

A GENERATION APART? GENDER-RELATED EXPERIENCES AND HEALTH IN WOMEN IN EARLY AND LATE MID-LIFE*

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Abstract

There have been a number of critiques in the last few years of the prevailing paradigm of research on gender and health which dominated in the latter part of the twentieth century. One such criticism has centred on the ahistoric and decontextualised way in which much evidence for gender differences has been used. In this paper we aim to show that, even within a relatively confined geographical locale over a relatively short period of time, there have been substantial changes in gender relations which are likely to have affected the experience, opportunities, and attitudes of women born in the early 1930s and early 1950s. We illustrate this using data from a study of inequalities in health in Scotland, which includes unusually rich longitudinal data on gender, including occupancy and experience of gender-related roles, attitudinal data on gender equality, and measures of gender role orientation (GRO). These are related to various dimensions of health and health behaviour. The data show substantial differences in the experiences of two generations of

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women, who are just 20 years apart in age, and a lack of consistency between measures of GRO and health. Whilst on the one hand these data suggest the importance of taking more account of the broader (social, historical or political) context, the analysis also highlights the methodological problems posed.

Keywords: Women's health, Gender roles, Inequalities, Scotland.

Résumé

Ces dernières années, on a beaucoup critiqué le paradigme qui prévalait dans les recherches sur le genre et la santé à la fin du XX^e siècle. L'une de ces critiques portait sur l'usage a-historique et décontextualisé qui a été fait de la plupart des données sur les différences entre sexes. L'auteur de cette communication veut montrer que, même dans un cadre géographique relativement restreint et sur un intervalle de temps relativement court, on a observé des évolutions importantes dans les rapports sociaux entre les sexes, qui peuvent avoir influencé le vécu, les perspectives et les attitudes des femmes nées au début des années 1930 et au début des années 1950. Elle illustre son propos en utilisant les données d'une étude écossaise sur les inégalités en matière de santé, comprenant des données longitudinales exceptionnellement riches sur la problématique du genre : attribution et exercice des rôles masculins et féminins, attitudes en matière d'égalité des sexes et mesures de la position individuelle à l'égard de la répartition sexuelle des rôles (indice GRO – gender role orientation). Ces facteurs sont liés à divers aspects de la santé et des comportements en matière de santé. Les données révèlent de grandes différences dans le vécu des deux générations féminines à vingt ans de distance et un manque de concordance entre les indices GRO et la santé. D'un côté, ces données montrent qu'il est important de mieux tenir compte du contexte le plus large (social, historique ou politique), de l'autre, l'analyse met aussi en évidence les problèmes méthodologiques qui se posent.

Mots-clés : Écosse, Santé des femmes, Rôles des sexes, Inégalités.

1. Introduction: Comparing generations of women

“The secondary status of woman in society is one of the true universals, a pan-cultural fact. Yet within that universal fact, the specific cultural conceptions and symbolizations of women are extraordinarily diverse and even mutually contradictory. Further, the actual treatment of

women and their relative power and contribution vary enormously from culture to culture, and over different periods in the history of particular cultural traditions. Both of these points – the universal fact and the cultural variation – constitute problems to be explained” (Ortner, 1974, p. 67).

This paper seeks to focus on one dimension of diversity amongst women highlighted above by Ortner, namely that ‘over different periods in the history of particular cultural traditions’. Amongst the many critiques of research on gender and health, the tendency for research to be cited in an historical void, despite many changes and challenges to the gender order in the last quarter of the twentieth century, has been highlighted recently (see, Annandale and Hunt, 2000; Hunt and Annandale, 1999; Popay and Groves, 2000). Such changes in the ways in which gender structures opportunities and life chances give rise, we have suggested, to the need for

“more systematic evaluation of existing evidence, taking more account of the broad macro-economic context and a corresponding need to cite evidence with more reference to time, place, specific health condition and age” (Hunt and Annandale, 1999, p. 1).

A failure to address the historical context of research may mask potentially important aetiological pathways between women’s (and men’s) lived experiences and their health. However, attempting to integrate such complexities and subtleties into studies of health and illness presents a major methodological challenge to future research.

Following a brief review of some recent critiques of research on gender and health and the emergence of a focus on historical context, this paper examines some changes in key social statuses which remain closely linked to, and themselves structure, gender in Britain. It then presents some data on two cohorts of women living in the same (relatively small) geographical locale (in the west of Scotland) who were born just 20 years apart. The empirical part of this paper is intended to be illustrative and exploratory, seeking to highlight differences and complexities that are frequently ignored in quantitative research. The aim is to portray the *extent* of difference between two generations of women who are often grouped together in the same wide age band in quantitative analyses; and thus to question whether we would *expect* to observe the same relationships between indicators of gendered experiences and health in these women whose experiences of gender relations are likely to differ somewhat.

2. The emergence of a concern about historical context in gender and health

Research on women's health, and later on gender and health, became a strong theme within medical sociology in the latter decades of the twentieth century (see Annandale and Hunt, 2000 for a review). However, as Lane and Cibula note

“[although] gender studies have proliferated enormously this wealth of published literature has produced more questions than definitive answers” (Lane and Cibula, 2000, p. 136).

Research in the area has been described as being at a ‘crossroads’ (Annandale and Hunt, 2000) and the “pervasive grand narrative in gender inequalities” that ‘women get sicker but men die quicker’ is portrayed as

“currently being recast.. [partly].. as a response to a growing critique of the dominant methodological and theoretical frameworks informing research on gender inequalities” (Popay and Groves, 2000, p. 66).

A number of broad challenges are evident. The dominance of perspectives from Britain and North America is being challenged through increasing attention to other countries. There is concern to integrate evidence and perspectives from both high income and low income countries (see Östlin *et al.*, 2001), and to examine how gender is modified, such as by ethnicity or class (Macintyre and Hunt, 1997). Others have focussed on the lack of integration of biological and sociological models (see, for example, Bird and Rieker, 1999; Rieker and Bird, 2000).

Another common theme centres on pleas for greater recognition of increased diversity *within* men and *within* women (Annandale and Hunt, 1990; Annandale and Hunt, 2000; Rieker and Bird, 2000). The origin of the tendency to focus on difference between men and women has many roots, but one lies in the patterning of mortality. The fact that greater female longevity has been pronounced for many decades in Britain and other parts of the developed world, has led to assumptions about the *inevitability* of differential mortality patterns by gender (often assumed to be a biological ‘given’), and thence to a tendency to universalise the health experience of women and to pay too little attention to the historical specificity of their experiences. Greater female longevity, and higher male mortality at all stages of the life course, is now often taken for granted in developed societies: in 1997, for example, life ex-

pectancy at birth in the UK was 79.6 for females and 74.6 for males (Office for National Statistics, 2000), and from middle age men have a death rate similar to that of women who are five years older (Craig, 1995). Yet, this female advantage is a relatively recent phenomenon and female excess mortality, which defined many western societies prior to the industrial revolution, still pertains in some less developed countries today (see Annandale, 1998 for a more detailed review).

Recently some critiques have highlighted the lack of context in much research on gender and health. In a paper challenging the dominance of the current research paradigm, Macintyre and colleagues suggested that research on differences between men and women should address 'the social and historical context of our observations' (Macintyre *et al.*, 1996, p. 624). However, there has not only been a degree of collective amnesia about historical changes in the 'outcome' side of the equation (i.e. patterns of mortality and morbidity), but also a concurrent failure to place potential explanatory mechanisms and processes in their historical context. This can perhaps best be illustrated with reference to the research agenda which focused on social roles as explanations for the 'men die quicker, but women get sicker' paradigm. Rieker and Bird open a recent overview of sociological explanations of gender differences in health by noting that,

"Socially constructed gender roles, identities, and inequality in opportunities and resources shape men's and women's lives and in turn affect their health" (Rieker and Bird, 2000, p. 98).

Yet too often such 'socially constructed roles' have been treated as static, or reduced to summary statuses (such as employee, or mother or father) without recognition that the meaning and consequences of such roles is both historically, geographically and culturally circumscribed (Simon, 1995; Simon, 1997). Juane Clarke, in her forward-thinking review of the literature in the early 1980s (Clarke, 1983) which anticipated many of the themes which were picked up in critiques over a decade later, notes that:

"Social-role hypotheses look at the ways in which women's roles ... are associated with different sorts and levels of health and illness. The assumption is that these roles have the same meanings, first, to different women and, then, to women and men; or that the context and the content of domestic labour is comparable across classes, cultural/ethnic groups, educational levels and so on (p. 71-72). ... The larger conceptual issue regarding gender has to do with the validity and efficacy of asking

questions about sex differences and explaining these differences in terms of social roles... We are explaining a minuscule and contextless behaviour when the social-structural, cultural and economic forces which move persons dialectically are ignored. Questions about sex and illness are ambiguous unless the social construction of the categories of meaning associated with all of sex, gender and illness are explored in their full social, political and economic surroundings." (p. 71).

Lane and Cibula follow in a similar vein in suggesting that

"Clearly, both culturally patterned gender behaviour and biologically based risks interact to produce health and illness. Very few studies, however, link the examination of the cultural and political construction of gender with rates of actual mortality and morbidity" (Lane and Cibula, 2000, p. 138).

One study by Kawachi and colleagues which has attempted to do this in the United States concluded that mortality was lower in states which had higher levels of political participation among women, and greater economic autonomy (Kawachi *et al.*, 1999). This, they claim, demonstrates the importance of adding a "society and health 'lens'" to the "variety of theoretical 'lenses' through which to view and analyze gender differences in health" (Kawachi *et al.*, 1999, p. 21).

Thus, over recent years complex tensions have arisen in research on gender and health between a recognition of the need to take on board developments within broader feminist thought and changes in the actual form of gender relations in society, and the recognition that, despite these, gender still fundamentally structures opportunities (Emslie *et al.*, 1999). The necessity of evaluating and conducting research within an explicit historical (or socio-political) context is coming to the fore. As Popay and Groves note:

"As Mills (1959: 145) has argued: 'every social science – or better, every well considered social study – requires an historical scope of conception and a full use of historical material'" (Popay and Groves, 2000, p. 70).

To illustrate the importance of relatively short-term social change, we now look at changes in circumstances and expectations for women in Britain, before contrasting gender-related experiences of two generations of women, the older group born in the early 1930s and the younger group born in the early 1950s, living within the west of Scotland. These women are part of the Twenty-07 Study, a longitudinal study of the social patterning of health which has followed three age cohorts; aged around 15, 35, and 55 years when first studied in

1987/88. In this paper we contrast women from the two older cohorts, and mainly use data which derive from the third major contact with the cohorts in 1995/6 when the women were in their early forties and early sixties.

3. Changes in circumstances and expectations for women: The British context

There are very many ways in which the circumstances, conventions and expectations for women in these two cohorts, born in the early 1930s and early 1950s, changed dramatically. At the most basic level, life expectancy at birth continued to increase in the middle third of the twentieth century. In 1931 life expectancy at birth in England and Wales was 58 for men and 62 for women. Equivalent figures for 1961 were 68 and 74 (Charlton, 1997, p. 20, Table 3.3). Thus, over just 30 years the gender gap widened as women gained an additional 12 years of life on average, and men gained 10. The largest changes in mortality in Britain during the twentieth century occurred in childhood, especially for those born between 1911 and 1951. Infant death rates began to fall steadily in Britain at the beginning of the twentieth century, with an accelerated decline beginning immediately after the Second World War. Thus, mortality early in life was very different at the time that the two cohorts were born; indeed infant mortality rates more than halved over this short time. For boys, death rates under the age of one were 70 per 1000 for those born in 1931-1935 and 30 per 1000 for those born in 1951-1955; equivalent figures for girls were 54 and 23 (Charlton, 1997, p. 23, Table 3.4). Of those born in 1931, only around 75% survived to age 65 (Charlton, 1997).

We now turn to consider broad trends in marriage, reproduction and employment since, as illustrated by Sylvia Walby below, these are of central importance to an understanding of gender at any point in time:

“The significance of politics for the analysis of gender relations has often been underestimated. In particular, the balance that women choose between domestic and paid employment is crucially structured by the environment created by state policies. These include policies expressly oriented to the reconciliation of working and family life, such as publicly funded child care, as well as the regulation of gender relations in em-

ployment such as the Equal Pay Act and Sex Discrimination Acts. There are also important policies which have an indirect effect on the sexual division of labour through the regulation of the wider social environment within which men and women make gendered decisions. This includes policies regulating marriage ... [and] those regulating aspects of sexual practice and fertility, such as the availability of legal abortion and contraception." (Walby, 1997, p. 137).

There have been dramatic changes over the latter half of the twentieth century in patterns of marriage and cohabitation in Britain (Evandrou and Falkingham, 2000; Haskey, 1995). In England and Wales in 1946, immediately after the Second World War, the median ages of men and women marrying for the first time were 26 and 23.5 years respectively. The median ages fell until in the late 1960s they were 23 (for men) and 21 years (for women), yet by 1993 they had risen again to 27 and 25, the oldest median ages for over 60 years (Haskey, 1995). By 1997 the mean age of women at first birth was 26.8 (Ruddock *et al.*, 1998). During this period the percentage of women who lived with their future husbands before marriage rose from less than 5% to around 70% for those marrying in the early 1990s (Haskey, 1995). The proportion of women who had ever divorced by age 45 was less than 10% for the birth cohort of 1931 as compared with almost 25% for the birth cohort of 1946 (Evandrou and Falkingham, 2000, Figure 2).

There have also been changes in patterns of family formation over the last few decades. Here we report changes for women of the same age as our two age cohorts. For women who were born in 1932 in England and Wales, the average number of liveborn children was around 2.17 by the age of 35, and 2.34 by the age of 45. Equivalent figures for women born in 1952 were 1.91 and 2.05. Projected figures also suggest an increase in the percentage of women who will remain childless (13% by age 45 for women born in 1932 compared with 16% for women born in 1952 and projected figure of 23% for those born in 1972) (Ruddock *et al.*, 1998). This increase in childlessness in the UK is more marked than for other countries in the European Union such as France, Spain and Portugal (Pearce *et al.*, 1999). There are also major changes in the proportions of women who bring up their children as lone parents for at least part of their lives, although the prevalence of lone motherhood only began to increase dramatically for women born in the early 1960s and subsequently, thus principally affecting cohorts born later than the two that we compare in this paper (Haskey, 1998).

We have reviewed broad social changes in the latter part of the twentieth century, particularly in employment and education, in some detail elsewhere (Annandale and Hunt, 2000). These are two key areas identified by Walby in the “fundamental transformations of gender relations in the contemporary Western World [which are] affecting the economy and all forms of social relations” (Annandale and Hunt, 2000, p. 1) (Walby, 1997). We have argued: that “while many of these changes are massive in scope, they are complex and subject to diverse explanation” (Annandale and Hunt, 2000, p. 3); and that “the sociology of work and employment is especially important to research on gender and health status which has had the link between employment and health at its core since its inception” (p. 3). Whilst there has been a trend towards women’s increasing involvement in the paid labour force and in different work environments, it is difficult to find summary indicators that specifically distinguish the working experiences of the two generations that are the focus of this paper.

Thus, even a brief review of patterns of crude indicators of health (at least as represented by life expectancy and mortality), family formation and employment points to major social changes that are likely to have distinguished the lives and expectations our two cohorts of women. The older cohort were born in the early 1930s (93% in 1931 and 1932) and would have been affected in infancy by the Depression of 1933. They were born to a generation of women still experiencing high maternal mortality, some of it attributed to (illegal) termination of pregnancy (Report 1936, cited in Charlton, 1997, p. 11). Women born in the early 1930s in Britain experienced the austerity of war-time (1939-1945) and post-war Britain during the early years of their lives. Some too faced disruption of their family lives as a result of war-time evacuation (indeed this affected nearly 40% of men and women of this age in our sample). Most went on to marry and have children in the ‘boom years’ of the 1950s and early 1960s, when conventional ideology about ‘traditional’ roles for women was at its height (see, for example, Segal, 1990).

The younger cohort were born at the beginning of the 1950s (92% were born in 1950 and 1951) at the tail end of the post-war ‘baby boom’ in Britain. This cohort thus grew up at a time when investment in social welfare, including the establishment of the National Health Service (NHS), gave them access to public health care and increasing education opportunities (especially for women). The cohort were in

their teens in the late 1960s when there was considerable challenge to the social order, including a major resurgence of activism around feminism. They entered their early adult lives at a time when sexual mores and expectations about marriage and family formation were beginning to be publicly challenged. These women were in the early part of their reproductive lives at a time of significant changes in the provision and legal availability of contraception and abortion. Oral contraception (OCs) became available in the early 1960s; and the Abortion Act, which liberalised the legal grounds for abortion, took effect in both Scotland and England and Wales in 1968. In the early 1970s access to more efficacious methods (such as OCs and the intrauterine device) became more freely available to women in all social groups. At around the same time (1972), male sterilisation became available on the NHS. Thus this cohort were one of the first to have access to oral contraception and greater control over their fertility for the majority of their reproductive lives (Hunt, 1990).

Many of the women in the early 1950s cohort will have grown up with an expectation of working outside the home, and others will have become increasingly aware of the necessity of paid employment as divorce (and lone parenthood) increased and the reality of a 'family wage' waned (Walby, 1997). Most of these women's working lives has post-dated the introduction of legislation that was intended to minimise or abolish discrimination in the workplace, although recent evidence ably demonstrates that pay differentials between men and women are still substantial and widespread despite this legislation (Rake, 2000).

However, as Popay and Groves suggest, changes in patterns of employment and family life over time signal a

"transformation in the contours of gender inequalities. But while the morphology of gender inequalities may be transformed, all the evidence points to their continued significance" (Popay and Groves, 2000, p. 85).

We now turn to examine the relationships between aspects of gender and health in these two generations of women in the Twenty-07 Study. Given the changes outlined above we hypothesized that gender-related attitudes and experiences would differ markedly, and that these may be differentially related to health.

We have previously investigated the relationship between 'masculinity' and 'femininity' scores derived from a measure of gender role orientation that has been widely used within psychology (see below for a more detailed description) and a number of health outcomes in an

earlier analysis of women (and men) from the 1950s cohort (Annandale and Hunt, 1990). In that cohort higher masculinity scores tended to be associated with better health outcomes for symptoms and mental health.

We wanted to compare results for women from the earlier (1930s) cohort who would have experienced different expectations of themselves as women. We speculated that the relationships may differ between the cohorts, and specifically that changes in gender relations may result in higher masculinity scores being associated with greater benefits for psycho-social health amongst women in the younger group. The underlying reasoning here is that many of these 'masculine' characteristics have been positively valued by British society (at least amongst men), but their expression by women from the younger generation may be less strongly sanctioned, given changes and challenges to gender role expectations, than amongst older women who became adults during a period of more rigid normative expectations of gender. We saw little relationship between femininity scores and various measures of health in our earlier analysis (Annandale and Hunt, 1990); we speculated that the relationships between 'femininity' and health may be stronger in the older cohort.

Links between masculinity and health risks have been examined amongst men (Courtenay, 2000), but we wished to examine the hypothesis that smoking and consumption of alcohol would be related to masculinity amongst women. A recent study of men and women who were full-time employees in two white collar organisations has reported an association between masculinity scores and smoking in both sexes (Emslie *et al.*, 2002). However, in this population smoking was not related to femininity scores. In recent years, however, researchers have highlighted the increasing feminisation of smoking (see, for example, Elliott, 2000a; Elliott, 2000b; Graham, 1987; Graham, 1996), and thus we also wished to test whether higher femininity scores were related to smoking in women from the general population (by contrast with women in full-time employment).

4. The survey participants

Participants in the West of Scotland Twenty-07 Study were sampled from a socially varied but mainly urban area centred on the city of

Glasgow in the West of Scotland, and initial sample sizes in 1987/8 were around 1000 men and women per cohort. Respondents completed lengthy interviews in 1987/8 and on two subsequent occasions in 1990/1 and 1995/6. All interviews were conducted by nurses in the two later periods, and all respondents took part in two interviews (one conducted by a qualified nurse) in the baseline interviews. In 1987/8, interviews were completed for 568 women in the 1930s cohort (aged around 55) and 541 women in the 1950s cohort (aged around 35). In 1995/6 400 women in the 1930s cohort (then aged around 63 years) and 423 women in the 1950s cohort (then around 43 years) were re-interviewed. Reasons for attrition varied between the two cohorts: taking men and women together, more were attributable to deaths (8% of original sample) and refusals (16%) in the 1930s cohort than in the 1950s cohort (1% and 9% respectively). Fewer from the older cohort had moved away (4% compared with 7% in the 1950s cohort) or were uncontactable (2% compared with 6% in the 1950s cohort). Further details on the sample and methods are available elsewhere (Der, 1998; Ecob, 1987; Ford *et al.*, 1994).

A wide range of measures of self reported health and health behaviour, of physical development and functioning, and of personal and social circumstances, has been collected at each wave of interview. The health outcomes that we report here are: three sets of self-reported symptoms (total number of symptoms experienced in the month prior to interview, total number of malaise symptoms, and total number of physical symptoms; since the distribution of these outcomes is positively skewed, these variables have been transformed by taking the square root), and mental health as indicated by scores on the Hospital Anxiety and Depression Scale (HADS) (Zigmond and Snaith, 1983). These outcomes were chosen as they have been more consistently shown to differ between men and women (Macintyre *et al.*, 1996). The two health-related behaviours that we consider are current smoking (current cigarette smokers as compared with ex- and never-smokers) and consumption of alcohol in the week prior to interview (a dichotomous variable indicating whether a woman drank more than a commonly used 'recommended' upper limit {more than 14 units per week}, and number of units of alcohol consumed in the previous week).

5. Studying gender in the Twenty-07 Study

From the 1970s onwards, there has been considerable interest in gender and health, particularly in Western Europe and the USA, fostered both by second wave feminism and by an increasing interest in inequalities in the health of different groups in society (Hunt and Annandale, 1999). From its inception, the Twenty-07 study has had gender as a main area of interest. We have previously reported on various analyses of gender and health in the study, including: on gender, employment and health (Hunt and Annandale, 1993; Hunt and Emslie, 1998); on overall gender differences in health (Macintyre *et al.*, 1999; Macintyre *et al.*, 1996); on gender and primary care consultation (Hunt *et al.*, 1999; Wyke *et al.*, 1998); and on the relationship between gender role orientation and health in the 1950s cohort (Annandale and Hunt, 1990).

As noted earlier, much research in the 'role' tradition from the 1970s and early 1980s was limited by insensitive measurement of variables such as work experience and gender (see Annandale, 1998; Annandale and Hunt, 2000 for more detail). The Twenty-07 Study took account of occupancy and experience of various roles. For example, in relation to gender we studied not only the experience of being male or female but also gender role ideology and dimensions of 'maleness' or 'femaleness' (Annandale and Hunt, 1990). The study used a measure of gender role orientation (GRO), the Bem Sex Role Inventory (BSRI) (Bem, 1981), which had been developed and widely used within psychology (mainly in North America), though little used in relation to self-assessed health, physical health and health behaviours, or within other traditions of social science research. As this is a major focus of this paper, we outline some key features here, but more detail about its derivation (Bem, 1981) and its implementation in this study (Annandale and Hunt, 1990) is given elsewhere.

The BSRI was developed in the early 1970s in the United States, and is premised on the assumption that masculinity and femininity are both conceptually and empirically independent. It thus challenged earlier notions of masculinity and femininity as opposite and mutually exclusive domains. It relies on an individual's endorsement of a series of adjectives or characteristics which have been judged to be culturally characteristic of either males or females. In the original derivation of the BSRI in 1972, potential items which were judged to be "positive in

value and either feminine or masculine in tone" (Bem, 1981, p. 11) were rated by male and female judges in terms of their desirability 'for a man' or 'for a woman' in contemporary American society. A characteristic was defined as 'masculine' if independently judged by both men and women to be significantly more desirable for men, and vice versa for women. Of the 76 characteristics which met this criterion, 40 (20 'masculine' and 20 'feminine') were selected for the Original Form of the BSRI. The 'Short Form' (which is the version used in this study) has 30 items, 10 of which constitute the 'masculinity' scale (Defend my own beliefs, Independent, Assertive, Strong Personality, Forceful, Have leadership abilities, Willing to take risks, Dominant, Willing to take a stand, Aggressive) and 10 for the 'femininity' scale (Affectionate, Sympathetic, Sensitive to the needs of others, Understanding, Compassionate, Eager to soothe hurt feelings, Warm, Tender, Loves children, Gentle) (Bem, 1981). The remaining 10 items are 'filler' items. Given our concerns that these items may no longer be seen as socially desirable for men or for women (as appropriate) in a different country in the 1980s and 1990s, a validation of the items was undertaken in 1992 in the west of Scotland. This suggested that the items contributing to the masculinity scale were generally still considered to be stereotypically 'male', and that the items contributing to the femininity scale were generally still considered to be stereotypically 'female' (Stroebele, 1992).

The BSRI is administered as a self-completion questionnaire in which respondents are asked to indicate the appropriateness of each of the 30 items as a self-descriptor by assigning a score from 1 ('never or almost never true') to 7 ('always or almost always true'). Analyses of data from the BSRI in this cohort have shown: a) high levels of internal consistency for the masculinity and femininity scales (for example, in 1987/8 the Cronbach's alpha for the masculinity scale was 0.85 amongst the 1950s cohort and 0.84 for the 1930s cohort); b) relatively low correlations between the masculinity and femininity scales (correlation coefficients were 0.10 for men and 0.15 for women in the 1950s cohort; equivalent figures for the 1930s cohort were 0.12 and 0.10), demonstrating the statistical independence of the two scales as intended by Bem; c) in factor analyses the femininity items load on a single factor, and the masculinity items on a separate factor in both these age cohorts, with none of the items from the masculinity scale loading

strongly on the femininity scale, and vice versa (Hunt and Sweeting, 1996).

In an earlier publication, we examined whether sex (i.e. male/female) differences in various aspects of health were affected when gender role orientation was taken into account (Annandale and Hunt, 1990). At that time, we argued that although a distinction had long been made between biological sex and sociological gender at a theoretical level, sex and gender were often conflated in empirical work. This analysis suggested that higher masculinity scores, as measured on the BSRI, were associated with relatively good health (as represented by two measures of mental health, self-assessed general health, and the number of self-reported symptoms) in both men and women. The relationship, if any, between GRO and health behaviours was not examined, although we have since examined GRO and smoking in men and women in all three cohorts of the Twenty-07 study (Hunt *et al.*, in press) and GRO and health behaviours in other populations (Emslie *et al.*, 2002).

6. Analysis

The focus of the analysis presented here is a) to examine whether there are differences in the gender-related attitudes and gender role orientations of the two cohorts of women, and b) to see whether indicators of gender role orientation are related to health and health behaviour in the two cohorts.

Chi-square values are used to assess the significance of differences in distributions on attitudes to traditional gender roles (and reported material conditions in early life). Linear regression was used to examine the relationship between the masculinity, and femininity, scores and the continuous health outcomes and number of units of alcohol consumed in the previous week. Where the distribution of the outcome variables was skewed, the variable was transformed (by taking the square root) to achieve a more normally distributed outcome. Logistic regression models were used for the categorical outcomes (being a current smoker, and drinking in excess of the recommended alcohol limit). We report here linear regression coefficients or odds ratios (as appropriate) unadjusted for any other factors, then adjusted for social class, employment status, marital status (key gender-related factors which are

known to affect health and to have different distributions in the two cohorts) and the other GRO score (i.e. femininity for the models examining the effect of masculinity, and vice versa).

7. Results

7.1. Comparing the earlier lives and attitudes of two generations of women

The summary of changes in expectations and circumstances above suggests that there should be some quite marked differences in gender-related experiences of these two cohorts of women. The Twenty-07 study shows clear differences in family formation patterns for the two cohorts (Table 1). Women in the younger (1950s) cohort married and had their first child at younger ages than women in the older cohort. At entry to the study, the majority of women (69% of the 1930s cohort and 79% of the 1950s cohort) were married; slightly more of the younger women had never married (10% vs. 7%), and 15% of the older cohort were already widowed.

In the 1995/6 interview, respondents were asked about their attitudes towards gender roles. The women in the 1930s cohort expressed much more traditional views about gender roles than women in the 1950s cohort (Table 2). More than three-quarters of women in the younger age group (aged mid 40s) disagreed with the statement that 'A husband's job is to earn the money; a wife's job is to look after the home and family', as compared with less than half of the older women (aged mid 60s). Similarly, more than 75% of the younger women (as compared with less than 60% of older women) disagreed with the statement that 'Some equality in marriage is a good thing, but by and large the husband ought to have the main say-so in family matters'. Conversely, almost a quarter of the older women endorsed this statement. Younger women were also much less likely to endorse the statement that 'Women rather than men should look after relatives who need care' (11% of women in their mid-40s compared with 29% of women in their mid 60s agreed with this statement). Differences between the two groups of women were less marked for the statement that 'All in all, family life suffers when the woman has a full-time job',

although the older women were significantly more likely to endorse a more 'traditional' view.

Table 1
Family formation patterns, marital and employment status
in 1987/8 by cohort

	1930s cohort (%) (<i>n</i> = 568)	1950s cohort (%) (<i>n</i> = 541)
<i>Age at first marriage</i>		
Never married	7	10
16-20	16	39
21-24	47	38
25+	30	13
<i>Age at first birth</i>		
No children	18	13
15-19	6	16
20-24	38	38
25-29	32	24
30+	7	8
<i>Employment status</i>		
In paid work	47	65
Looking after home	35	24
Disabled	9	1
Unemployed	4	7
Retired	4	0
Other	0	2
<i>Marital status</i>		
Currently married	69	79
Previously married		
- Separated	2	4
- Divorced	8	9
- Widowed	15	0
Never married	7	10

However, it is important to remember that there are also substantial other differences between the two cohorts of women in their earlier circumstances and experience, quite apart from gender-related roles and attitudes. Recent interest in the effects of exposure to adverse circumstances in early life and to cumulative disadvantage throughout life

Table 2
 Women's attitudes to traditional gender roles in 1995/6 by cohort

	Strongly agree (%)	Just agree (%)	Neither agree nor disagree (%)	Just disagree (%)	Strongly disagree (%)	Total <i>n</i>	χ^2 (degs of freedom) <i>p</i> value
Some equality in marriage is a good thing, but by and large the husband ought to have the main say-so in family matters							
<i>1950s cohort</i>	1	10	12	25	53	416	52.00 (4)
<i>1930s cohort</i>	4	19	19	30	29	385	<i>p</i> <0.0001
Women rather than men should look after relatives who need care							
<i>1950s cohort</i>	3	9	21	27	40	416	56.69 (4)
<i>1930s cohort</i>	7	22	25	26	21	387	<i>p</i> <0.0001
A husband's job is to earn the money; a wife's job is to look after the home and family							
<i>1950s cohort</i>	2	8	13	23	55	416	111.13 (4)
<i>1930s cohort</i>	9	18	26	26	21	387	<i>p</i> <0.0001
All in all, family life suffers when the woman has a full-time job							
<i>1950s cohort</i>	5	18	22	27	28	416	26.20 (4)
<i>1930s cohort</i>	11	22	29	23	16	387	<i>p</i> <0.0001

(see, for example, Graham, 2000; Kuh and Ben-Shlomo, 1997; Power and Matthews, 1997) suggests that these may have longstanding effects on health, and other evidence suggests that health behaviours may be influenced by earlier life experiences (Hunt *et al.*, 2000). Differences in the experiences of the two cohorts, as reported in a retrospective section of the interview in 1995/6, are apparent even from the time of birth (for example, 74% of the older women were born at home; 20 years later hospital births were already more prominent and just a third of the younger women were born at home, $p < 0.0001$). Twice as many of the older women (24% vs. 13%, $p < 0.0001$) reported that their father had been unemployed for a significant length of time (i.e. more than 6 months) during their childhood. There are marked contrasts between the two cohorts in indicators of material conditions in childhood and earlier adult life (see Table 3). About half of the older women reported that they had lived in a house which did not have an inside toilet, or a regular fixed supply of hot water, or a bath or shower during their childhood, and around 85% grew up in a household without a car. Similarly in adult life, around a third of the older women reported that they had lived for some time in a house without these facilities. More of the younger women reported always living in households with these facilities both in childhood and in their adult life, although it is worth noting that, even for this post-war generation, a third had lived, at some time in their childhood, in a house without an inside toilet or a bath or shower.

In contrast, there were no differences between the two cohorts of women in their ratings of various psychosocial factors in childhood. For example, their retrospective ratings of happiness as a young child did not differ, nor were there differences in ratings of the quality of their time spent either at primary school or at secondary school (data not shown). However, more than twice as many of the older women reported that their schooling had been disrupted by illness (16% of the older women compared with 6% ($p < 0.0001$) of the younger women said that they had missed school for a considerable time because of illness) and around 40% of the older women experienced the disruption of evacuation during the War.

Table 3
Material conditions earlier in life of women^a by cohort

	Cohort	Yes (row %)	No (row %)	Total <i>n</i>	χ^2 (degs of freedom) <i>p</i> value
Childhood					
<i>Throughout your childhood did you ever live in a house or home which did not have.</i>					
An inside toilet	1950s	34	66	423	11.28 (1)
	1930s	46	54	400	<i>p</i> <0.001
A regular fixed supply of hot water	1950s	26	74	422	57.21 (1)
	1930s	52	48	400	<i>p</i> <0.0001
A bath or shower	1950s	38	62	422	27.02 (1)
	1930s	57	44	400	<i>p</i> <0.0001
<i>Throughout your childhood (up to the age of 15) did your family ever own a car?</i>	1950s	45	55	422	83.98 (1)
	1930s	16	85	400	<i>p</i> <0.0001
Adulthood					
<i>As an adult, did you ever live in a house which did not have.</i>					
An inside toilet	1950s	13	87	423	46.70 (1)
	1930s	33	67	400	<i>p</i> <0.0001
A regular fixed supply of hot water	1950s	9	91	423	63.29 (1)
	1930s	31	69	400	<i>p</i> <0.0001
A bath or shower	1950s	18	83	423	54.12 (1)
	1930s	41	59	400	<i>p</i> <0.0001

^a As reported at interview in 1995/96.

7.2. Gender role orientation, health and health behaviour

There were few differences between the two cohorts in their mean scores on the GRO scales, and any differences seen were small and not statistically significant (Table 4). Women in the younger (1950s) cohort had slightly lower mean femininity scores than older women both

Table 4
 Masculinity and femininity scores at wave 1 (1987/8) and wave 3 (1995/6) for women by cohort
 (*n*, median, mean, standard deviation, skewness and kurtosis)

	Cohort	<i>n</i>	Median	Mean	Std. Dev	Skewness	Kurtosis
Wave 1 (1987/8)							
Masculinity score	1950s	497	4.10 ^a 4.10	4.04 ^a 4.03	.91	.015	-.098
	1930s	511	4.00 ^a 4.10	4.08 ^a 4.09	.93	.130	-.454
Femininity score	1950s	497	5.60 ^a 5.60	5.52 ^a 5.53	.77	-.532	-.017
	1930s	511	5.70 ^a 5.70	5.63 ^a 5.61	.69	-.601	.795
Wave 3 (1995/6)							
Masculinity score	1950s	390	4.30	4.26	.86	-.292	-.079
	1930s	354	4.20	4.18	.91	-.049	-.214
Femininity score	1950s	390	5.60	5.57	.68	-.415	.329
	1930s	356	5.70	5.63	.77	-1.063	2.221

^a Median/mean calculated for the subset of 1st wave respondents who were also interviewed in wave 3.

Table 5
Paired *t*-tests between waves 1 (1988/7, t_1) and 3 (1995/6, t_3)
for masculinity and femininity scores

	1950s cohort		1930s cohort	
	$t_1 - t_3$		$t_1 - t_3$	
Paired <i>t</i> -tests	Diff. ^a	<i>p</i>	Diff. ^a	<i>p</i>
Masculinity scale	-.231	***	-.090	n.s.
Femininity scale	-.040	n.s.	-.026	n.s.
Correlations	Correl. coeff.	<i>p</i>	Correl. coeff.	<i>p</i>
Masculinity scale	.647	***	.676	***
Femininity scale	.581	***	.633	***

^a A negative difference indicates a higher mean score at later time point.

*** $p < 0.001$; n.s. not significant.

when interviewed in 1987/8 (at entry to the study) and in 1995/6. Their mean masculinity scores did not differ (4.04 for 1950s cohort vs. 4.08 for 1930s cohort) in the earlier interviews and were slightly higher (4.26 vs. 4.18) in the later (1995/6) interviews. Longitudinal analyses demonstrate a high degree of consistency in people's scores over a 7-year period (1987/8 to 1995/6) (Table 5). When comparing scores at the two time points, correlation coefficients were high both for the masculinity score, and for the femininity score, in both age cohorts. A comparison of scores at the two time periods (using paired *t*-tests) showed a small but significant increase in masculinity score over time in the younger cohort only (Table 5). Analysis of the relationships between masculinity and femininity scores and various indicators of health presented below use data collected in 1995/6.

Results for masculinity scores are presented for the two cohorts in Table 6, both before and after adjustment for femininity score, women's social class, employment status and marital status. The two most striking features of these results are: (a) there are few relationships between masculinity scores and the indicators of mental health and symptom scores, and (b) where any significant relationships are observed there is no consistency between the two cohorts of women. Thus, in general, the tendency for women (and men) with higher masculinity scores to have more positive health which we observed when

Table 6
 Prediction for various health outcomes and behaviours
 by Bem masculinity score, unadjusted and adjusted for femininity score,
 social class, employment status and marital status.
 OR: Odds ratio; b1, b2: linear regression coefficients for linear
 and squared terms respectively

		Masculinity score			
		1950s cohort		1930s cohort	
		Unadjusted	Adjusted	Unadjusted	Adjusted
Health					
Anxiety score	b1	.02	-.06	-.01	.14
	b2	.13	.04	.54**	.56**
Depression score ^a	b1	-.03	-.01	-.09	-.04
	b2	.07	.05	.08*	.09*
Total symptom score ^a	b1	-.08	-.06	-.01	.02
Malaise symptom score ^a	b1	-.12*	-.12*	-.00	.01
	b2	.01	-.01	.10*	.10*
Physical symptom score ^a	b1	-.02	.00	.05	.07
Health behaviours					
Current smoker	OR	1.27*	1.27	1.02	1.09
Drinks in excess of recommended alcohol limit	OR	1.31	1.26	1.59	1.57
Number of units of alcohol in previous week	b1	.22**	.21*	.11	.06

* $p < 0.05$; ** $p < 0.01$.

^a Variable transformed by taking square root.

analysing data from the 1950s cohort at entry to the study (in 1987/8) (Annandale and Hunt, 1990) was not replicated in this analysis. In the younger (1950s) cohort, only malaise symptoms were significantly related to masculinity scores (with higher masculinity scores associated with decreased malaise as expected given our earlier report of better health in those with higher masculinity scores (Annandale and Hunt, 1990). Amongst the older cohort, the relationships, where seen, were not linear, but curvilinear. For the two measures of mental health (de-

pression and anxiety scores) and for malaise symptoms, it was women with the lowest and highest scores who had poorer health on these measures, whereas women with intermediate masculinity scores fared better on the health indicators.

Table 7
Prediction of various health outcomes and behaviours
by Bem femininity score, unadjusted and adjusted for masculinity score,
social class, employment status and marital status.
OR: Odds ratio; b1, b2: linear regression coefficients for linear
and squared terms respectively

		Femininity score			
		1950s cohort		1930s cohort	
		Unadjusted	Adjusted	Unadjusted	Adjusted
Health					
Anxiety score	b1	.72*	.58*	-.32	-.21
	b2	.60*	.59*	-.08	-.23
Depression score ^a	b1	-.03	-.07	-.15**	-.12*
	b2	.09	.08	-.05	.09*
Total symptom score ^a	b1	.05	-.02	.03	.02
Malaise symptom score ^a	b1	.06	.06	.07	.08
Physical symptom score ^a	b1	.03	-.02	.00	-.02
Health behaviours					
Current smoker	OR	1.69***	1.46*	1.04	1.12
Drinks in excess of recommended alcohol limit	OR	.83	.78	.81	.75
Number of units of alcohol in previous week	b1	-.17	-.18	-.021	.03

* $p < 0.05$; ** $p < 0.01$.

^a Variable transformed by taking square root.

The health behaviour variables were more consistently associated with masculinity scores in the younger group of women, with higher scores associated with higher rates of smoking and higher alcohol consumption (although the odds ratio was not significantly elevated for

drinking in excess of recommended levels). There was no relationship between masculinity and smoking amongst women in their early 60s in the 1930s cohort, and no significant relationship with either of the measures of alcohol consumption (although again there was a non-significant trend for those drinking over the recommended alcohol limit to have higher masculinity scores).

Again there were few significant relationships between femininity scores and health and health behaviour (Table 7), although higher femininity scores were significantly associated with higher scores on the anxiety score measure in the 1950s cohort. The strongest relationship was between femininity score and smoking in the younger (1950s) cohort; women who were current smokers had higher femininity scores. (The relationship between class, GRO and smoking in men and women in the 1930s, 1950s and 1970s cohorts in the face of general trends in smoking by class and gender has been explored in more detail elsewhere) (Hunt *et al.*, in preparation).

8. Discussion

The data presented here demonstrate very marked differences in indicators of gender-related attitudes and patterns of family formation (and reported material circumstances early in life) in two cohorts of women born just twenty years apart living within the same geographical locale. However, masculinity and femininity scores on a measure of gender role orientation did not differ greatly.

Relationships between these measures of gender role orientation and various aspects of health and health behaviour were weak, but differed between the two cohorts. Relatively few of the health outcomes examined were related to masculinity and femininity scores either before or after adjustment for other factors. Of most interest are the strong associations between higher scores on both the masculinity and femininity scales and smoking for women born in the early 1950s cohort. After adjustment for social class, employment status, marital status, and femininity score, a one point increase in masculinity score was associated with a 27% increase in the odds of being a smoker; the equivalent figure for a one point increase in femininity score was a 46% increase in the odds of being a smoker. Whilst it may seem counter-intuitive that both high masculinity scores and high femininity

scores are related to smoking in the 1950s cohort, this is less surprising in the light of current research on the complex gender-related processes which were involved in drawing different sectors of women into the smoking market. It is hoped that current historical and qualitative research on gendered identities and smoking amongst women which is ongoing in the west of Scotland may shed further light on these observations (Elliott, 2000a; Elliott, 2000b).

This paper shows: first, a diversity in experiences (e.g. patterns of marriage and reproduction, and material conditions in early life) that are likely to be very salient to the construction of gender and to the aetiology of health, even between cohorts born just 20 years apart; and secondly, that relationships between measures of gender role orientation and health, though not strong, differ for the two generations examined. In many quantitative examinations of gender or other dimensions of inequality in health, this diversity and difference would not be apparent a) because more detailed examination of various manifestations of gender over time are seldom possible within quantitative studies of health, and b) because it is commonplace (often to maximise statistical power and generalisability) to group together people within quite wide age bands, and thus to ignore or obscure important axes of heterogeneity and complexity. Thus, the lack of consistency observed here could reflect important changes in gender relations, or could reflect the vagaries of chance and a lack of statistical power to sustain more complex models.

There has been an increasing focus in recent years on the need to look at diversity amongst men and amongst women, by factors such as socio-economic status, employment status, or ethnicity. At the outset of this study we included a measure of gender role orientation, the Bem Sex Role Inventory, as another potential indicator of diversity among men and among women. We had intended to examine changes in occupancy of gender-related roles in relation to changes in gender role orientation, and to examine both in relation to health. Analysis of masculinity and femininity scores over time (data were examined over seven years), however, showed that the differences in people's gender role orientation scores were too small for robust analyses of change. Also, as demonstrated here, relationships between gender role orientation and various health measures were weak, although somewhat stronger relationships were seen for two key health behaviours.

In research on gender and health little attention has focused on trying to encapsulate and examine changes at a societal level, particularly in the policies and attitudes which affect gender relations in society. That these can occur over a short period of historical time is widely evidenced; yet seldom do empirical studies of gender and health take account of the social relations of gender at the 'macro-social' level; as Kawachi *et al.* have noted, a 'society and health' lens has been lacking (Kawachi *et al.*, 1999). Developing indicators of such change at a macro-social level presents another major challenge.

The data presented here raise methodological challenges for future research. How can diversity in the experience of being female (or male) at times of very different gender relations be operationalised in quantitative analyses? In an article which primarily focuses on the role of social system influences on gender differences in heart disease, McKinlay has noted that

"Epidemiologists customarily overlook the effects of social structural system influences on the distribution of diseases in human populations" (McKinlay, 1996, p. 7).

Improvements in statistical techniques, he continues, have helped to clarify the independent contributions of highly correlated variables such as education and race and:

"The increasing availability of large epidemiological databases, along with improved computing technology to manipulate these data, permits even further explanatory refinements. However, even when we are fairly certain that a specific factor (e.g. gender or education) contributes independently to health status or illness behaviour, we must keep in mind that that factor simply summarises complex information about a person's life" (p. 5).

Popay and colleagues have asserted that:

"Existing methods [in the dominant quantitative research paradigm] are simply not up to grasping the complexity inherent in the processes which shape health and illness [and therefore] epidemiologist's empirical investigations ... have left them dealing with surface appearances only .. which leaves the question of the social structure unquestioned" (Popay *et al.*, 1998).

Popay and Groves argue that, by contrast, qualitative research

"offers a means of exploring the relationship between agency and structures – that is between differences and divisions. In so doing, we suggest, this type of research points to the way in which patriarchal

ideologies and structures – albeit alongside and interacting with other social divisions – continue to mould women’s and men’s lives differently” (Popay and Groves, 2000, p. 64-65).

Qualitative research (see, for example, Graham, 1984; Walters and Charles, 1997) has indeed illustrated the way in which women’s experiences of the prevailing normative gender relations can profoundly affect their experiences of health. Yet, if the debate on gender and health is to move forward, both qualitative and quantitative research needs to take more account of research from both traditions and to the macro-social context of the research. As Rieker and Bird note “As with all research, conclusions are shaped by the research questions asked and by the definitions and measures of gender and health” (Rieker and Bird, 2000, p. 104). If we do not ask whether the specificity of historical time fundamentally changes relationships between indicators of the gendered experiences of women (and men), be it employment, parenthood, or marriage, and find ways to develop and incorporate more subtle measures of such changes, then we will be limited in the extent to which we can uncover the complexities of when and how such experiences accrue benefits or threats to health.

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