principles aimed at reforming society towards an ultimate state. The conservative focus is often to maintain concrete institutions like monarchy, church and family, but it also conveys the idea of unbroken continuity in an inevitable societal process of change. The often named founder of contemporary conservatism is Edmund Burke (1730-1797), but Friedrich Hegel (1770-1831) has also been influential in formulating its justification. In this thesis, conservatism is interpreted as being associated with a will to protect distinct roles and occupations for women and men, i.e. as indeed opposing feminist justice in terms of the genderless society.

1.7. Preferences for normative rules – on guidance, but first exploration

With reference to the framework suggested in the Introduction; from *facts* about women and men in a particular state of the world, besides *values* aimed at how to compare and judge fairness within-state, there follows a *conclusion* about whether the state is fair/acceptable or not. Further, from *facts* about a reform's consequences on women and men besides *values* aimed at judging change between-states, there follow *conclusions* about whether the change was satisfying or not. This raises question about people's preferences for various normative rules.

Values aimed at guiding society

The thesis does not aim at suggesting a particular ethical view, although some comments on the subject of values for societal guidance are defensible.

In order to propose how society should think and act, one must initially decide upon 'whose values' (remember that, not long ago, the political preferences of women were neglected in Sweden). For instance, a common idea among economists is that ethical views in the general public should play a part in societal decisions about health-related resource allocations (e.g. Johansson, Jönsson & Karlsson, 1996). From a public health perspective, it is also possible to expect support for using ethical views collected from popularly elected by assuming they represent the people, from health professionals, and from people at risk, or in a state, of ill-health. Another issue regarding guiding preferences is 'which values'. A core issue in this context is how to handle distasteful preferences; the most dramatic examples are pleasures derived from sadism, resentment, and malice. This may be solved by the communitarian idea that principles of fairness must be agreed upon by people in common (Walzer, 1983). However, the requirement of 'shared meanings' is problematic, not least in the context of women and men, since people may not even consider the gender system alterable.

A related issue regards whether individuals may act altruistically, or whether a human act always aims at benefiting individual well-being in some sense. Sen (1979) has questioned the relevance of adopting the latter view from an analytical point of view: "Indeed, if utility (well-being) is defined entirely in terms of choice, then a person will be seen as maximising his utility in every feasible choice. But this assertion, then, is no more than a tautology... an immensely limited model of human behaviour" (p. 552). Moreover, for the purpose of societal guidance, he suggests a distinction between different kinds of utilities (e.g. well-being arising from smoking the cigarette one wants should be separated from well-being arising from the provocative pleasure over someone else's irritation). One's belief regarding rationales for preferences is linked to accepting, or not, that ethical standpoints may depend on which perspective a respondent is asked to adopt. These can be mainly divided into the individual ("imagine your own welfare") and the social ("imagine the welfare of others") perspectives (Dolan, Olsen, Menzel & Richardson, 2003).

I believe that it is possible to interpret every human act as benefiting individual utility/well-being in some sense, but from this does not follow support for considering all types of utilities in societal decision-making. I do also support Okin's (1987) assertion that being a man in a

gendered society makes it impossible to adopt the perspective of a woman, and vice-versa. Yet, it seems rational to accept a range of human acts, from those deeply founded on selfish interest to quite altruistic, and from those deeply founded on one's sex to quite capable of imaging the situation of the other sex, i.e. ambitions of revealing preferences regarding "the good society" make sense to me.

An explorative survey

Since studies on preferences regarding many of the within-state and between-states rules by sex/gender presented above are lacking (Sen, 2004; Daniels, Kennedy & Kawachi, 2004), an explorative survey among public health workers was performed (paper II). The rationale behind the survey was solely descriptive – I do not believe that public health workers' views on ethical principles should have a stronger impact on the societal allocation of health and socio-economic privileges by sex, than other persons' views. However, one set of preferences can contribute to illustrations about judgements of fairness and satisfying change. It may also tell us about the actual framing and implementation of Swedish public health work; and about discrepancies between practice and policy/research, and between female and male views

2. AIMS

The overall aim of the thesis is to propose a public health framework for judging fairness and societal change from the positions of women and men. The specific aims in the papers are:

- to illustrate how the choice of normative theory affects judgements on fairness regarding sex/gender differences in health and socio-economic privileges, and ultimately, societal resource allocation (paper I),
- to explore the public health support for ethical principles intended at how to compare women and men within-state and how to choose from their positions between-states, and whether ethical views differ by sex (paper II),
- to study the relationship between aspects of gender similarity and health by examining if risks of death and sickness differ between unequal and equal parents in the public sphere, and between unequal and equal parents in the domestic sphere (paper III),
- to examine the relationship between paternity leave and male mortality, and to estimate costs, savings and health gains, associated with the reform of entitling fathers to paid parental leave in Sweden (paper IV).

3. METHODS

3.1. Ethical analysis of public health based on sex and gender (paper I)

The method used in paper I was an ethical analysis based on literature review and the classical idea that facts and values are needed to reach a conclusion.

Selection of presumably relevant facts and values

Initially, *facts* about women and men were selected and summarised based on the rationale of being presumably relevant for societal conclusions about public health from a perspective of women and men. These are: the gender system, differences in mortality, morbidity, overall health, socio-economic privileges, and combined health and socio-economic privileges, in addition to causes of health differences. A revised version of this part of the paper is presented in the Introduction (see sections 1.2 and 1.3).

Afterwards, presumably relevant *values* aimed at judging change from a perspective of public health and sex/gender were selected and interpreted. The considered normative theories were: variants of welfarism, justice as fairness by Rawls, and feminist justice by Okin. Moreover, in order to understand these theories' concerns regarding the possibility, and relevance, of comparing women and men in a particular state, further values were selected and interpreted: proposals of judging fairness in different spheres by Walzer, of considering disparities in free choice when judging equity in health by Le Grand, and of judging equity by attainment or shortfall by Sen. The normative approaches aimed at judging change (between-states) are presented in section 1.6, while the normative rules aimed at judging fairness in a particular situation (within-state) are presented in section 1.4. Of note is that these writings consider the conservative criterion and ethics of care as well, which I did not consider crucial at the initial stage of the thesis.

Interpretations of selected normative theories

Facts and values were summarised along with two principal questions: 1) whether the situation is fair, and 2) how to judge interventions.

The final step was a concretisation of the interpretations made from facts and values by five Swedish proposals aimed at improved population health or increased equality between the sexes, together with comments on possible effects.

- 1) Efforts for combating alcohol and drug abuse among young people by use of gender-sensitive methods (assumed to improve health, particularly among boys; and to cement sex stereotypes by e.g. emphasizing relationships and future mothering among girls).
- 2) Strategies for reducing psychosocial stress by improving the health-promoting capacity of workplaces (assumed to improve health, particularly among females; and to add overall welfare by productivity gains).

- 3) Policies for increasing the income of the disadvantaged by means of transfers, subsidies, and union movements (assumed to add freedom, opportunities, self-respect, etc., and health; particularly among females).
- 4) Encouraging women to enter male dominated spheres by driving licence training at school and compulsory military service (assumed to increase equality by sex in typically male spheres; and to harm population health).
- 5) Individualization of the right to paid parental leave by distributing 50 percent of the time available to the mother and father respectively (assumed to increase equality by sex in a typically female sphere; and to decrease female stress/increase male life span).

3.2. Survey on ethical views among public health workers (paper II)

The method used in paper II was a survey with explorative characteristics. A web-based questionnaire was sent to 1,034 public health workers (693 women and 341 men), who attended the Swedish National Conference of Public Health in 2003. The respondents were informed that women live longer than men, while men have more power, influence and resources, and report better self-reported health than women, and that health differences between women and men may depend on biological and societal factors.

Questions on how to compare within-state – current fairness

The first section in the questionnaire aimed at examining attitudes regarding *within-state* judgments. The respondents were asked to choose one of two or three alternatives; answering that:

“men’s earlier death is, or partly is, compensated by better self-reported health” was interpreted as associated with support for health monism (the third alternative was “not compensated”)

“men’s greater share of power, influence and resources completely, or partly, compensate for their shorter life span” was interpreted as associated with support for overall monism (the third alternative was “in no way compensates”)

“less scope for influencing makes a female heart attack more unfair than a male heart attack at equal ages” was interpreted as associated with support for equity as choice (the other alternative was “scope for influencing not relevant”)

“men’s excess mortality from alcohol, violence and risk-taking makes their shorter life span less unfair as men partly have themselves to blame” was interpreted as associated with rejection of ethics of care (the other alternative was “does not affect my judgement”)

“if women have a longer biological potential in life span of 2.5 years, then it is mostly fair if they live 2.5 years longer than men” was interpreted as associated with support for equity defined in shortfall (the other alternative was “fair if women and men have equal life spans”)

Questions on how to choose between-states – maximization or equality of health?

The second section in the questionnaire aimed at examining *between-states* choices by extra-welfarism defined as health maximization. In a table, the current state of female life expectancy (83 years), male life expectancy (78 years), and overall life expectancy (80.5), was presented together with two hypothetical programmes which were said to have equal costs. Programme 1 adds 2 years to both sexes, which means an overall level of 82.5 years and a continued sex/gender gap of 5 years; programme 2 adds 3 years solely to males, which means an overall level of 82.0 years and a decreased sex/gender gap to 2 years. The respondents should either choose one, or mark

that they were unable to choose as they felt the programmes were of equal value. Preference for programme 1 was interpreted as support for health maximization, while preferences for the other alternatives as rejection.

Questions on how to choose between-states – gender equality or other principles?

The third section in the questionnaire aimed at examining *between-states* choices based on five states of different distributions of life expectancy and gross income (Table 1). Respondents were asked to compare the first state (current situation in Sweden) with state 2, state 3 etc., and to express preference for one of the two states, or to give the states equal value.

Table 1 Illustration of life expectancy (years) and income (SEK thousands) by sex; current (state 1) and hypothetical distributions (states 2-5)

	State 1 Current	State 2 Pareto	State 3 Equality	State 4 Trade-off income	State 5 Trade-off health
Females					
Life expectancy	83.0	85.0	80.5	80.5	79.0
Income	170	180	210	180	210
Males					
Life expectancy	78.0	79.0	80.5	80.5	79.0
Income	250	270	210	180	210
Average					
Life expectancy	80.5	82.0	80.5	80.5	79.0
Income	210	225	210	180	210

Pareto scenario: By moving from state 1 to state 2, both sexes gain life expectancy and income though the sexual differences increase. It was assumed that a supporter of the Pareto criterion prefers state 2, based on the premise that additional levels of life span and income mean higher levels of welfare for both sexes.

Conservative (cf. Equality) scenario: By moving from state 1 to state 3, females lose life expectancy and gain income, and males gain life expectancy and lose income, with the end-result of equal sexual distributions and unchanged total levels in both respects. It was assumed that a supporter of the conservative criterion prefers state 1.

Trade-off income scenario: State 4 implies equal sexual distributions of life expectancy and income, but a lower level of total income at 30,000 SEK compared to state 1. It was assumed that preference for state 4, or judging the two states to be of equal value, is associated with willingness to sacrifice income in exchange for gender equality.

Trade-off health scenario: State 5 implies equal sexual distributions of life expectancy and income, but a lower overall life expectancy at 1.5 years compared to state 1. It was assumed that preference for state 5, or judging the two states to be of equal value, is associated with a willingness to sacrifice health in exchange for gender equality.

Expected relationships between ethical views

Some of the ethical principles are connected in a way that justifies a check for consistency in answer patterns. It is likely that individuals who accept that poor health can be compensated by more power, influence and resources, also accept that higher mortality can be compensated by lower morbidity. Moreover, answers ought to be consistently based on consideration of past processes, or on end-results. The extra-welfarist approach has developed as a response to criticism against welfarism, but preference for health outcomes in the health sector may well connect to support for utility if resource allocation between sectors is under consideration. Thus, the expectation was that advocates of health maximization support the Pareto criterion and reject trading-off income, and that advocates of the Pareto criterion reject trading-off health. Finally, feminism as adopted in the thesis requires similarity between women and men in every life sphere, i.e. support for gender equality should be associated with rejection of monism/compensation.

3.3. Epidemiologic analysis of parental division and health (paper III)

The method used in paper III was an epidemiologic analysis based on longitudinal register-based data. A central concept is 'traditional', which is referred to as male dominance in the public sphere and female dominance in the domestic sphere, while 'untraditional' refers to the opposite. The population comprised all couples in Sweden who had their first child together in 1978 (49,120 parental couples). It was generated from the Multigenerational Register, and then personal information from different data sources was linked to the studied individuals (Statistics Sweden, National Social Insurance Board, National Board of Health and Welfare). The restriction to first child was motivated by a wish to minimise impact from earlier patterns of parental division.

Classification of parental (in)equality – independent variables

The choice of independent variables was guided by feminist justice. Income (Swedish crowns, 1980) and occupational position (ranked into 8 levels, 1980) were selected as indicators of gender/parental equality in the public sphere, while parental leave allowances (full-time days, 1978-1979) and temporary child care benefit (full-time days, 1980) were selected as indicators in the domestic sphere.

The independent variables were transformed to ratios between the parents; male to female if public indicator, and female to male if domestic indicator. The couples were then classified into five categories of (in)equality based on the guiding principle in Swedish policy and Okin's definition of the genderless society. That is, equality was defined when both parents have at least 40 percent respectively of the parents' total income, parental leave, etc., while pronounced inequality was defined when one of the parents has less than 20 percent. The implication of these principles when transformed to ratios is; pronounced traditional >4.0, moderate traditional 4.0-1.5, equal 1.5-0.67, moderate untraditional 0.67-0.25, pronounced untraditional <0.25.

Two illustrations; the public sphere ratio is 2.0 if the father's occupational ranking is 6 and the mother's is 3 (the couple classified as moderate traditional) and the domestic sphere ratio is 24.0 if the mother has 240 days on parental leave and the father has 10 days (the couple classified as pronounced traditional).

Health outcomes, statistical analysis, confounders, and hypotheses

Health was measured by dichotomized overall mortality (1981-2001) and sickness absence (1986-2000). The statistical method was multiple logistic regression with odds ratios as estimates of the relative risk, and the reference group of equal women/men. That is, the results demonstrate risks of death and sickness in the four inequality categories compared to the equal category. Age, socio-economic position (indicated by income) and country of birth were evaluated for possible confounding, since they may connect both to ambitions of gender equality and to mortality. The final odds ratios were adjusted for the two former variables and for absolute levels in each indicator (c.f. the aim was to study health impact from the relative position).

The overall hypothesis was that gender equality, defined as virtual similarity between the sexes in every sphere of life, is associated with reduced health differences between women and men. In the studied population, however, it was likely that women had entered the public sphere, and hence, were stressed by too many responsibilities and duties. On the other hand, it was likely that men had not entered the domestic sphere, and hence were harmed by having too few. The expectations regarding the results were therefore based on a combination of the hypotheses of convergence, stress and expansion: 1) lower female risks/higher male risks when being traditional versus equal in (only) the public sphere and 2) higher female and male risks when being traditional versus equal in (also) the domestic sphere. As to the effects of being untraditional versus equal, the adopted view was explorative.

3.4. Cost-effectiveness analysis of the paternity leave reform (paper IV)

The method used in paper IV was a cost-effectiveness analysis based on longitudinal register-based data. First, the relationship between paternity leave and male mortality was examined. Second, a cost-effectiveness analysis of the reform entitling fathers to take parental leave in Sweden in 1974 was performed from the societal perspective. The population of men was based on all Swedish couples who had their first child together in 1978 together with the criterion of being entitled to paternity leave (45,801 fathers). A reason for accepting the year of 1978, instead of 1974 when the parental insurance system was introduced, was that the amount of paternity leave had become substantial enough for the analysis.

Relationship between paternity leave and mortality

In order to analyse the relationship between paternity leave and overall mortality, multiple logistic regressions with odds ratios as estimates of the relative risk, were performed. The information on paternity leave consisted of full days with parental allowance in 1978-1979, during which the entitlement per child during was 270 days (National Social Insurance Board). Men who received no parental allowances were the reference group, while men who took paternity leave were divided into 6 categories (>0-10 days, >10-20 days, >20-30 days, >30-60 days, >60-90 days, and >90 days). Overall mortality for the fathers was captured during 1981-2001 (National Board of Health and Welfare).

First, unadjusted and age adjusted odds ratios were calculated, and then, adjustments for aggregate income in 1980, education by seven levels in 1970, and birth country by the division of inside/outside Sweden, were completed (Statistics Sweden). For the purpose of calculating gained health, similar analyses were completed for men who took more than zero days of paternity leave, versus men who took zero days.

Foundations for the cost-effectiveness analysis

The results from the cost-effectiveness analysis are demonstrated in costs minus savings per health unit gained. A basic assumption in the calculations was that the alternative to paternity leave is maternity leave, i.e. if the father had not been on leave, the mother would have been.

The study design does not permit the separation of findings due to causality (paternity leave causes health-related change) from selection (men who take paternity leave have initially different life styles and health status). Hence, the unknown proportion of the relationships that actually followed the parental insurance reform in terms of savings and health gains, was set at 50 percent in the base case and 25 percent in a variant of the sensitivity analysis (referred to as set effectiveness, effective fractions, etc.).

All figures were transformed from Swedish crowns to euros (EUR) by mean exchange rate January-August 2005 (Sweden's central bank). Costs and savings were adjusted to the price level in 2004 by the consumer price index; and costs, savings and health gains are presented in both discounted (3 percent) and undiscounted values.

Costs

The costs associated with the reform of entitling fathers to parental leave were approximated by the levels of paternity leave in 1978-1979. Major cost items were reasonably incurred from: 1) activities aimed at informing parents about the new system, 2) added administration of handling paternity leave in addition to maternity leave by social insurance officials, and 3) production losses due to absence from work among fathers on leave.

Information costs required for the studied impact of paternity leave were assumed to include costs for a marketing campaign covering the whole country in 1977 and activities at the local level during the same year. The extra cost for administration was based on the number of paternity leave payments, the time (cost) spent on handling one of them, and the assumption that half of the demonstrated parental leave implied additional handling.

Costs related to production losses were based on paternity leave data in 1978-1979, together with information on aggregate income from employment and business (Statistics Sweden), and payroll tax (Tax authorities) in 1980. An issue of importance is if estimates should consider the whole period of work absence due to parental leave (the human capital method) or if the estimates should be restricted to a friction period (the time needed to restore production from unemployed people). Generally, the latter implies higher costs for shared parental leave than for solely maternity leave, as the periods of friction involve two parents instead of one. The human capital method was the base case, supplemented with a friction variant period based on 90 days (Koopmanshap, Rutten, van Ineveld & van Roijen, 1995) in the sensitivity analysis.

Another vital issue regarding production losses is if the valuation should be approximated by sex-diverse income or average income for both sexes. The former option acknowledges higher costs for paternity leave than for maternity leave, while the latter attaches similar costs for mothers and fathers on parental leave. Sex-diverse income was used in the base case, while mean income in a variant of the sensitivity analysis; the daily cost estimates were EUR 85.72 (male income), EUR 49.08 (female income), and EUR 67.79 (mean income).

Savings

Savings from the paternity leave reform were calculated by disparities in sickness leave (National Social Insurance Board) and inpatient care (National Board of Health and Welfare) among men who were on paternity leave compared to men who were not. In the base case, savings were estimated during a follow-up period of 22 years (1980 to 2001), while a variant in the sensitivity analysis was extended until retirement (65 years) for sickness leave and average life expectancy (77 years) for inpatient care.

Information on sickness leave covered the period 1986-2000. Men who took paternity leave had on average 14.16 days fewer days than men who did not, i.e. 20.77 days in the base case. The daily cost estimates were estimated by aggregate income and payroll taxes during 1980-2001, i.e. EUR 99.08 (male income) and EUR 83.55 (mean income).

Information on inpatient care covered the period 1981-2001. Men who took paternity leave had on average 3.95 days fewer days than men who did not, i.e. 4.14 days in the base case. The daily cost estimate was calculated by five main groups of inpatient care during seven different years (Federation of Swedish County Councils), which resulted in an estimate of EUR 451.41.

Gained health

The calculations of gained health were based on the summarising risk of death generated from the logistic regression analyses; and demonstrated in life years and QALYs. The foundation was that men who took paternity leave would otherwise have had mortality patterns similar to men who did not take paternity leave; the latter were assumed to have life spans comparable to Swedish men in general. In 1992 (average year of death among men with no paternity leave), average remaining life expectancy for Swedish men at the age of 47 (average age of death among men with no paternity leave) was 30.53 years (Statistics Sweden). For the purpose of converting life years to QALYs, estimates per age group were used (Gerdtham & Johannesson, 2000); the remaining QALY weighting for a man at the age of 47 was approximated at 0.84.

In economic evaluations of interventions adding life years, the question arises about whether consequences on consumption and production should be considered (e.g. Meltzer, 1997; Brouwer, Rutten & Koopmanschap, 2001). One reason for not considering this item in the base case was empirical hesitation regarding the possibility of attaching firm production values to different age group. That is, I had in mind that the productive incentives, and hence production, among individuals who face the suicidal precipice when they retire (a logic consequence from strict economic considerations regarding the elderly) should be smaller than among individuals who face a period of retirement; everything else equal. Based on national guidelines (Swedish Pharmaceutical Benefits Board, 2003) and estimates on production less consumption by age group in 1997 (Ekman, 2002), monetary consequences of saved lives were considered in a variant of the sensitivity analysis.

4. RESULTS

4.1. Interpreting normative theories from the position of the sexes (paper I)

Facts and values – summary applied to women, men, and public health

There is seldom an unambiguous understanding of a normative theory, perhaps above all when it is applied to the situation of women and men. Yet, probable interpretations of the selected approaches are summarised in Table 2 by questioning whether the situation is fair and how interventions are judged.

Table 2 Summary of normative theories applied to women, men and public health

	Welfarism <i>(applied)</i>	Extra-welfarism <i>(mainstream)</i>	Extra-welfarism <i>(equity regard)</i>	Egalitarianism <i>(by Rawls)</i>	Feminist justice <i>(by Okin)</i>
1. Is the situation fair?					
Spheres / Outcomes	One global; Welfare	One; Health	One; Health	Several; Primary goods	Several; Life spheres
Comparisons women & men	No	No	Yes	Yes	Yes
Free choices	Not relevant	Not relevant	Partly relevant	Relevant	Relevant
Attainment or Shortfall	Not relevant	Not relevant	Both of them	Primarily attainment	Primarily shortfall
	<i>Impossible to judge</i>	<i>Does not take a stand</i>	<i>No, unfair to men</i>	<i>No, unfair to women</i>	<i>No, unfair to all</i>
2. How are interventions judged?					
Ethical criterion	Welfare-maximization	Health-maximization	Trade-off efficiency & equity	Favour the worst-off	Increase equality between sexes
Method	Cost-benefit analysis	Cost-effectiveness	Social welfare function	Veil of ignorance	Gender-abolishment

Welfarism (applied)

Is the situation fair? Judgements about women's and men's relative situations are impossible since the outcome of interest, welfare, does not permit interpersonal comparisons. Although differences in women's and men's scope for making free choices are recognised, they are not considered in value judgements. The principals of attainment and shortfall are irrelevant.

How are interventions judged? The point of departure is that society should strive for as much welfare as possible, thus a maximization principle. In order to establish if interventions are desirable, cost-benefit analysis is used. Current sexual differences in income and resources work to the disadvantage of women, if the willingness to pay measure is not corrected for ability to pay.

Extra-welfarism (mainstream)

Is the situation fair? Interpersonal comparisons between women and men are possible, though not considered. The extra-welfarist approach permits different outcomes of interest, but from a health sector perspective, health is assumed to be most relevant. The connection between individuals' freedom to choose and their health, together with the principals of attainment and shortfall, are not relevant.

How are interventions judged? The overall objective is presumed to be as much health as possible, thus a maximization principle. Judgements about the desirability of interventions are based upon results from cost-effectiveness analysis; most health per investment is given priority. (Though the recipient's sex is not relevant in principle, the longer female life expectancy implies that saving a woman's life is valued over saving a man's life.)

Extra-welfarism (equity regard)

Is the situation fair? Women's and men's health are compared based on e.g. expected lifetime QALYs. The common conclusion is thus that the situation is unfair to men. However, consideration of the distribution of income, education, social status etc. (determinants of free choice) may counteract men's equity drawback. Both the principle of attainment and shortfall may be of relevance, though information about their respective support is missing.

How are interventions judged? Judging the desirability of an intervention depends on the recipient of health. The assignment of equity is decided upon by revealing a trade-off between the level and distribution of health. Weighting is usually restricted to health characteristics, which gives preference to health increases among men. Yet, consideration beyond health in equity-adjusted cost-effectiveness analyses may lead to the opposite conclusion.

Egalitarianism (by Rawls)

Is the situation fair? The outcomes of interest, primary goods, are interpersonally comparable. Since women have fewer of these (and one might assume that it does not favour them), the situation is unfair. This female disadvantage is probably maintained even if health is added. The right to make free choices is guaranteed by the principle of equal liberties. Natural drawbacks in

health, intelligence, etc. should be compensated for, at least during a certain time of life. Thus, the principle of attainment is more fundamental than shortfall.

How are interventions judged? Individuals behind a 'veil of ignorance' judge the desirability of societal change. Presuming that it is possible to imagine one's self as sexless in a gendered society; favouring women would be agreed upon. A plausible interpretation is that this would apply to a variety of interventions; income increases as well as health improvements among women.

Feminist justice (by Okin)

Is the situation fair? Comparisons between women and men are the basic point of departure. The situation is unfair to all, though currently; the unfairness mainly hits women and children of both sexes. Women's fewer opportunities to make free choices are recognized, though principally, individual freedom is subordinate to the aim of a genderless society. The principle of shortfall dominates since justice claims no differences but pure biological disparity.

How are interventions judged? Interventions are judged to be desirable if they contribute to the abolishment of gender. Defining health as a sphere that should be equally divided between women and men implies that reducing the gap is sanctioned. Though a more relevant interpretation is to consider health as a secondary outcome of interest, i.e. the fair distribution will appear in the genderless society.

Putting into practice by five Swedish proposals

The final step requires us to recall the proposals of: 1) preventative efforts to combat alcohol and drug abuse among young people by gender-sensitive methods, 2) strategies for reducing psychosocial stress by improved workplace health-promotion, 3) policies for increased income of the disadvantaged by transfers, subsidies and union movements, 4) encouraging women to male spheres by driving licence training at school and compulsory military service, and 5) individualization of the right to parental leave by distributing 50 percent of the time available to the mother and father respectively. The proposals are assumed to be effective in relation to their objectives, and moreover, limited resources require a choice to be made - which of the proposals should be implemented if?

The ranking based on welfarism and extra-welfarism is not easy to predict since conclusions are founded on the magnitude of costs and benefits (though proposal 4 seems far away). Yet, proposal 1 is a strong candidate according to the extra-welfarist approach as there is much health to gain from reduced alcohol and drug abuse (efficiency), and as the sex with lesser lifetime health would mostly benefit (equity regard). An advocate of justice as fairness would look for the sex worst-off. Low (or no) paid women could compete for this position even though health is added to the primary goods list, i.e. proposal 3 is given priority (a more far-fetched, though public health relevant choice, is proposal 2). According to feminist justice, proposal 5 is ranked as number one since it intervenes in the family-sphere, before proposal 4. On the other hand, proposal 1 is not supported even without resource limitations since it seems to maintain the gender system.

This exercise illustrates two things. The first is that priorities based on welfarism and its variants require relevant quantities to be measured while the two other theories seem to arrive at conclusions independent of the quantities. (But we can of course imagine a situation when several proposals aiming at, for instance, the genderless society are valued and ranked according to their quantitative consequences.) The second thing is that different normative theories are likely to defend different proposals – even if the empirical facts are identical.

4.2. One set of ethical views and the relationship between principles (paper II)

The overall response was 69 percent; thus 712 individuals answered the questionnaire to some extent. Background information shows that 28.4 percent are 44 or younger and that 23.3 percent work in the County of Stockholm. In addition, 5.2 percent are politicians and 13.2 percent researchers, 16 percent work in municipalities and 18 percent in county councils, while the rest work in other sectors or in more than one sector. An analysis of the drop-out rate demonstrated that there is no significant association by sex between respondents (32.4 percent males) and non-respondents (33.2 percent males).

Within-state and between-states answers

Comparing the position of women and men

The results from how to compare women and men within-state demonstrate that 32.7 percent of the respondents support health monism, while 25.4 percent support overall monism. Furthermore, 38.2 percent agree to equity as choice, while 68.4 percent to ethics of care. The support for judging equity by shortfall is stronger than by attainment (58.3 percent versus 41.7 percent). The findings demonstrate no significant differences between female and male views.

Health maximization versus equality of health

The first section of between-states choices reveals an overall rejection of health maximization. About 29 percent chose programme 1 (two years to both sexes), slightly more than 45 percent chose programme 2 (three years to men and zero years to women), and almost 26 percent state that they can not choose. The support for maximization is significantly weaker among women (24 percent) than among men (39.1 percent).

Gender equality versus other criteria

The second between-states section shows that 37.1 percent of the respondents support the Pareto criterion, and 17.6 percent the conservative criterion, instead of gender equality goals. Respondents who reject trading-off total levels of income and life span for the purpose of gender equality constitute 34.6 percent and 45.4 percent respectively. Analysis by sex (Table 3) demonstrates consistently significant differences, for instance, slightly more than 28 percent of females and almost 57 percent of males support Pareto, and about 14 percent of females and 25 percent of males support conservatism.

Table 3 Proportions (percent) by sex regarding how to judge change between-states: gender equality versus other criteria (95-percent confidence intervals)

	Females	Males
Support Pareto criterion though increased gender inequality <i>n=566, males 31.8%</i>	28.2 (23.7-32.7)	56.7 (49.4-64.0)
Support conservative criterion instead of gender equality <i>n=562, males 31.9%</i>	14.1 (10.6-17.6)	25.1 (18.7-31.5)
Rejection of trade-off income in exchange for gender equality <i>n=557, males 31.4%</i>	28.0 (23.5-32.5)	49.1 (41.7-56.6)
Rejection of trade-off health in exchange for gender equality <i>n=549, males 31.9%</i>	40.1 (35.1-45.1)	56.6 (49.2-64.0)

Relationships between ethical principles

The analyses of consistency in answer patterns, demonstrate that five of six explored relationships are highly statistically significant (Table 4). Most individuals, who support overall monism (i.e. compensating poor health with socio-economic privileges), also support health monism. Moreover, rejection of equity as choice is mostly connected to support for ethics of care (though the opposite direction is not valid). Regarding the coherence between variants of welfarism; support for health maximization is mostly linked to support for the Pareto criterion and to rejection of trading-off income, while support for the Pareto criterion is mostly linked to rejection of trading-off health. Finally, the apparent link from support of gender equality (instead of the Pareto criterion) to rejection of overall monism is not matched by a link from rejection of gender equality to support for overall monism, i.e. a non significant p-value.

Table 4 Relationships between attitudes to ethical principles (p-values refer to chi-square tests)

– Support overall monism;	n=149
of which support health monism:	66.4 percent
– Rejection overall monism;	n=437
of which rejection health monism:	77.3 percent
<i>p-value<0.0001</i>	
– Support equity as choice;	n=218
of which rejection ethics of care:	38.5 percent
– Rejection equity as choice;	n=355
of which support ethics of care:	72.7 percent
<i>p-value=0.0051</i>	
– Support health maximization;	n=158
of which support Pareto criterion:	56.3 percent
– Rejection health maximization;	n=397
of which rejection Pareto criterion:	70.0 percent
<i>p-value<0.0001</i>	
– Support health maximization;	n=156
of which rejection trade-off income:	54.5 percent
– Rejection health maximization;	n=390
of which support trade-off income:	73.1 percent
<i>p-value<0.0001</i>	
– Support Pareto criterion;	n=205
of which rejection trade-off health:	67.8 percent
– Rejection Pareto criterion;	n=339
of which support trade-off health:	67.9 percent
<i>p-value<0.0001</i>	
– Support gender equality (over Pareto);	n=341
of which rejection overall monism:	73.3 percent
– Rejection gender equality (over Pareto);	n=207
of which support overall monism:	23.2 percent
<i>p-value=0.3616</i>	

4.3. Gender (in)equality and female/male risk for death and sickness (paper III)

Description about population and classification of gender (in)equality

Mean age when the parents had their first child together was 25.8 for women and 28.8 for men; and mean income in 1980 was SEK 37,507 for women and SEK 71,095 for men. Occupational data shows, for instance, that 21 percent of females and 1 percent of males had no independent occupational position, that 7 percent of females and 23 percent of males were skilled manual workers, and that 4 percent of females and 10 percent of males were higher managers or professionals. Average days of parental leave were 228.2 among women and 8.8 among men, while corresponding days of temporary child care were 4.3 and 3.6. Table 5 shows the proportions of equal/unequal couples for each indicator of gender equality, and the numbers of couples who are simultaneously classified equal in various combinations. The largest proportion of equal couples is seen in occupational position, while the smallest proportion in parental leave. Moreover, it is most common to be double equal in the public indicators (7,079 couples), it is most common to be triple equal in the combination of income, occupational position and temporary child care (958 couples), and it is rare to fulfil the criterion of being equal in all four indicators (61 couples).

Table 5 Proportions of (un)equal couples by indicator of gender equality, and numbers of equal couples in two, three and four indicators

Indicator and number of classified couples (n)	Traditional Pronounced	Traditional Moderate	Equal	Untraditional Moderate	Untraditional Pronounced
Income: 45,432	20.5%	44.4%	29.7%	3.6%	1.8%
Occupation: 37,427	9.2%	35.7%	46.9%	7.9%	0.3%
Parental leave: 45,801	92.3%	4.8%	2.1%	0.4%	0.4%
Temporary care: 34,296	40.3%	10.6%	10.2%	7.8%	31.1%
Classification of equality by various combinations					Number of couples (n)
Two indicators:	Income	Occupation			7,079
	Occupation	Temporary care			2,079
	Income	Temporary care			1,497
	Occupation	Parental leave			432
	Income	Parental leave			422
	Parental leave	Temporary care			120
Three indicators:	Income	Occupation	Temporary care		958
	Income	Occupation	Parental leave		263
	Occupation	Parental leave	Temporary care		88
	Income	Temporary care	Parental leave		78
Four (all) indicators:	Income	Occupation	Parental leave	Temporary care	61

Odds ratios for being unequal versus equal – death and sickness

Results from the logistic regression analyses are presented below. The odds ratios for being unequal (pronounced/moderate traditional, and pronounced/moderate untraditional) versus equal, adjusted for age, income and absolute levels, are shown in Table 6 (female and male mortality) and in Table 7 (female and male sickness leave).

Table 6 Mortality for females and males – odds ratios for inequality versus equality; adjusted for age, income and absolute levels (95-percent confidence intervals)

Indicator of gender equality	Females	Males
	Odds ratios Adjusted for age, income and absolute level* (95% CI)	Odds ratios Adjusted for age, income and absolute level* (95% CI)
Income (public):		
Traditional-pronounced	0.63 (0.48-0.82)	1.04 (0.92-1.19)
Traditional-moderate	0.71 (0.60-0.84)	0.92 (0.82-1.03)
Equal couples (reference group)	1	1
Untraditional-moderate	0.78 (0.53-1.15)	1.11 (0.89-1.38)
Untraditional-pronounced	1.39 (0.93-2.07)	0.98 (0.73-1.32)
Occupation (public):		
Traditional-pronounced	0.68 (0.50-0.93)	1.16 (0.95-1.43)
Traditional-moderate	0.88 (0.71-1.09)	1.12 (0.99-1.27)
Equal couples (reference group)	1	1
Untraditional-moderate	1.58 (1.20-2.07)	1.04 (0.85-1.28)
Untraditional-pronounced	-	0.79 (0.38-1.61)
Parental leave (domestic):		
Traditional-pronounced	1.61 (0.93-2.78)	1.06 (0.69-1.63)
Traditional-moderate	1.17 (0.64-2.14)	0.71 (0.48-1.06)
Equal couples (reference group)	1	1
Untraditional-moderate	0.93 (0.27-3.24)	1.01 (0.51-2.38)
Untraditional-pronounced	2.83 (1.27-6.32)	0.69 (0.31-1.56)
Temporary care (domestic):		
Traditional-pronounced	1.14 (0.85-1.52)	1.59 (1.26-2.00)
Traditional-moderate	0.94 (0.66-1.36)	1.05 (0.79-1.39)
Equal couples (reference group)	1	1
Untraditional-moderate	1.06 (0.72-1.56)	1.11 (0.81-1.52)
Untraditional-pronounced	1.09 (0.80-1.48)	1.32 (1.04-1.67)

* absolute levels of female and male income (for income), occupation (for occupational position), parental leave (for parental leave) and temporary care (for temporary care)

The female odds ratios adjusted for age, income and absolute levels demonstrate that being traditional in the public sphere is associated with lower death risks. In comparison with equal women, pronounced traditional women have e.g. significantly decreased risks of 37 percent (income) and 32 percent (occupation). The only significant female finding in the domestic sphere is the almost three times higher risk among pronounced untraditional in parental leave. This indicator does also point to a 61 percent increased risk for women who are pronounced traditional versus equal. In the public sphere, none of the fully adjusted male odds ratios are significant. However, it is indicated that traditional men in occupational position have increased death risks compared to equal men. The indicator of temporary child care demonstrates that pronounced traditional men have higher risks (59 percent), but also that pronounced untraditional men have higher risks (32 percent).

Table 7 Sickness for females and males – odds ratios for inequality versus equality; adjusted for age, income and absolute levels (95-percent confidence intervals)

	Females	Males
	Odds ratios Adjusted for age, income and absolute level* (95% CI)	Odds ratios Adjusted for age, income and absolute level* (95% CI)
Indicator of gender equality		
Income (public):		
Traditional-pronounced	0.55 (0.50-0.60)	1.08 (1.02-1.15)
Traditional-moderate	0.71 (0.67-0.75)	0.96 (0.91-1.01)
Equal couples (reference group)	1	1
Untraditional-moderate	1.08 (0.96-1.22)	0.64 (0.57-0.72)
Untraditional-pronounced	0.92 (0.78-1.08)	0.39 (0.33-0.46)
Occupation (public):		
Traditional-pronounced	0.40 (0.36-0.44)	1.03 (0.92-1.14)
Traditional-moderate	0.79 (0.74-0.84)	1.23 (1.16-1.30)
Equal couples (reference group)	1	1
Untraditional-moderate	1.42 (1.29-1.56)	0.74 (0.67-0.81)
Untraditional-pronounced	1.26 (0.76-2.09)	0.20 (0.12-0.33)
Parental leave (domestic):		
Traditional-pronounced	1.10 (0.93-1.31)	1.04 (0.84-1.29)
Traditional-moderate	0.78 (0.64-0.94)	0.88 (0.73-1.06)
Equal couples (reference group)	1	1
Untraditional-moderate	1.36 (0.95-1.96)	1.05 (0.70-1.56)
Untraditional-pronounced	1.92 (1.37-2.70)	1.24 (0.85-1.81)
Temporary care (domestic):		
Traditional-pronounced	1.14 (1.04-1.24)	1.27 (1.16-1.40)
Traditional-moderate	0.88 (0.79-0.99)	1.06 (0.95-1.19)
Equal couples (reference group)	1	1
Untraditional-moderate	1.10 (0.97-1.24)	1.01 (0.89-1.14)
Untraditional-pronounced	1.31 (1.19-1.44)	1.07 (0.97-1.17)

* *absolute levels of female and male income (for income), occupation (for occupational position), parental leave (for parental leave) and temporary care (for temporary care)*

The fully adjusted female odds ratios in the public sphere show that being traditional is associated with lower sickness risks than being equal. Pronounced traditional women have for instance decreased risks of 45 percent (income) and 60 percent (occupation). In addition, moderate untraditional women in occupation have a significantly higher risk than equal women. The domestic female findings are mixed, but point consistently at increased risks among untraditional women. Compared to equal men, pronounced traditional in income have 8 percent and moderate traditional in occupational position 23 percent higher sickness risks; and so have pronounced traditional men in temporary child care (27 percent). It is also seen that being a pronounced untraditional man in the public sphere is significantly associated with lower risks.

4.4. Paternity leave and mortality; and the cost per QALY for the reform (paper IV)

The population may be divided in two main categories of men: those who were on parental leave during 1978-1979 (n=9,984) and those who were not (n=35,817). It is shown that the average year of birth among both categories was 1949. Further, men who took paternity leave earned on average more in 1980, had generally higher levels of education in 1970 and 1990, and were more likely to be born in Sweden and to cohabit with the mother of the child in 1985.

Death risks, gained health, and costs due to added life years

The results from the logistic regression analyses are shown in Table 8. The first column illustrates the different categories of days on paternity leave, including numbers of fathers and deaths. Unadjusted and age-adjusted odds ratios are shown in the second and third columns, while odds ratios adjusted for age, income, education and country of birth are shown in the fourth column.

Table 8 Male mortality – odds ratios for paternity leave versus no paternity leave; unadjusted, age-adjusted, and adjusted for age, income, education and birth country (95-percent confidence intervals)

	Odds ratios Unadjusted	Odds ratios Age-adjusted	Odds ratios Adjusted for age, income, education and birth country
Paternity leave = 0 days (n=35,817 deaths=1,718)	1	1	1
<i>Categories of paternity leave versus no paternity leave:</i>			
Paternity leave >0-10 days (n=2,397 deaths=101)	0.87 (0.71-1.07)	0.90 (0.74-1.11)	0.93 (0.73-1.18)
Paternity leave >10-20 days (n=1,207 deaths=51)	0.88 (0.66-1.16)	0.90 (0.67-1.20)	0.95 (0.68-1.33)
Paternity leave >20-30 days (n=1,747 deaths=60)	0.71 (0.54-0.92)	0.72 (0.55-0.93)	0.78 (0.57-1.05)
Paternity leave >30-60 days (n=2,229 deaths=70)	0.64 (0.50-0.82)	0.65 (0.51-0.82)	0.75 (0.57-0.99)
Paternity leave >60-90 days (n=1,167 deaths=37)	0.65 (0.47-0.90)	0.63 (0.45-0.87)	0.71 (0.48-1.04)
Paternity leave >90 days (n=1,237 deaths=65)	1.10 (0.85-1.42)	1.03 (0.79-1.33)	0.97 (0.70-1.33)
<i>Summary of paternity leave versus no paternity leave:</i>			
Paternity leave >0 days (n=9,984 deaths=384)	0.79 (0.71-0.89)	0.80 (0.71-0.89)	0.84 (0.74-0.96)

It is demonstrated that men who were on paternity leave between 30-60 days run a statistically decreased mortality risk of 25 percent compared to men who were not, after adjusting for age, income, education and country of birth. In addition, the results point to significant risk reductions for men in the categories >20-30 days (22 percent) and >60-90 days (29 percent).

The summarising odds ratio demonstrates a significantly lower death risk of 16 percent among men who took some paternity leave versus men who did not, which implies 73 saved lives. Accordingly, the health gains associated with the parental insurance reform is set at 1,114 life years and 936 QALYs in the base case (undiscounted estimates); assumed to be equally distributed over the period 1981-2022.

The foundation in the calculation of net costs related to additional life years was that the average age of an avoided death is 47 years, while average age of an expected death was about 77 years. Based on the Swedish estimates by age groups, one saved life connects roughly to a net cost from production less consumption of EUR 68,937. In the base case of 36.5 saved lives, this means a total of EUR 2,516,200 (undiscounted estimate); assumed to be equally distributed during 1992-2022.

Costs, savings, and cost-effectiveness

The results from the cost-effectiveness analysis are presented in Table 9. The base case is calculated by the human capital method, sex diverse income, savings during 22 years, and an effective fraction of 50 percent. These assumptions differ in terms of the friction method (variant 2), mean income (variant 3), production less consumption in added life years (variant 4), extended periods of savings to 35 years for sickness leave and 47 years for inpatient care (variant 5), and an effective fraction of 25 percent (variant 6).

Table 9 Cost and savings (EUR thousands), and health gains, in base case and by variants 2-6; discounted values (3 percent) and undiscounted values between brackets ('~' savings exceed costs)

	Base case 1) – human capital method – sex diverse income – savings 1980 to 2001 – effectiveness of 50%	Variant 2) – friction method	Variant 3) – mean income	Variant 4) – net costs related to added life years	Variant 5) – extended periods of savings	Variant 6) – effective- ness of 25%
<i>Costs</i>						
Information	-1,118 (-1.118)	-1,118 (-1.118)	-1,118 (-1.118)	-1,118 (-1.118)	-1,118 (-1.118)	-1,118 (-1.118)
Administration	-182 (-191)	-182 (-191)	-182 (-191)	-182 (-191)	-182 (-191)	-182 (-191)
Production	-15,106 (-15,789)	-30,930 (-32,329)	0 (0)	-15,106 (-15,789)	-15,106 (-15,789)	-15,106 (-15,789)
<i>Savings</i>						
Sickness leave	+7,015 (+10,273)	+7,015 (+10,273)	+5,915 (+8,663)	+7,015 (+10,273)	+9,458 (+16,342)	+3,508 (+5,136)
Inpatient care	+6,370 (+9,329)	+6,370 (+9,329)	+6,370 (+9,329)	+6,370 (+9,329)	+10,003 (+19,920)	+3,185 (+4,664)
Added survival	0 (0)	0 (0)	0 (0)	-1,073 (-2,516)	0 (0)	0 (0)
	-3,021 (+2,504)	-18,845 (-14,036)	+10,985 (+16,683)	-4,094 (-12)	+3,055 (+19,164)	-9,713 (-7,298)
<i>Health gains</i>						
Life years	575 (1,114)	575 (1,114)	575 (1,114)	575 (1,114)	575 (1,114)	288 (557)
QALYs	483 (936)	483 (936)	483 (936)	483 (936)	483 (936)	242 (468)
<i>Cost-effectiveness</i>						
Cost/life years	5 (-)	33 (13)	- (-)	7 (-)	- (-)	34 (13)
Cost/QALYs	6 (-)	39 (15)	- (-)	8 (-)	- (-)	40 (16)

It is demonstrated that, in the base case, costs minus savings implies a net cost of EUR 3,021 thousand (discounted values). The inclusion of consumption and production related to added life years increases the net cost to EUR 4,094 thousand, and an assumed effectiveness of 25 percent to EUR 9,713 thousand. Allowing for extended periods of savings generate a net saving at EUR 3,055 thousand. The upper limit is a net saving of EUR 10,985 thousand, which is established by the human capital method in combination with mean income. The lower limit is a net cost of EUR 18,845 thousand, which comes from the friction method combined with sex-diverse income.

Gained health is estimated at 575 life years or 483 QALYs in the base case (discounted values); while an assumption of 25 percent effectiveness (naturally) halves these estimates. When variants with net costs are combined with gained QALYs (both components discounted), it is shown that the highest cost-effectiveness ratio is derived in variant 6 (EUR 40 thousand per gained QALY), while the lowest ratio is the base case (EUR 6 thousand per gained QALY).

5. DISCUSSION

In this thesis it is suggested that societal decision-making should strive for a base of essential facts and explicit values. The opportunity of satisfying this idea from the perspective of women and men, and their health and socio-economic position, is discussed in the following. It begins with discussions by paper, and closes by two overall discussions.

5.1. Public health ethics by sex/gender – lack and need (paper I)

Lack of public health ethics – in particular regarding sex/gender

Judging fairness and change from the positions of women and men depends, inevitably, on the adopted normative view (paper I). This is widely recognised by philosophers and political scientists, as well as by economists. Nevertheless, ethical analyses – referred to as exploring the world by trying this or that principle and following out this or that line of reasoning – within the science of public health have been rare (Roberts & Reich, 2002; Richardson & McKie, 2005). Anand and Peter (2004) write that, during recent years, publications have appeared which deal with what they call public-health ethics; but that empirical and policy research has yet to be matched by research on the normative underpinnings of health equity.

My suggestion is that there are several probable reasons for the lack: public health strategies convey serious ethical dilemmas (e.g. respecting individual autonomy versus obligation to care; for the purpose of revealing my logic: advocates for different views are perhaps not equally represented in public health research), public health policy has been founded on shifting ethical rationales (e.g. from a state needing healthy people to asserting health as a human right), public health practice may be founded on one ideology (e.g. helping the worst-off) while public health ethics requires consideration of alternative views (e.g. helping the typical woman or man), etc. All these reasons for such a lack are, I believe, also reasons for strengthening the role of ethical analyses in public health.

The lack of ethical analysis is also evident regarding the gender system; I do not believe that simply asserting that women are subordinated and oppressed, and that this is wrong, fulfils the criterion of ethical analysis (although it is certainly a respectable ethical view!). Differences between classes have more frequently been tested against various principles of right and wrong, than differences between women and men. Why? Perhaps one reason is that the subordinated group (women) is in more disagreement about their position than subordinated groups usually are; some women say no gender inequities exist, some agree that the sexes should have similar value but for different reasons and activities, and some assert that women and men have the potential to be (very) similar. One's opinion is reasonably linked to one's view on the societal meaning of biological differences, which is more evident by gender than by other analytical categories (socio-economic groups, marital status, employed versus unemployed, etc.). Moreover, it may depend on the theoretical tradition from Plato, Rousseau, Kant, and onwards, in which the overall theme

has been: "... those [women] who do not possess the qualifications for fully ethical reasoning need not have principles of justice applied to them." (Okin, 1987, p. 44).

From this follows the evident: there is a lack of ethical analyses within the combined field of public health and sex/gender (e.g. Doyal, 2000). An illustration of this is, I would say, that only one article appears when searching for the combination of "health, welfarism, and feminism" in the database of PubMed: the first paper of this thesis. Probable reasons are the paradoxes (c.f. women live longer though subordinated in society and probably sicker) and intrigue issues (are men free to choose health-damaging behaviours? how much does biology matter?) involved. In addition, it would be naive to neglect impact from the male dominance in societal positions of power, i.e. the patriarchy.

During the process of the thesis, however, I came to understand that Tsuchiya and Williams worked with a similar theme. The point of departure in their paper named "A fair innings between the sexes: are men being treated inequitable?" (2005) is that women live longer, that men tend to have better health-related quality of life, and that women are best off in life-time prospects for health. After that, they identify 6 core issues that could be used to avoid the conclusion that men are getting an unfair deal in terms of health: the data is incorrect, the sexes are not members of the same community, the differences depend on biology, men have themselves to blame, the debate is unnecessary since women will before long adopt male ill-health, and finally, socio-economic status should be weighed against health (c.f. the normative rules for judging fairness within-state in the thesis). The conclusion by Tsuchiya and Williams is that the sex difference in health is an inequity, but that the male health inequity may be offset by other societal inequities in which women are disadvantaged. That is to say, their interpretation resembles the interpretation done from the extra-welfarist approach with equity regard (see Table 2), together with a possibly monistic view on life.

Defining health equity by women and men - difficulties and needs

According to Mooney (1987), clarifying what equity in health means, or should mean, is a difficult but important task. I agree. It seems pointless to simply assert a goal of 'gender equity in health', since it may, for instance, associate to all the normative theories that were included in the investigation of paper I: 1) reference to investments in female education and the like in order to increase the production of health and wealth links to welfarism, 2) reference to adding health by using gender-sensitive methods in research and practice ("women and men are different and have different needs") links to the extra-welfarist health approach, 3) reference to efforts aimed at equalising the division of health determinants such as education, wealth, power, freedom, security, etc. (i.e. health as a secondary outcome) links to a likely interpretation of the feminist criterion, and 4) reference to always favouring women, not because of their poorer health but because of their overall disadvantaged position, links to Rawls's conception of justice. That is, an ambition of gender equitable health must be explicitly combined with a specified ethical notion in order to make sense.

The main reason for postponing a commonly shared definition of health equity by women and men is most likely the different normative opinions among individuals engaged. However,

also the lack of factual evidence seems worth recognizing (although I insist that ethical reasoning is possible anyway); for instance regarding overall health status. My principal belief is that life-time QALYs is a good enough measure for the purpose of comparing female and male health, although my view on DALY is sceptical when it involves different life span potentials for women and men. My hesitation regarding both indices is that the weighting procedure aimed at the ill-health/morbidity dimension risks being gender biased. This lies in the very nature of a gendered society, and in particular, the finding that health notions are fundamental (and different) for feminine and masculine identities (e.g. Courtenay, 2000a). For now, people who know more about health indices must decide whether criticisms against them are serious enough for doubting a male disadvantage in overall health. Another evident lack regards the causes for health differences between the sexes; ultimately, the issue of the gaps remaining when gender is abolished.

If the aim is to develop a more common vision in public health by sex/gender, evidence on explicitly stated values would be helpful as well. The suspected hold for declaring that the female drawback in spheres like income and power should be rewarded in health makes it relevant to investigate preferences for indices combining health and socio-economic privileges. This links to the possibility of considering an extended social welfare function of several determinants of well-being, e.g. "life expectancy, real income and literacy levels" (Human Development Report, 2005) and "health, wealth and wisdom" (Williams & Cookson, 2000). In turn, this requires opinions on the vital components, on aggregating procedures, and on inequity aversion by component; for instance as it has been shown that the support for equity is stronger for health than for income (Yari & Bar-Hillel, 1984). Also knowledge about people's wishes to discriminate against the sex with less inherent health potential, and to consider conditions preceding ill-health, seems justified. Finally, the development of a commonly shared rule against which to judge interventions would require information on between-states views. Worth mentioning in this context is that preference for the feminist criterion links to refusing health interventions that fortify the gender system, and to accepting strategies that equalise the situation of women and men despite health drawbacks.

In sum, it seems rational to stress the importance of explicitness regarding normative view within the field of public health and sex/gender; and moreover, to call for additional empirical studies regarding facts and values.

5.2. Public health preferences – no common understanding (paper II)

The ethical analysis of health and socioeconomic position by women and men was followed by an explorative survey among public health workers (paper II).

Revealed preferences – mostly different than expected

Within-state views

Noteworthy is that a majority of the respondents declines to compensate between various aspects of health (health monism), and between health and other components (overall monism), when comparing women and men. This opposes the use of, and reference to, health indices like DALYs, QALYs, etc., and overall indices like the Gender-related Development Index, in research and policy. Moreover, most respondents refuse to consider history (earlier states of the world) when judging fairness of female and male health; they are content with information on end-points (the world at a particular state). The rejection to judge female ill-health as more unfair because of restricted free choice principally opposes various policy documents on equity in health (e.g. the proposal that health differences are inequitable when the degree of choice regarding the health-damaging lifestyles are restricted, Whitehead, 2000). On the other hand, the refusal to judge male excess mortality from alcohol, violence, and risk-taking as fair, on grounds of having themselves to blame, links to the public health notion of seeing health-damaging behaviours determined by socioeconomic factors (e.g. SOU, 2000:91; Public Health Policy Report, 2005).

As suggested in common definitions on equity in health (e.g. Whitehead, 2000; International Society for Equity in Health, 2005), the public health workers judge a female advantage in life span fair if it is assumed to be caused by an inherent biological advantage. However, the support for the principle of shortfall (versus attainment) is less than I had expected; almost 42 percent of the respondents seem to believe that men's possible drawback in inherent potential for living a long life should be compensated by society (for refined arguments regarding social versus natural inequalities from the perspective of equity, see Lippert-Rasmussen, 2004).

Of note is that no significant differences regarding within-state preferences were observed between female and male respondents. This harmonises, however, with results from other studies on ethical views by sex. Major, Bylsma and Cozzarelli (1989) show that female and male preferences of justice differ regarding work contexts but not regarding relationships, and Sweeney and McFarlin (1997) demonstrate that females concentrate on fair processes while men on fair outcomes, but that both sexes care for both dimensions. Jaffee and Hyde (2000) dismiss the common expectation about female support for ethics of care and male support for principles of justice, and Lee and Farh (1999) reveal a trend towards narrowing differences in the sexes' values.

Between-state views

Swedish studies have revealed a general support for trading-off average health in exchange for equalised health (Johannesson & Gerdtham, 1996; Andersson & Lyttkens, 1999), but these are not based on differences between women and men. Yet, the finding that slightly more than 70

percent reject health maximization is identical with the rejection demonstrated by Lindholm and Rosén (1998) based on socioeconomic groups. This androgynous attitude (in terms of wanting to equalise the gap between women and men in life span) among Swedish public health workers is quite remarkable since a British study demonstrates no support for increasing the shorter life expectancy of males as opposed to females (Dolan, Tsuchiya, Smith, Shaw & Williams, 2002). The difference between female and male views is also in accordance with the study by Lindholm and Rosén, although noticeable in the current study is the fact that women are willing to support a zero-gain among their own sex.

As gender equality has been a vital policy goal in Swedish modern history, it is not surprising that a general support for decreased, or eliminated, differences in life expectancy and income was found. However, the fact that more than half of the respondents support it, despite sacrificed health, is noteworthy (if public health workers are not advocates of extra-welfarism and health maximisation – who are?). Even so, we must bear in mind that it is not possible to generalize as the will to trade-off income and life span is dependent on the proposed levels (Lindholm & Rosén, 1998; Andersson & Lyttkens, 1999). Also in the section of gender equality versus other criteria, a stronger female support for equality is demonstrated. This is logical. Women ought to be most critical of the gender system which subordinates them in society, i.e. most supportive of equality principles when judging societal change between-states.

Logic answer patterns

The answer patterns among respondents demonstrated significantly expected relationships, with the exception of gender equality (instead of the Pareto criterion) and overall monism. A majority of the respondents who supported gender equality rejected compensation between health, power, influence and resources. Thus, from the commitment to feminism follows sympathy for securing fairness in separate spheres. But the opposite relationship cannot be predicted, i.e. support for the Pareto criterion in a particular context does not necessarily mean support for overall monism.

Drop-outs and strong reactions

The study has a large drop-out rate by question: 17.2 percent (first section), 19.2 percent (second section) and 21.6 percent (third section). An open question (“for those who would like to comment on issues in connection with the questionnaire”) ended the questionnaire, which was answered by 32.3 percent of the respondents. The comments may reveal reasons for the drop-outs, and moreover, contribute to future debate and analyses regarding the overall theme of the thesis. Hence, I choose to present below nine major categories of comments which appeared by keywords and proportions (with reference to open comments), together with typical comments for each of the categories.

Important and welcomed initiative (5.8 percent):

“Necessary, hope that this leads to a louder and in-depth public debate.”

“There ought to be more discussions about these issues in the everyday work. Opportunities to think and reflect in depth about standpoints ... it generates consequences on acting.”

Difficult – requires much reflection (12.2 percent):

“This was the most difficult survey I have ever confronted.”

“Very good questionnaire according to me. Difficult though worth considering.”

Too simplistic or hypothetical (9.3 percent):

“It is impossible to simplify in this way. The issue is far more complicated.”

“I would have preferred other alternatives. Equality in resource distribution to research about male and female pictures of morbidity. Similar treatment within health care, from ambulance care to (hopefully) hospital discharge. Knowledge about female symptoms connected to heart attacks and pain...”

Unnecessary or stupid (10.1 percent):

“Extremely stupid questions. Life is based on the content everyone puts into it. There are happy poor people as well as those with a short but happy life, independent of sex.”

“If this survey is a joke, which is easy to believe, I would like you to never contact me in similar issues ... Life expectancy is not an issue of justice. But the question about how to distribute resources in order to promote men’s and women’s health is.”

Concept of justice not relevant for health and gender (12.2 percent):

“I have not been able to complete this survey. I do not think that life expectancy and health have anything to do with justice and unfairness.”

“How is it possible to confuse issues of justice with a gender perspective?”

Quality of life – not life expectancy (6.7 percent):

“Personally, I prefer ... to live a better though shorter life. The fact that better is subjective does however not make it easier...”

“I believe that the importance is quality of life, and not the issue of how long one lives, for both sexes.”

Unethical to dichotomise/choose by sex (8.1 percent):

“... unpleasant. The most important for me is equal opportunities for both men and women.”

The questions are biased (11 percent):

“Besides, it would have felt better if the survey had been done by a woman AND a man. Bias already from the beginning?”

“I can imagine how the results will be manipulated so that they will fit your hypothesis”

This is how it is – various opinions (24.6 percent):

“It is okay that women live longer, children need their mother longer.”

“Successful women ought to show solidarity with exposed [women?] and not just compete for more salary.”

Some of the open comments indicate approval of the idea that it is important to further explore and discuss the issue of sex/gender differences in health and wealth from a perspective of justice. However, most of the comments point at different aspects of irritation. Gender is a warlike issue in general, and the context of public health seems to be no exception. Besides, “forcing” people to choose between ethical principles (a construction made; not as this is always required in reality, but as societal goals in harmony are uncomplicated from an ethical point of view) is by nature frustrating. Respondents who state that the questions are too simplified or hypothetical are naturally right, although I believe that refinement has a value in developing knowledge and understanding.

Many comments criticise the reference to the concept of fairness/justice in this particular context. The issue of ‘equity in health’ is commonly discussed and presumably accepted among Swedish public health workers. Thus, the main reason behind the denial is probably that the focus is on sex/gender. It may indicate a general support for ethics of care (i.e. that the concept of justice must be abandoned in order to benefit both sexes), and it may connect to an acceptance that health differences between women and men are biologically determined (i.e. unavoidable). In contrast to some respondents, I have difficulties in understanding how someone, who acknowledges the asymmetric dimension of gender, can reject the issue of unfairness in the same context.

There are also comments indicating a general objection to discussing health and fairness. This may be associated with the belief that health is a natural good, and hence, that it should not be considered in terms of social justice (e.g. Rawls, 1972). A quite frequent comment is that “life without quality is not worth living” and that (the female drawback) in morbidity and quality of life should have been more focused on. This is an important issue. I insist that income, which was used in the last section, represents a determinant for quality of life, but it is certainly not the only one. To some extent, I agree with the opinion that it is unethical to divide and demand choices between women and men, but my rationale – it risks cementing gender by normative signalling – is perhaps different from the respondents’ rationales.

The difficulty to comment on the comments about bias is in the nature of things. It is, and I am very aware of it, a normative (biased) act to select normative arguments for a survey; and my values may well have governed the respondents’ answers (although bias because of “solely females behind the survey” is not valid). Finally, respondents commenting that “we are wrong” and that “they know how it is” seem puzzling to me; but such statements can make sense if they are founded on actual policies.

Strengths, weaknesses, and future studies

The major strength of the survey is the contribution of empirical suggestions to what has hitherto been a fairly neglected area of research. First and foremost, however, the study should be seen as an explorative step towards future action.

Current survey

A probable weakness is that the respondents may have reported what they believed they ought to answer. Yet, the fact that both sexes can be seen as the worst-off group in this particular context hinders a self-evident marking of “politically correct” answers. Another probable weakness (some

would say) is that we do not know if the respondents answered from an individual or societal perspective. On the other hand, even if they had been asked to adopt a certain perspective, they could have been unable to report anything but individual preferences (some would say). One reason for caution when linking elicited preferences with public health reality is the lack of information on gender-stratified differences regarding formal (i.e. task and position), but also informal, influence on decisions. Moreover, the use of conference participants prevents inference to public health workers in general. As the respondents were selected based on their profession and as the findings are reasonable, the study may, nonetheless, indicate ethical standpoints in Swedish public health policy and practice.

I believe in more empirical research, by means of questionnaires and interviews, on ethical views within the field of public health from the perspective of women and men; e.g. for the purpose of clarifying and supplementing poorly formulated questions in the current survey. The questionnaire should have permitted a distinction between rejection of females being restricted in free choice, from rejection of relevance to fairness; and it should have acknowledged the opinion that males are the most restricted sex regarding health-related choices. Moreover, the support for shortfall versus attainment ought to have included compromised proposals, i.e. preferences to the attainment principle to a certain level of longevity and after that a conversion to the shortfall principle. I do also regret the lack of explorations regarding the dimension of health-related quality of life based on quantified estimates.

Additional ethical concerns

Besides improving the survey, there is most certainly a rationale for studying preferences regarding additional ethical concerns in future research on health and fairness based on women and men. I can imagine explicitly contrasting the claim for equality principles by state interventions and the claim of individual autonomy together with the minimal state by Nozick (1974). This links to another idea, namely willingness-to-pay (or accept) procedures, for retrieving welfare indications regarding a concrete example (why not the debated individualisation of the parental insurance?). I do also believe in returning to the original capability approach by Sen (1980) and in specifying health-related capabilities for individuals' freedom to choose from possible livings. Perhaps the basic human capabilities identified by Nussbaum (1999) may be helpful in this context, i.e. lifespan, bodily health and integrity, sexual integrity, senses and thoughts, emotions, conception of good life, contact with other human beings, contact with animals and nature, recreation, political and material control. Further, I tentatively suggest the use of thinking experiments, aimed at framing the decisional foundation, by egalitarian liberals like Rawls (1972) and Dworkin (2000).

I have also been thinking about the concept of procedural justice, and to what extent this was considered in the survey. Procedural justice concerns fairness of the process by which decisions are made, while distributive justice concerns fairness in the distribution of certain outcomes (health, rights, resources, etc.). Rawls (1972) distinguishes three ideas of procedural justice: 1) perfect procedural justice conveys a criterion for a fair outcome and a procedure that guarantees this outcome, 2) imperfect procedural justice conveys solely a criterion for a fair outcome, and 3) pure procedural justice conveys solely a criterion for a fair procedure. Another way of arranging

the issue is that procedures may be valued for improving outcomes (instrumental value) and for what they are (intrinsic value). In a recent study, Tsuchiya, Miguel, Edlin, Wailoo and Dolan (2005) examine support for six procedural characteristics in public health care: accuracy of facts, consistency of rules, impartiality of interests and biases, reversibility for affected parties, transparency in process and decisions, and opportunity for voice of concerned parties. Accuracy and consistency are judged most important, while transparency least important by the respondents. Moreover, a majority regard procedures as having only instrumental value, while around a quarter to a third regards them as having entirely intrinsic value.

Since some of the questions in the current survey consider past process, besides outcomes, I would say that procedural justice is touched upon. Yet, all questions convey an outcome statement, and the questionnaire is chiefly constructed in order to obtain views on distributive justice. Hence, the finding that people may well support procedures for, merely, what they are within the context of public health, makes further attention to procedural justice relevant.

Finally, in order to contribute with suggestions as to how society *should* prioritise and allocate resources, studies among a broader range of respondents are needed.

5.3. Towards gender equality – probable health trends (paper III)

The motive for examining how gender equality associates with health for women and men (paper III) was to improve the factual basis from which people judge fairness, and to better understand possible health effects of gender abolition.

Findings compared to hypotheses

The point of departure was that the parents' relative position and division of duties in the beginning of parenthood may affect factors like paid and unpaid work, risk aversion, use of alcohol and tobacco, eating habits, physical activity, divorces/separations, income development, societal status, etc., which in turn affect morbidity and mortality. For the purpose of simplifying the discussion of major results, regression analyses by merged categories of moderate and pronounced were performed. The odds ratios for females and males, after adjustments for age, income and absolute levels, are shown in Table 10 (traditional versus equal) and in Table 11 (untraditional versus equal).

Table 10 Traditional females/males versus equal females/males; summary of death and sickness findings by indicator of gender equality (95-percent confidence intervals)

	Females		Males	
	Traditional vs. Equal		Traditional vs. Equal	
	Death	Sickness	Death	Sickness
<i>Public sphere:</i>				
Income	0.70 (0.59-0.83)	0.72 (0.68-0.76)	0.96 (0.86-1.06)	1.00 (0.95-1.04)
Occupation	0.85 (0.68-1.05)	0.73 (0.69-0.78)	1.13 (1.01-1.27)	1.20 (1.14-1.26)
<i>Domestic sphere</i>				
Parental leave	1.50 (0.87-2.57)	1.02 (0.86-1.20)	0.82 (0.57-1.19)	0.92 (0.77-1.11)
Temporary care	1.10 (0.83-1.46)	1.08 (0.99-1.18)	1.44 (1.15-1.81)	1.22 (1.11-1.33)

From the public sphere it is summarised that traditional women (income and occupation) run lower risks of death and sickness than equal women, while traditional men (occupation) run higher risks than equal men (Table 10). That is, the hypothesis of convergence is supported for death; for instance by equal women entering health-damaging behaviours and spheres conventionally linked to men. The sickness findings could be explained by the stress hypotheses since among equal couples in income (n=13,522) only 0.6 percent were at once classified equal in both domestic indicators, and since among equal couples in occupational position (n=17,548) only 0.5 percent were entirely equal in domestic. That is, equal women in public may not have been released from, and equal men not stressed by, double-work.

The only significant finding from the domestic sphere is that traditional men (temporary care) have higher risks of death and sickness compared to equal men (Table 10). This supports the hypothesis of convergence for death (equal men enter health-protecting child care duties) and

the hypothesis of expansion for sickness (equal men add health-beneficial roles). By experience from paper IV, which indicates that paternity leave is beneficial below the level of 90 days, I dare to suggest the explanation of ill-health selection behind the opposite tendency regarding parental leave. That is, the equal category, measured by the late 1970s, may reflect something else than ambitions of gender equality (see below: Desired research from strengths and weaknesses). It is also indicated that traditional women have higher risks than equal women, which could reflect a released burden of harmful stress in the equal category, i.e. support for the stress hypothesis.

Table 11 Untraditional females/males versus equal females/males; summary of death and sickness findings by indicator of gender equality (95-percent confidence intervals)

	Females		Males	
	Untraditional vs. Equal		Untraditional vs. Equal	
	Death	Sickness	Death	Sickness
<i>Public sphere:</i>				
Income	1.00 (0.75-1.34)	1.03 (0.94-1.14)	1.06 (0.88-1.29)	0.54 (0.49-0.60)
Occupation	1.50 (1.14-1.97)	1.38 (1.25-1.51)	1.03 (0.84-1.26)	0.70 (0.64-0.77)
<i>Domestic sphere</i>				
Parental leave	2.00 (0.96-4.18)	1.67 (1.28-2.19)	1.08 (0.59-1.97)	1.27 (0.95-1.71)
Temporary care	1.08 (0.80-1.45)	1.25 (1.14-1.37)	1.29 (1.03-1.63)	1.06 (0.97-1.16)

Regarding the results from being an untraditional couple (female dominance in public and male dominance in domestic, Table 11), the expectations were open. The reasons for this were dual; they are hard to intellectually imagine (e.g. a man who feels forced to take on a conventionally female role may benefit in health, but he may also try to compensate a feeling of lost masculinity by increased alcohol-drinking, risk-taking, etc.), and they are likely to convey much ill-health selection. With the exception of income, women who act against the gendered tradition seem to have health disadvantages compared to equal women. The significant male results are that untraditional men in the public sphere have advantages in sickness, while untraditional men in temporary care have disadvantages in mortality. Yet, I insist that the risks among individuals who oppose the gendered tradition should be carefully interpreted, and first and foremost be used as tentative inputs to future research.

Health trends from being equal in all indicators

In order to suggest overall health trends from gender abolition, I have performed additional logistic regression analyses for traditional (pronounced and moderate) women/men in all indicators versus equal women/men in all indicators. The results (Table 12) demonstrate that simply one of the fully adjusted odds ratios is significant (female sickness) which should be seen from the perspective that only 61 couples fulfilled the criterion of “perfect equality” (see Table 5). Yet, keeping in mind the high statistical uncertainty, and considering the disparate rates of deaths (females 2.1 and males 4.4 percent) and yearly sickness leave (females 19 days and males 14 days) in the population, one may speculate about trends.

Table 12 Odds ratios adjusted for age, income and absolute levels; for entirely traditional versus entirely equal females/males and for death/sickness (95-percent confidence intervals)

	Females		Males	
	Death	Sickness	Death	Sickness
Equal all indicators	1	1	1	1
Traditional all indicators	0.33 (0.07-1.51)	0.46 (0.24-0.87)	1.46 (0.19-11.44)	0.73 (0.39-1.39)

It is indicated that entire traditional inequality versus entire equality may connect to lower female death risks (0.33) and higher male death risks (1.46). That is, equal women detriment and equal men benefit, which upholds the idea of convergence in mortality from gender abolition. Regarding sickness leave, being traditional associates to lower risks for both women (0.46) and men (0.73). That is, equal individuals, independent of sex, are worse off than couples in which the woman dominate in private and the man in public. In this context should be noted that sickness leave is not an uncomplicated measure of morbidity, despite the finding that it is mainly caused by ill-health (Marmot, Feeney, Shipley, North & Syme, 1995). It has for instance been proposed that sickness leave connects to pressures in working and personal life, coping patterns among employees, physicians' production of certificates, the insurance system and the level of benefit; and that it relates to unemployment, disability pension, and parental leave (Marklund, Bjurvald, Hogstedt, Palmer & Theorell, 2005). Further, it may both represent overestimated sickness (not having opportunity to adjust work) and underestimated sickness (working despite being sick).

The study reports that the relationship between gender equality and health is dependent on sex, life sphere (public/private) and type of inequality (traditional/untraditional). Yet, my overall suggestion is that the findings provide more evidence for the gendered explanation to the disparate health of women and men, than for the biological explanation.

Desired research from strengths and weaknesses

The major strength is that the study is quite original; I am not aware of earlier research aimed at examining health effects from gender equality defined as gender similarity by female/male and male/female ratios. This was made possible by the large set of individual data, which enabled the measure of gender equality by both public and domestic indicators and the measure of health by both mortality and sickness leave.

However, there are several weaknesses. A man who had ambitions of equality in the domestic sphere in 1978 was probably not stuck in a health-damaging masculinity (he would have a decreased health risk anyway), and a woman who at that time had ambitions of an equal division in the public sphere is perhaps not the most risk-averse woman (she would have an increased health risk anyway). The likelihood of impact from ill-health selection is indicated by the substantially higher risks among untraditional women in parental leave. This almost certainly reflects ill-health close to giving birth as it is rare that mothers have no/few days on parental leave. Since the data set does not hold information before the classification of gender (in)equality, the results could not be controlled for health related selection.

Moreover, the suggested explanations by the hypotheses of convergence, stress and expansion are solely tentative. They are based on earlier research which is (inevitably) different from the present study, and on unverified proposals of alterable health-related attitudes, behaviours and duties between the sexes. That is, the reason behind the indication of health benefits for both sexes in the domestic sphere may simply be that couples with ambitions of equality in domestic activity are more health-conscious in general than couples who strive for equality in public activity. Once more, the lack of data hindered analyses of safe and risk mechanisms operating between gender equality in the beginning of parenthood and subsequent health.

The utilisation of registry data conveys potential faults due to classification, registration, and cheating, which may have distorted the categories of traditional, equal, and untraditional, and hence, the results. One example holds for the indicator of income as individuals may have had undeclared incomes aside. Also occupational position may be questioned since it, in addition to difficulties of classification, involves ranking by dominance; for instance, routine (lower level) non-manuals were placed below skilled manual workers (in accordance to Eriksson, 1984), students were excluded, and self-employed and farmers were placed in the same group.

Further, in the studied period of gender equality, it was not possible to retrieve data on parental leave for a specific child; hence, the categorising may have been distorted since mothers usually take parental leave before fathers. Yet, it is impossible to tell whether this means surplus of female or male dominance in parental leave since data from 1978-1979 may convey information regarding children born before, and after, the child born in 1978. In addition, it was not possible to separate taking care of sick children from “daddy days”, which refers to the offer of 10 days on paid leave for recent fathers. The possible inclusion of daddy days is relevant for 6,618 of the couples (i.e. the couple had another child in 1980, and at least one of the parents received the benefit). Since both kinds of temporary child care tell about ambition of activity in the domestic sphere, the indicator was accepted. However, an additional weakness becomes evident when considering that 8.3 percent of temporary child care benefits among frequent recipients in 2004 was found to be incorrect in an inspection by the National Social Insurance Board (2004).

One may also entirely question the relevance of examining individual aspects of gender equality in a gender structured society. For instance, a man and a woman on parental leave will have different experiences of it as long as the man is ‘odd’ and the woman is ‘common’. And as Annandale and Hunt (2000, p. 21) state: “the social relations of gender... consists of more than movement in and out of social roles; and changes in the occupancy of certain roles and statuses may not mean the diminution of patriarchal privilege, but rather its continuation in new forms”. I agree. But it is also my belief that equality between the sexes in applied indicators constitutes prerequisites for abolishing the patriarchy in the long run.

Much of the above stated weaknesses are examples of what I believe should be addressed in future research about gender equality and population health.

Inevitable policy implications

The study does not aim at suggesting normative guidance, but it is not hard to imagine how the results may be used by advocates of various ideologies. For instance, the demonstrated increased death risk among women who are equal in the public sphere could allow someone to draw the conclusion that women ought to “stay at home”. Others would probably say that equality by income and occupational position has a value on its own, since it makes women more independent and influential in society, and in relation to their men. I was also surprised by the strong (normative) reaction from an anonymous reviewer: “The authors stick to their view that parental leave should be divided by researchers with no days dedicated to the mother. To me it is hostile to both the newborn child and the mother to say that a mother needs no days of recovery after birth and to the child to pretend that the father is a perfect substitute for breastfeeding. This is anti-feminism – in a disguise of gender equality.”

I am quite sure that the manuscript conveyed no ambition of suggesting how, for instance, parental leave is “best” divided from the general perspective of a mother, a father, or a child. But because of the likelihood that people draw normative conclusions from the study, I want to draw attention to the potential health benefits for both sexes from increased equality in the domestic sphere. That is, policies that stress a more equal division of child care are likely to be esteemed by both public health strivings and feminist justice as defined in the thesis.

5.4. Paternity leave – findings of (transferable) consequence? (paper IV)

The prime idea behind exploring the paternity leave reform (paper IV) was that it could reveal cost-effective alternatives to traditional public health work.

Relationships based on causality or selection?

In accordance with expectation, it was demonstrated that fathers who were on paternity leave in 1978-1979 had significantly lower death risks than fathers who were not. Paternity leave represents a departure from traditional masculinity, and is presumably linked to developing beings and doings more in accordance to the traditional female role. Hence, it is likely that paternity leave means decreased alcohol drinking, improved food habits, increased risk-aversion, etc., which affects mortality positively. Another possible reason for the decreased risks among men on paternity leave is healthy expansion of life roles.

In the possible link between paternity leave and health indirect conditions like divorce, number of children, later paternity leave, income development, etc. are also included. For instance, research has demonstrated that couples where the father takes paternity leave are more stable than other couples (Oláh, 2001), and that lone fathers have increased mortality risks compared to cohabiting fathers (Ringbäck Weitoft, Burström & Rosén, 2004). Thus, the finding that men who took paternity leave were more likely to cohabit with the mother in 1985, supports the idea of operating causal mechanisms. Another finding indicating that paternity leave may have led to health-related change is the dose-effect pattern from 5 percent (>10-20 days) to 29 percent (>60-90 days), i.e. risk decreases in accordance with the amount of leave.

Yet, the demonstrated relationship between paternity leave and health does most certainly reflect health-related selection as well. Men who had the ambition of being absent from work for paternity leave in the late 1970s may have had lower death risks even without paternity leave. The data set does not permit the examination of mediating mechanisms (besides co-habitation and education), and it lacks information about the fathers before 1978. Hence, future research on the subject should include efforts to explore explaining factors between paternity leave and health outcomes like smoking, alcohol drinking, food habits, risk-aversion, work conditions, income development, etc., as well as controls for health selection by measures on e.g. health-related behaviours and various kinds of health-care before the occurrence of paternity leave.

Costs, savings, and health gains – an acceptable cost per QALY?

Costs and savings

The range of costs minus savings is wide; from a net cost of EUR 19 million to a net gain of EUR 11 million, and in between the base case cost of EUR 3 million (discounted values). Next to the level of effective fraction, the variations depend mostly on how production losses/savings are quantified and valued. It should be noted that there is still a debate about whether productivity changes should be included in health economic evaluations, and in addition, about which methods to use (Sculpher, 2001; Drummond, O'Brien, Stoddart & Torrance, 2005). A general

criticism against the human capital method is that it does not represent reality, for instance, as long periods of involuntary unemployment are valid for most countries. Estimates by this method may therefore represent the potential value of production loss due to illness (and parental leave), rather than the actual loss. However, the unemployment rate in Sweden in 1978-1979 was low (about 2 percent), i.e. there was probably not a pool of people who could recover production after, say, three months of parental leave. The base case of production losses due to parental leave, and of savings due to decreased sickness leave, is calculated by sex-diverse income, i.e. it was admitted that men produce more of societal value than women. However, the variant in which mean income was utilised is, indeed, justified; by gender equality reasoning ("women's lower income should not be used to distort the division of parental leave"), health equity reasoning ("men's higher income should not be used to attach relatively more value to added male health") and rational reasoning ("the sexual difference in income does not characterise the true difference in women's and men's productive value").

A general objection against considering savings related to increased production is that they may be included in the values of improved health. This is relevant in cost per QALY ratios and cost-benefit analyses; unless individuals are told not to value return to work in utility or monetary terms (Drummond et al., 2005). Our estimates of QALYs are based on interviews in which this instruction was not given to the respondents; i.e. the cost-effectiveness ratios may comprise some double-counting of values related to work. Another probable flaw in the cost-effectiveness ratios is founded on the inevitable lag between noticing an over-capacity in health-care settings and adapting to this circumstance. Yet, as politicians and hospital managers have a duty to decrease the time lag, and as the applied period was two decades, it seems reasonable to treat the decreased need of inpatient care as a saving.

Potential health gains among mothers and children

The estimates of gained health are restricted to fathers, but the conversion from a maternity to a parental insurance system may have affected the health of mothers and children as well.

There are at least two possible, though opposite, hypotheses, regarding the relationship between paternity leave (assumed to inter-connect with less maternity leave) and maternal health. First, women who share parenthood with men on paternity leave may lose some of their health-protecting incitements, i.e. adopt health-damaging attitudes and behaviours traditionally associated with men. Second, paternity leave may reflect continued paternal responsibilities in the domestic sphere, and thus, a long-lasting release from stressful double-work among mothers. In order to check if the health gains considered in the analysis seem to be over/under estimated, the regression analyses were performed also for women. The summarising odds ratio adjusted for age, income, education and country of birth demonstrates a lower death risk of 18 percent among mothers who connect to fathers who took paternity leave versus other mothers (i.e. odds ratio of 0.82 and a 95-percent confidence interval of 0.67-0.99). This supports the explanation of reduced fatal stress among women, and indicates that the reform may have benefited female health as well.

The data set lacks information about the children, but an evident reflection is that paternity leave may hinder breast-feeding, which is established to be good for child health (Bick, 1999).

However, the levels of paternity leave seen, in combination with the overall entitlement of 270 days, do not for the most part threaten, for instance, the present WHO recommendation of 6 months. Another risk regarding children is based on the fact that men are more violent than women in general, i.e. it is possible that child abuse increases when fathers take parental leave as acknowledged by, for instance, Engle (1997). Yet, she also emphasizes that the caring and emotional involvement of fathers during early childhood is crucial for children's intellectual, social, and emotional development. The particular finding that paternity leave associates with capacity of solving problems and social skills among infants is reported by Pruett (1988). The foundation in a recent evaluation of the Swedish parental insurance system (SOU, 2005:91) is that an equalised parental leave is good for children's well-being. Moreover, children to fathers on paternity leave in present study were less likely to lose a parent in premature death. A reasonable suggestion is that the reform mostly benefited child health.

Cost-per-QALY

The possibility to attach a monetary value to a QALY for societal decision-making is debated (e.g. Smith and Richardson 2005, Gyrd-Hansen 2005); and moreover, proposed valuations differ. For instance, the value of about EUR 80,000 is utilised in a study about the health of the US population (Cutler & Richardson, 1998), while Newhouse (1998) reports a value of approximately EUR 48,000 on average from surveys among several health economists. These levels have been rejected by, for instance, Williams (2004), who suggests that an acceptable cost per gained QALY should be considered in the light of actual health care spending and that the upper limit should be set at GNP per capita. For the Swedish setting, this implies a threshold value of about EUR 30,000. In a report from the National Board of Health and Welfare (2004), the range between EUR 11,000 and EUR 54,000 is stated to represent a reasonable cost per gained QALY in Sweden.

The base case of the health economic analysis reflects a well below acceptable cost per gained QALY of EUR 6,000. As the results were not controlled for health-related selection, it is only possible to state that even an effective fraction of 25 percent regarding savings and health gains, makes the parental insurance reform cost-effective. That is, since also the cost of EUR 40,000 per gained QALY is sanctioned by commonly referred valuations and guidelines.

Strength and transferability

The major strength regarding the paternity leave study is the data set which permits the examination of paternity leave among an inclusive set of fathers in the late 1970s, together with deaths, sickness leave, and inpatient care, during next two decades. Thus, the contribution of empirical suggestions to what has hitherto been much of an area of supposition was made possible ("if men become more like women, they will live longer"). The weaknesses have been consecutively commented on; most important is that health selection was not controlled for, and hence, cost-effectiveness had to be illustrated by set effective fractions. In addition, one must question the possibility of transferability.

Sweden has seen an upward trend of paternity leave, and one explanation is most likely the non-transferable reservation of a certain number of days to one parent (in practice the father);

initially 30 days (from January 1995) and at present 60 days (from January 2002). A hotly debated political issue is whether the current reservation should be extended; ultimately to half of the entitled period.

One difficulty associated with transferring the findings to the present Swedish context is how the almost doubled period of parental entitlement (480 days from January 2002) should be considered. It is possible to adopt the view that it is the absolute level of paternity leave that determines health, but it may also be the relative level of paternity leave versus maternity leave that matters. I believe mainly in the latter, i.e. a decreased death risk of 24 percent (seen in the category 30-60 days) would perhaps require 60-120 days of paternity leave at present. Another issue is the value of production loss due to paternity leave instead of maternity leave. The female to male ratio in income was 0.72 in 2003, compared to 0.57 in 1980 (Statistics Sweden), i.e. the societal costs would be lower nowadays by the assumptions made in the base case. On the other hand, the rationale for using the friction method, which generally implies higher costs for shared, than unshared, parental leave, is stronger today as the level of unemployment is higher (5.3 percent in December 2004). A final comment regarding transferability within Sweden is that fathers who took paternity leave in 1978-1979 were pioneers, and this may have connections to both health advantages (e.g. feeling of exclusiveness) and health disadvantages (e.g. stress from being and doing against the gender tradition) compared to recent fathers on paternity leave.

The complications when transferring the results to other settings are even greater. In many parts of the world, paternity leave is still a long way off due to legal and cultural constraints. Moreover, the scope for offering paid parental leave may be beyond the realm of existing resources. However, as consequences may be followed from relative rather than absolute levels, also minor advances in paternity leave could imply health gains in several countries.

5.5 Feminism and public health – harmony and conflict

The thesis has in several aspects given special attention to the accord/disaccord between feminist justice and health sector extra-welfarism. In paper I is written that men may benefit most health from feminist strivings in several countries and at present state of gender equality, and moreover: “It would be a pity if this ‘repulsive effect’ on health distribution (as seems to be a rather widespread opinion) counteracted the possibility to promote a future without gender – according to our perception, the only future that could really compete for full human justice” (Månsdotter, Lindholm & Öhman, 2004 p. 362). I may regret these formulations today; it was unnecessary to take such a clear normative position, and paper II revealed that this is presumably not a widespread opinion. Moreover, it was proposed that strategies aimed at abolishing gender are likely to be effective tools for overall health improvements. By means of experiences from paper III and IV, and from a study on Swedish municipalities in which we found that gender equality was correlated with poorer health for both sexes (Backhans, Månsdotter & Lundberg, submitted 2006), I would like to revise this proposal.

My suggestion is that effects on population health from, what seems to represent a typical process towards gender equality are more likely to be seen in phases. Initially, there are undoubtedly health gains among women, men, and children, by improved female basic rights regarding reproduction, nutrition, education, influence, etc. At a certain level however, if improved gender equality solely means that women continue to enter traditionally male spheres, we are likely to see diminishing gains, or losses, in population health; for instance, by excessive burdens and role-conflict among women, while continued health-damaging lifestyles and too few roles among men. The continuation of male lifestyles linked to violence, risk-taking, and alike, represents a special issue as they threat not only men themselves, but also women and children. Then again, if further steps means that men accept to adopt attitudes, behaviours, and areas traditionally linked to women, the curve of health benefits are likely to raise again.

Hence, it is my belief that we can expect both ethical harmony and conflict between frequent feminist and public health goals along the process in which females enter male domains before the opposite take place. This is indicated by the findings in paper III and IV, i.e. Swedish strivings towards gender equality in the late 1900s seem to have caused both health gains and losses, and succeeding health benefits among both sexes may require strengthened equality ambition in the domestic domain. Regarding the long-term effects on the level of health from gender abolition, I am inclined to support Okin’s idea that it will have positive (health) effects for all of us by its impact on global policies and practices.

In paper I, it was also cautioned against making females the victims of health in Western countries (for a recent picture of female health in the developing world, see Grown, Gupta & Pande, 2005); because they appear not to be by overall measures, and because this brand may represent a more or less conscious tool for fortifying the gender system, i.e. the subordination of women. Benatar (2003) suggests that men’s apparent contentment with their position should not be taken as evidence that they are never victims. I agree, and suggest that explicitly branding males as health victims could also provide scope for less health-dangerous life forms and loosened privileged positions among men in the future.

5.6. How to judge fairness and change from the paternity leave reform

The final step, before concluding the thesis, is to illustrate judgements of fairness and change by means of the paternity leave reform in 1974. This is done from the investigated normative rules and from elicited public health views. In addition, my own ranking of ethical principles will be presented.

The Swedish situation of women and men – fair now and then?

The principles aimed at within-state judgements of women and men have been considered in the light of how to compare and judge fairness in state 1, state 2, etc. That is, they do not necessarily provide an overall conclusion about whether the world is fair, or whether it is unfair to women, men, or both sexes. For this purpose, one may use normative theories aimed at judging change from one state to another, together with their claims on how to compare the sexes and their conclusions of fairness (see Table 2). The extra-welfarist health equity approach says the world is *unfair to men*, the egalitarian approach says the world is *unfair to women*, and the feminist approach says the world is *unfair to both females and males*. On the contrary, common welfarism *does not permit comparisons* from the positions of women and men, while mainstream extra-welfarism *does not take a stand*.

We know that in Sweden today, women live longer than men, while men have more power, influence and resources than women. Further, the survey among public health workers reveals support for considering equality in the extra-welfarist approach, and for the feminist criterion of equality between the sexes in life span (c.f. overall health) and income (c.f. socioeconomic privileges). In addition, the preferences regarding how to judge fairness is primarily: support for considering equity in separate spheres, rejection of considering past procedures regarding free choice and self-blame, and support for considering differences in biological potentials (i.e. equity by shortfall).

My conclusion from combining 1) the normative rules for between-states judgements added with their claims on within-state judgements, 2) the factual situation, and 3) the revealed ethical views, is that *consulted public health workers judge the present situation as unfair to both women and men*. Moreover, since the situation in the beginning of the 1970s was similar (although other levels of life span, income, etc., and thus other absolute/relative differences), *the public health view provides a retrospective claiming of the reform which permitted fathers parental leave in 1974*.

Was the right to paternity leave in 1974 a satisfying reform?

Broadening the range of consequences and normative rules

The study on costs, savings, and health gains regarding the paternity leave reform in 1974 represents a partial evaluation, i.e. it was performed within the normative context of improving health for a reasonable cost. Below, I speculate about a broader range of societal consequences and ethical principles aimed at judging change.

First, the only certain effect from the reform of permitting paternity leave is that it increased equality between the sexes in the sphere of parental leave, which is most likely linked to increased equality in the family sphere, i.e. *the feminist criterion is satisfied*.

The cost-effectiveness analysis demonstrates that even an applied effective fraction of 25 percent regarding savings and health gains makes the right to paternity leave a cost-effective reform, i.e. *the extra-welfarist criterion of health maximization is probably satisfied*.

For the purpose of examining the reform's probable consequences on the health difference between the sexes, I calculated health gains among mothers in a similar way as health gains among fathers (see calculations of gained health in sections 3.4 and 4.4): 1) in 1993, average remaining life expectancy for Swedish women at the age of 43 was 39.01 years, 2) remaining average QALY weighting for a woman at the age of 43 was approximated at 0.81, and 3) the odds ratio of 0.82 implies 42 saved female lives. From this follows, that the probable female health gain was 372 life years and 301 QALYs by assuming an effectiveness of 50 percent (discounted estimates). Swedish men have fewer life time QALYs than women (Gerdtham & Johannesson, 2000) and the findings suggest higher male than female health gains (483 versus 301 QALYs), i.e. *the extra-welfarist criterion of equity regard in health is probably satisfied*.

Some women and men would most certainly assert that they lost welfare as a result of the conversion of the maternity insurance to a parental insurance system (e.g. mothers who felt they were forced to transfer parental leave to the fathers, and fathers who felt guilty for not making use of the entitlement), i.e. *the welfarist Pareto criterion is probably not satisfied*.

It is possible to transform the male health gains to utility gains by accepting that a QALY is worth (say) EUR 30,000 (c.f. Burström, Johannesson & Diderichsen, 2003). This implies an added net welfare of EUR 14,315 thousand (effective fraction of 50 percent, discounted estimate), which exceeds the base case cost of EUR 3,021 thousand. It has also been indicated that the reform meant health gains, and hence utility gains, among mothers and children connected to fathers who took paternity leave. Moreover, as the health gains seen may come from reduced alcohol drinking, risk-taking and violence, it is also possible to assume positive externalities linked to reduced anxiety, reduced health care costs, etc. among other men, women and children. I suggest that the welfare gain from health improvements may exceed the (most certain) welfare loss from other societal consequences, i.e. *the welfarist criterion of maximisation is probably satisfied*.

A likely interpretation of Rawls' theory is that women are the worst-off sex, and hence, should be favoured in the societal distribution of primary goods and health. My belief is that the reform implied liberty, opportunity, income, wealth, and social bases of self-respect among women, and it was shown that women are likely to benefit in health as well, i.e. *the criterion of justice as fairness is probably satisfied*.

Fathers on parental leave threaten the institution of a traditional family in which infant care is an activity of women, i.e. *the conservative notion is probably not satisfied*.

Opinions by public health workers

The reform of permitting paternity leave is probably satisfied by five out of seven criteria for judging societal change; there seem to be neither an ethical conflict between maximising and equalising health, nor between widespread feminist and economic goals. A logical next step would

be exploration of guiding preferences for normative theories and criterions, but this is not considered in the thesis. I am restricted to conclude that *consulted public health workers are likely to judge the reform as satisfying*, since it seems to have decreased life span difference between women and men, and is likely to have contributed to diminishing income differences.

My own ethical views

I have tried to illustrate alternative ethical reasoning from the positions of women and men. It is possible to say that I as engaged in ethics should keep my own values for myself, but also, that I as such have a responsibility to take clear moral position (see Clouser, 1997; Sherwin & Baylis, 2003). The reason for explicitly presenting my ranking of values (some of which, I know, are already implicitly revealed) is that it may contribute to questioning analyses and writings in the thesis, i.e. it seems “fair” to do so.

If I had to choose between the considered normative theories aimed at judging change from the outlook of today's Western world, I would rank the feminist criterion highest. One reason is that I do not believe that burdens and benefits should be unequally distributed by sex per se. Another is my belief that strivings towards a society of similarity between the sexes may, from an extended horizon of time, harmonise with welfarist and egalitarian goals as well. From taking this position, it follows that I would reject the application of a monistic view on life when judging fairness of a particular situation. When a society of feminist justice is achieved, the ideas of equity as choice and ethics of care would have become irrelevant from the perspective of women and men; simply since differences in past processes would be eliminated. In the meantime, I would give preference to considering earlier states when judging fairness in outcomes. My principal belief is that a natal potential for living a long and healthy life does not make a factual advantage fair. That is, attainment equity would be ranked before shortfall equity, although I could consider a compromise between these principles.

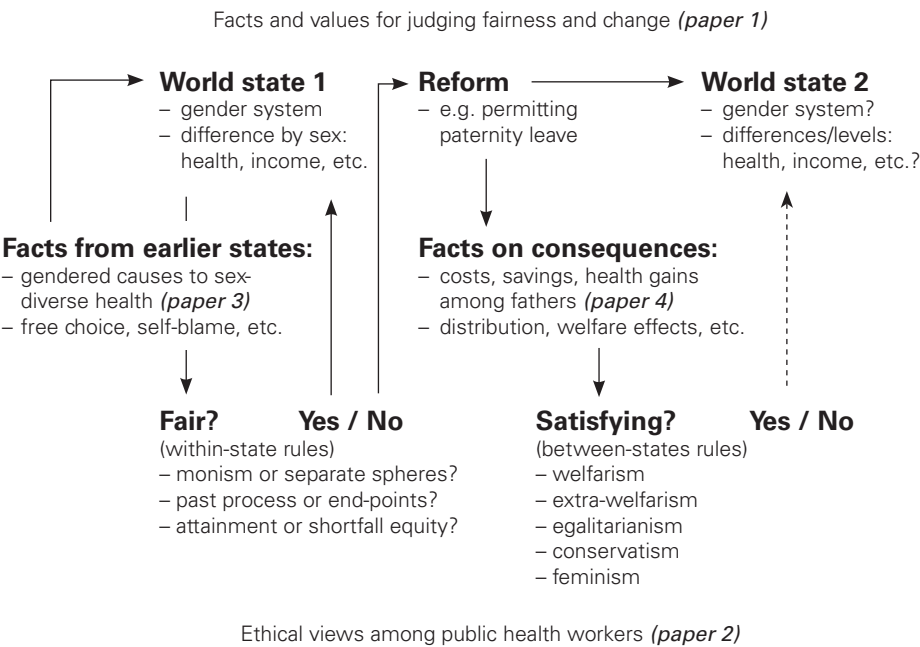
From the discussing part of the thesis it is summarised that there seems to be potential for improving the societal decision-making founded on the disparate health and socio-economic position of women and men. That is, to draw conclusion from a broader range of facts and from more explicit normative underpinnings.

6. CONCLUSIONS

6.1. A framework for judging fairness and reform by women and men

I have tried to illustrate the steps from observing and judging fairness from a particular situation of women’s and men’s health, wealth, etc., via possible demand of a reform, to conclusions about whether the resulting change is satisfying. By contributions from theoretical and empirical studies, a suggested framework (see Introduction) for societal process from the positions of women and men has been further developed. Paper I provides possibly relevant facts and normative rules for public health by sex/gender, paper II indicates one set of views regarding how to judge fairness and change from women and men, paper III proposes how gender (parental) similarity in the main life spheres affects female and male mortality/morbidity (which, for instance, contribute to within-state judgements), and paper IV points at costs and benefits associated with the paternity leave reform (which contribute to between-states judgements). In Figure 2, a developed version of the suggested framework for societal process is presented; the additions refer to key concepts and contributing papers. I now call it a *public health framework for judging fairness and reform by women and men*.

Figure 2 A public health framework for judging fairness and reform by women and men



6.2. Conclusions – by paper and main points

The ethical analysis (paper I) demonstrates that the normative theories of welfarism, health sector extra-welfarism, egalitarianism, and feminist justice, assert different claims on how to compare women and men in a particular state of the world. Moreover, their various ethical criteria for judging change between states are likely to imply diverse conclusions about priorities and resource allocations, despite identical facts regarding health and socio-economic consequences. There is a lack of ethical analyses in public health from the perspective of women and men. Further, the postponing of a commonly shared meaning of equity in health by sex/gender depends reasonably on diverse ideologies, and on missing empirical data about facts and values. Special attention regarding harmony and conflict between feminism and public health is rationale since short-range health goals at the expense of cementing gender may detriment population health in the long run. The gains from more explicit standpoints in research, policy, and practice, ought to exceed the many tricky issues involved.

From the survey among public health workers (paper II) is concluded that there is no common understanding about health, wealth, and fairness, from the positions of women and men. Apparently accepted notions among researchers and policy-makers (belief in health/overall monism, equity as choice, and health maximization) are rejected by a majority of the respondents; and more than forty percent do not accept that an inherent female advantage in life span would make a factual advantage fair. Notable is also the fact that equality between the sexes in life span and income was mostly supported despite overall health losses. The findings may be explained by variations in understandings (e.g. to what extent are individuals free to choose?), which lends support to additional research and exchange of views. Women and men are quite similar when judging the current situation, but differ considerably when judging societal change. Another issue needing attention is thus why the link between within-state and between-states opinions varies by sex, and whose preferences actually guide reality.

The epidemiologic study on gender equality and health (paper III) reports that the relationship between these two entities depends on sex, life sphere (public/domestic), and inequality type (traditional/untraditional). On the other hand, similar trends are demonstrated for death and sickness. From the public sphere it is shown that traditional women run lower health risks than equal women, while traditional men tend to run higher health risks than equal men. An overall indication from the domestic sphere is that both sexes may gain health from acting equally versus traditionally. In order to understand the findings, the idea of convergence in health from gender similarity ought to be supplemented with the hypotheses of stress (several roles detriment health) and expansion (several roles benefit health). One conclusion is that the gendered explanation to the sex gap in life span is more strengthened than the biological explanation. Another is that the Swedish road towards gender equality in every sphere of life (gender abolition) in the late 1900s century seems to have caused both health gains and losses.

From the study on entitling fathers to parental leave in 1974 (paper IV) it is reported that men who took paternity leave have lower death risks than men who did not. This supports the proposal that taking care of infants may lead to decreased health-damaging beliefs and behaviours among men. However, the results are not controlled for impact from health-related selection, and

the data set does not permit examinations of factors operating in the link between paternity leave and health outcomes. The cost-effectiveness analysis of the paternity leave reform is calculated by set assumptions of effectiveness, and shows that even an effectiveness of 25 percent regarding savings and health gains offers an acceptable cost per QALY from the societal perspective.

The closing illustration of judging fairness and reform shows that the implementation of the parental insurance system in 1974 is likely to be approved of according to commonly stated public health, economic, and feminist goals. Moreover, it is my interpretation that the consulted public health workers would have justified the implementation of it, and welcomed the consequences from it.

A public health framework for judging fairness and reform from the positions of women and men could look as follows: 1) identifying relevant facts from a particular state and earlier states of the world, 2) asking whether the situation is fair/acceptable or not by various ethical within-state rules, 3) claiming or refusing change, 4) identifying relevant consequences from possible reform, 5) considering whether the change was satisfying or not by various ethical between-states rules.

There is a lack of ethical analyses in public health from the perspective of women and men; this is problematic as the choice of normative theory is decisive for judging fairness and reform, and as it may hamper long-term health decisions.

There is no common understanding about fairness and health/wealth from the positions of the sexes; this lends support for more research and exchange of ethical views, e.g. since females and males differ considerably in judging satisfying change.

Women are likely to lose health by being equal in solely the public sphere, while equal men tend to gain health; increased similarity between parents in the domestic sphere may benefit both sexes' health in the Swedish state of gender (in)equality.

The permission of paternity leave in 1974 is a possibly cost-effective reform in terms of health improvements; more information is needed to tell whether welfarist and egalitarian criterions, besides feminist justice, would sanction the ultimate step, i.e. an individualisation of the parental insurance system.

6.3. Final remarks

I suggest that the learning of David Hume – one cannot derive ‘ought’ from ‘is’ – is indeed important when handling fairness and change from the positions of women and men. Another lesson learnt is that society may gain from strengthened interaction between the sciences and practices of public health, economics and feminism. For instance, public health advocates may find effective actions from feminist thought, economists may discover welfare arguments from public health policy, and feminists may gain influence by adopting public health and economic measures. The thesis does not, however, suggest a particular action when the leading normative rules in the three territories clash; simply that they will at intervals.

References

- Anand, S. & Hanson, K. (1997) Disability-adjusted life years: a critical review. *Journal of Health Economics*, 16, 685-702.
- Anand, S. & Sen, A. (1995) *Gender inequality in human development: theories and measurement*. Harvard Centre for Population and Development Studies, Working Papers Series, number 95.05.
- Anand, S. & Peter, F. (2004) Introduction. In: S. Anand, F. Peter & A. Sen (eds.), *Public health, ethics, and equity* (pp. 1-12). New York: Oxford University Press.
- Andersson, F. & Lyttkens, C. H. (1999) Preferences for equity in health behind a veil of ignorance. *Health Economics*, 8(5), 369-378.
- Annandale, E. & Hunt, K. (2000) Gender inequalities in health: research at the crossroads. In: E. Annandale & K. Hunt (eds.), *Gender inequalities in health* (pp. 1-35). Buckingham: Open University Press.
- Backhans, M., Månsdotter, A. & Lundberg, M. (2006, submitted) *Does increased gender equality lead to convergence of health outcomes? A study of Swedish municipalities*.
- Barnett, R. C., Marshall, N. L. & Pleck, J. H. (1992) Men's multiple roles and their relationship to men's psychological distress. *Journal of Marriage and the Family*, 54, 358-367.
- Barnett, R. C. (2004) Women and multiple roles: myths and reality. *Harvard Review of Psychiatry*, 12, 158-164.
- de Beauvoir, S. (1949) *Le deuxième sexe*. Paris: Editions Gallimard.
- Benatar, D. (2003) The second sexism. *Social Theory and Practice*, 29(2), 177-210.
- Bick, D. (1999) The benefits of breastfeeding for the infant. *British Journal of Midwifery*, 7, 312-319.
- Birch, S. & Donaldson, C. (2003) Valuing the benefits and costs of health care programmes: where is the 'extra' in extra-welfarism? *Social Science and Medicine*, 56, 1121-1133.
- Brouwer, W., Rutten, F. & Koopmanschap, M. (2001) Costing in economic evaluations. In: M. Drummond & A. McGuire (eds.), *Economic evaluation in health care – merging theory and practice* (pp. 94-112). Oxford: Oxford University Press.
- Burström, K., Johannesson, M. & Diderichsen, F. (2001) Health-related quality of life by disease and socio-economic group in the general population in Sweden. *Health Policy*, 55, 51-69.
- Burström, K., Johannesson, M. & Diderichsen, F. (2003) The value of the change in health in Sweden 1980/81 to 1996/97. *Health Economics*, 12(8), 637-654.
- Clouser, D. (1997). Medical ethics: some users, abuses and limitations. In: N. Jecker, A. Jonsen & R. Pearlman (eds.), *Bioethics: an introduction to the history, methods and practice* (pp. 93-100). Boston: Jones and Bartlett Publishers.

-
- Connell, R. W. (1987) *Gender and power*. Cambridge: Polity Press.
- Courtenay, W. H. (2000a) Engendering health: a social constructionist examination of men's health beliefs and behaviors. *Psychology of Men and Masculinity*, 1(1), 4-15.
- Courtenay, W. H. (2000b) Constructions of masculinity and their influence on men's well-being: a theory of gender and health. *Social Science and Medicine*, 50, 1385-1401.
- Culyer, A. J. (1980) *The political economy of social policy*. London: Martin Roberson.
- Culyer, A. J. (1989) The normative economics of health care finance and provision, *Oxford Review of Economic Policy*, 5, 34-58.
- Cutler, D. M. & Richardson, E. (1998) The value of health: 1970-1990. *The American Economic Review, Papers and Proceedings*, 88, 97-100.
- Daniels, N. (1985) *Just health care*. Studies in philosophy and health policy. London: Cambridge University Press.
- Daniels, N., Kennedy, B. & Kawachi, I. (2004) Health and inequality, or, why justice is good for our health. In: S. Anand, F. Peter & A. Sen (eds.), *Public health, ethics, and equity* (pp. 63-91). New York: Oxford University Press.
- Danielsson, M. (2000) Jämställdhet och mäns medellivslängd [Equality between the sexes and men's average life expectancy]. *Kvinnovetenskaplig tidskrift*, 2-3, 19-44.
- Dolan, P., Tsuchiya, A., Smith, P., Shaw, R. & Williams, A. (2002) *Determining the parameters in a social welfare function using stated preference data: an application to health*. Sheffield Health Economics Group, University of Sheffield, Discussion Paper Series 02/2.
- Dolan, P., Olsen, J. A., Menzel, P. & Richardson, J. (2003) An inquiry into the different perspectives that can be used when eliciting preferences in health. *Health Economics*, 12(7), 545-551.
- Doyal, L. (2000) Gender equity in health: debates and dilemmas. *Social Science and Medicine*, 51, 931-939.
- Drummond, M. F. (1990) Allocating resources. *International Journal of Technology Assessment in Health Care*, 6, 77-92.
- Drummond, M. F., O'Brien, B., Stoddart, G. L. & Torrance, G.W. (2005) *Methods for economic evaluation of health care programmes* (third edition), Corby Northants: Oxford University Press.
- Dworkin, R. (2000) *Sovereign Virtue. The Theory and Practice of Equality*. London: Harvard University Press.
- Ekman, M. (2002) *Studies in health economics: modelling and data analysis of costs and survival* (II, p. 38). Dissertation. Economic Research Institute, Stockholm School of Economics.
- Engle, P. L. (1997) The role of men in families: achieving gender equity and supporting children. *Gender and Development*, 5(2), 31-40.

- Eriksson, R. (1984) *Social class of men, women and families*. Swedish Institute for Social Research, Reprint series no. 124.
- Esping-Andersen, G. (1990) *The three worlds of welfare capitalism*. New Jersey: Princeton University Press.
- Ferrarini, T. (2003) *Parental leave institutions in eighteen post-war welfare states*. Dissertation. Swedish Institute for Social Research, Stockholm University.
- Gerdtham, U. G. & Johannesson, M. (2000) Income-related inequality in life-years and quality-adjusted life-years. *Journal of Health Economics*, 19, 1007-1026.
- Gilligan, C. (1982) *In a different voice: psychological theory and women's development*. Cambridge: Harvard University Press.
- Gold, M. R., Siegel, J. E., Russell, L. B. & Weinstein, M. C. (1996) *Cost-effectiveness in health and medicine*. New York: Oxford University Press.
- Goode, W. J. (1960) A theory of role strain. *American Sociological Review*, 25, 483-496.
- Grown, D. C., Gupta, G. R. & Pande, R. (2005) Taking action to improve women's health through gender equality and women's empowerment. *Lancet*, 365(9458), 541-543.
- Gyrd-Hansen, D. (2005) Willingness to pay for a QALY, theoretical and methodological issues. *Pharmacoeconomics*, 23, 423-432.
- Hammarström, A., Härenstam, A. & Östlin, P. (2001) Gender and health: concepts and explanatory models. In: P. Östlin, M. Danielsson, F. Diderichsen, A. Härenstam & G. Lindberg (eds.), *Gender inequalities in health: a Swedish perspective* (pp. 1-22). Boston: Harvard University Press.
- Hammarström, A. (2002) What could a gender perspective mean in medical and public-health research? In: S.P. Wamala & J. Lynch (eds.), *Gender and social inequities in health* (pp. 21-41). Lund: Studentlitteratur.
- Hanson, K. (1999) *Measuring up: gender, burden of disease, and priority setting techniques in the health sector*. Global Health Equity Initiative project: Gender and Health Equity. Harvard Centre for Population and Development Studies, Working Paper Series, number 99.12.
- Harding, S. (1986) *The science question in feminism*. London: Cornell University Press.
- Hemström, Ö. (1998) *Male susceptibility and female emancipation. Studies on the gender differences in mortality*. Dissertation. Department of Sociology, Stockholm University.
- Hemström, Ö. (2001) Biological and social conditions: hypotheses regarding mortality differentials between men and women. In: P. Östlin, M. Danielsson, F. Diderichsen, A. Härenstam & G. Lindberg (eds.), *Gender inequalities in health: a Swedish perspective* (pp. 195-223). Boston: Harvard University Press.
- Hirdman, Y. (1988) Genussystemet: reflexioner kring kvinnors sociala underordning [The gender system: reflections on women's social subordination]. *Kvinnovetenskaplig tidskrift*, 9, 49-63.

- Holmia, M. & Raitasalo, K. (2005) Gender differences in drinking: why do they still exist? *Addiction*, 100(12): 1763-1769.
- Human Development Report. (2005) *International cooperation at a crossroads: aid, trade, and security in an unequal world*. United Nations Development Programme.
- Hurley, J. (2000) An overview of the normative economics in the health sector. In: A.J. Culyer & J.P. Newhouse (eds.), *Handbook of Health Economics* (pp. 55-118). Amsterdam: Elsevier.
- Härenstam, A., Aronsson, G. & Hammarström, A. (2001) The future of gender inequalities in health. In: P. Östlin, M. Danielsson, F. Diderichsen, A. Härenstam & G. Lindberg (eds.), *Gender inequalities in health: a Swedish perspective* (pp. 269-304). Boston: Harvard University Press.
- International Society for Equity in Health. (2005) Working definitions.
- Jaffee, S. & Hyde, J. S. (2000) Gender differences in moral orientation: a meta-analysis. *Psychological Bulletin*, 126(5), 703-726.
- Johannesson, M., Jönsson, B. & Karlsson, G. (1996) Outcome measurement in economic evaluation. *Health Economics*, 5, 279-296.
- Johannesson, M. & Gerdtham, U. (1996) A note on the estimation of the equity-efficiency trade-off for QALYs. *Journal of Health Economics*, 15, 359-368.
- Johansson, P. O. (1991b) *An introduction to modern welfare economics*. Great Britain: Cambridge University Press.
- Johansson, S. R. (1991a) Welfare, mortality and gender: continuity and change in explanations for male/female mortality differences over three centuries. *Continuity and Change*, 6, 135-178.
- Kamerman, S. B. (2000) From maternity to parental leave policies: women's health, employment, and child and family well-being. *Journal of the American Medical Women's Association*, 55(2), 96-99.
- Kawachi, I., Kennedy, B. P., Gupta, V. & Prothrow-Stith, D. (1999) Womens status and the health of women and men: a view from the States. *Social Science and Medicine*, 48, 21-32.
- Kiss, E. (1998) Justice. In: A. M. Jaggar & A.M. Young (eds). *A companion to feminist philosophy* (pp. 487-499). Great Britain: Blackwell Publishers Ltd.
- Koopmanshap, M. A., Rutten, F. H., van Ineveld, B.M. & van Roijen, L. (1995) The friction cost method for measuring indirect costs of disease. *Journal of Health Economics*, 14, 171-189.
- Krantz, G., Berntsson, L. & Lundberg, U. (2005) Total workload, work stress and perceived symptoms in Swedish male and female white-collar employees. *European Journal of Public Health*, 15(2), 209-214.
- Krieger, N. (2003) Genders, sexes, and health: what are the connections – and why does it matter? *International Journal of Epidemiology*, 32, 652-657.
- Kymlicka, W. (1990) *Contemporary political philosophy*. New York: Oxford University Press.

- Lee, C. & Farh, J. L. (1999) The effects of gender in organizational justice perception. *Journal of Organizational Behavior*, 20, 133-143.
- Le Grand, J. (1984) Equity as an economic objective. *Journal of Applied Philosophy*, 1, 39-51.
- Le Grand, J. (1987) Equity, health, and health care. *Social Justice Research*, 1, 257-274.
- Lippert-Rasmussen, K. (2004) Are some inequalities more unequal than others? Nature, nurture and equality. *Utilitas*, 16(2), 193-219.
- Lindholm, L. & Rosén, M. (1998) On the measurement of the nation's equity adjusted health. *Health Economics*, 7, 621-628.
- Lindholm, L., Henriksson, R., Rosén, M., Bergenheim, T. & Salander, P. (1999) Is treatment of malignant glioma more cost-effective than hip replacement? An attempt to integrate a justice principle in cost-utility analysis. *Cancer Strategy*, 1, 135-140.
- MacIntyre, S. & Hunt, K. (1997) Socio-economic position, gender and health – how do they interact? *Journal of Health Psychology*, 2, 315-334.
- Major, B., Bylsma, W. H. & Cozzarelli, C. (1989) Gender differences in distributive justice preferences: the impact of domain. *Sex Roles*, 21, 487-497.
- Marklund, S., Bjurvald, M., Hogstedt, C., Palmer, E. & Theorell, T. (2005) *Den höga sjukfrånvaron – problem och lösningar* [The high level of sickness absence – problems and solutions]. National Institute of Working Life.
- Marmot, M. G., Feeney, A., Shipley, M., North, F. & Syme, S. L. (1995) Sickness absence as a measure of health status and functioning. From the UK Whitehall II study. *Journal of Epidemiology and Community Health*, 49(2), 124-130.
- Meinecke, C. E. (1981) Socialized to die younger? Hypermasculinity and men's health. *The Personnel and Guidance Journal*, December, 241-245.
- Meltzer, D. (1997) Accounting for future costs in medical cost-effectiveness analysis. *Journal of Health Economics*, 16, 33-64.
- Mitchell, R. C. & Carson, R. T. (1989) *Using surveys to value public goods: the contingent valuation method*. Washington: Resources for the Future.
- Mooney, G. (1987) What does equity in health mean? *World Health Statistics Quarterly*, 40, 296-303.
- Murray, C. J. L. & Lopez, A. D. (1996) *The global burden of disease. A comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990*. The World Health Organization and The World Bank: Harvard University Press.
- Månsdotter, A., Lindholm, L. & Öhman, A. (2004) Women, men and public health – how the choice of normative theory affects resource allocation. *Health Policy*, 69, 351-364.
- National Board of Health and Welfare. (2004) *Guidelines for Coronary Artery Care*.

- National Social Insurance Board. (2004) *Resultat av kontroll av misstänkt fusk med tillfällig föräldrapenning* [Results from inspection of suspected cheating in temporary child care benefit]. Number 5601/2004.
- Newhouse, J. P. (1998) US and UK health economics: two disciplines separated by a common language? *Health Economics*, 7, S79-S92.
- Noddings, N. (1984) *Caring: a feminine approach to ethics and moral education*. Berkely: University of California Press.
- Nord, E., Pinto, J. L., Richardson, J., Menzel, P. & Ubel, P. (1999) Incorporating societal concerns for fairness in numerical valuations of health programmes. *Health Economics*, 8, 25-39.
- Nozick, R. (1974) *Anarchy, state and utopia*. New York: Basic Books Inc.
- Nussbaum, M. C. (1999) *Sex and social justice*. New York: Oxford University Press.
- Okin Moller, S. (1987) Justice and gender. *Philosophy and Public Affairs*, 16, 42-72.
- Okin Moller, S. (1989) *Justice, gender and the family*. New York: Basic Books.
- Oláh, L. (2001) *Gendering family dynamics: the case of Sweden and Hungary*. Dissertation. Department of Demography, Stockholm University.
- Pruett, K. (1988) Father's influence on the development of infant's relationships. *Acta Paediatrica Scandinavia*, 77(344), 43-52.
- Public Health Policy Report. (2005:5) Swedish National Institute of Public Health.
- Rawls, J. (1972) *A theory of justice*. Oxford: Oxford University Press.
- Richardson, J. & McKie, J. (2005) Empirics, ethics and orthodox economic theory: what is the appropriate basis for decision-making in the health sector? *Social Science and Medicine*, 60, 265-275.
- Rieker, P. P. & Bird, C. E. (2005) Rethinking gender differences in health: why we need to integrate social and biological perspectives. *The journals of gerontology. Series B, Psychological sciences and social sciences*, 60(2), 40-47.
- Ringbäck Weitoft, G., Burström, B. & Rosén, M. (2004) Premature mortality among lone fathers and childless men. *Social Science and Medicine*, 59, 1449-1459.
- Roberts, M. J. & Reich, M. R. (2002) Ethical analysis in public health. *The Lancet*, 359, 1055-1059.
- Ruhm C. J. (2000) Parental leave and child health. *Journal of Health Economics*, 19, 931-960.
- Sabo, D. & Gordon, D. F. (1995) Rethinking men's health and illness. In: D. Sabo & D. F. Gordon (eds.), *Men's health and illness: gender, power, and the body* (pp. 1-21). London: Sage Publications.
- Sculpher, M. (2001) The role and estimation of productivity costs in economic evaluation. In: M. Drummond & A. McGuire (eds.), *Economic evaluation in health care – merging theory and practice* (pp. 94-112). Oxford: Oxford University Press.

- Sen, A. (1979) Personal utilities and public judgements: or what's wrong with welfare economics? *Economic Journal*, 89, 537-558.
- Sen, A. (1980) *Equality of what?* The Tanner lectures on human values. Cambridge: Cambridge University Press.
- Sen, A. (1992) *Inequality re-examined*. United States: Oxford University Press.
- Sen, A. (1998) Mortality as an indicator of economic success and failure. *Economic Journal*, 108, 1-26.
- Sen, A. (2001) Gender equity and the population problem. *International Journal of Health Services*, 31, 469-474.
- Sen, A. (2004) Why health equity? In: S. Anand, F. Peter & A. Sen (eds.), *Public health, ethics, and equity* (pp. 20-33). New York: Oxford University Press.
- Sen, G., George, A. & Östlin, P. (2002) The case for gender equity in health research. *Journal of Health Management*, 4, 99-117.
- Sherwin, S. & Baylis, F. (2003) The feminist health care ethics consultant as architect and advocate. *Public Affairs Quarterly*, 17(2), 141-158.
- Simon, R. W. (1995) Gender, multiple roles, role meaning, and mental health. *Journal of Health and Social Behavior*, 36, 182-194.
- Smith, R. D. & Richardson, J. (2005) Can we estimate the 'social' value of a QALY? Four core issues to resolve. *Health Policy*, 74, 77-84.
- SOU (2000:91) *Health on equal terms – national goals for public health*. Ministry of Health and Social Affairs.
- SOU (2005:73) *Reformerad föräldraförsäkring – kärlek, omvårdnad, trygghet* [Reformed parental insurance – love, care, security]. Ministry of Health and Social Affairs.
- Stanistreet, D., Bamba, C. & Scott-Samuel, A. (2005) Is patriarchy the source of men's higher mortality? *Journal of Epidemiology and Community Health*, 59, 873-876.
- Sterba, J. P. (1998) *Justice for here and now*. Cambridge studies in philosophy and public policy. United States: Cambridge University Press, 1998.
- Sugden, R. & Williams, A. (1987) *The principles of practical cost-benefit analysis*. Great Britain: Oxford University Press.
- Sundby, J. (1999) Are woman disfavoured in the estimation of disability adjusted life years and the Global burden of disease? *Scandinavian Journal of Public Health*, 27, 279-285.
- Swedish Pharmaceutical Benefits Board. (2003:2) *General advice on economic evaluations*.
- Sweeney, P. D. & McFarlin, D. B. (1997) Process and outcome: gender differences in the assessment of justice. *Journal of Organizational Behaviour*, 18, 83-98.

-
- Sörensen, K. & Bergqvist, C. (2002) *Gender and the Social Democratic Welfare Regime*. National Institute of Working Life.
- Thoits, P. A. (1983) Multiple identities and psychological well-being. *American Sociological Review*, 48, 174-187.
- Torsheim, T., Ravens-Sieberer, U., Hetland, J., Välimaa, R., Danielsson, M. & Overpeck, M. (2006) Cross-national variation of gender differences in adolescent subjective health in Europe and North America. *Social Science and Medicine*, 62(4), 815-827.
- Tsuchiya, A. & Williams, A. (2001) Welfare economics and economic valuations. In: M. Drummond & A. McGuire (eds.) *Economic evaluation in health care – merging theory and practice* (pp. 22-45). Oxford: Oxford University Press.
- Tsuchiya, A. & Williams, A. (2005) A “fair innings” between the sexes: are men being treated inequitable? *Social Science and Medicine*, 60, 277-286.
- Tsuchiya, A., Miguel, L. S., Edlin, R., Wailoo, A. & Dolan, P. (2005) Procedural justice in public healthcare resource allocation. *Applied Health Economics and Health Policy*, 4(2), 119-127.
- Verbrugge, L. M. & Madans, J.H. (1985) Social roles and health trends of American women. *The Milbank Memorial Fund quarterly. Health and Society*, 63, 691-735.
- Verbrugge, L. M. (1989) The twain meet: empirical explanations of sex differences in health and mortality. *Journal of Health and Social Behavior*, 30, 282-304.
- Vågerö, D. (1995) Health inequalities as policy issues – reflections on ethics, policy and public health. *Sociology of Health & Illness*, 17, 1-19.
- Wagstaff, A. (1991) QALYs and the equity-efficiency trade-off. *Journal of Health Economics*, 10(1), 21-41.
- Waldron I. (1976) Why do women live longer than men? *Journal of Human Stress*, 2, 2-13.
- Waldron, I. (1983) Sex differences in human mortality: the role of genetic factors. *Social Science and Medicine*, 17(6), 321-333.
- Waldron I. (2000) Trends in gender differences in mortality: relationships to changing gender differences in behaviour and other causal facts. In: E. Annandale & K. Hunt (eds.), *Gender inequalities in health* (pp. 150-181). Buckingham: Open University Press.
- Walzer, M. (1983) *Spheres of Justice*. New York: Basic Books.
- Weatherhall, R., Joshi, H. & Macran, S. (1994) Double burden or double blessing? Employment, motherhood and mortality in longitudinal study of England and Wales. *Social science and Medicine*, 38(2), 285-297.
- Weinstein, M. C. (1990) Principles of cost-effective resources allocation in health care organizations. *International Journal of Technology Assessment in Health Care*, 6, 93-103.

Whitehead, M. (2000) *The concepts and principles of equality and health*. World Health Organization, Copenhagen.

Williams, A. (1997) Intergeneration equity: an exploration of the “fair innings” argument. *Health Economics*, 6, 117-132.

Williams, A. & Cookson, R. (2000) Equity in health. In: A. J. Culyer & J. P. Newhouse (eds.) *Handbook of Health Economics* (pp. 1863-1910). Amsterdam: Elsevier.

Williams, A. (2004) *What could be nicer than NICE?* Office of Health Economics, London.

Wingard, D. L. (1982) The sex differential in mortality rates. *American Journal of Epidemiology*, 115, 205-216.

World Health Report. (2002) *Reducing risks, promoting healthy life*. World Health Organization.

World Health Report. (2004) *Changing history*. World Health Organization.

World Health Report. (2005) *Make every mother and child count*. World Health Organization.

Yaari, M. & Bar-Hillel, M. (1984) On dividing justly. *Social Choice and Welfare*, 1, 1-24.

Young, I. M. (1985) Humanism, gynocentrism and feminist politics. *Hypatia: a journal of feminist philosophy* (special issue of women’s studies), 3, 173-183.