

1 Commonsense beliefs and psychological research strategies

Commonsense beliefs

Everyone has ideas about the nature of men and women and knows in a commonsense way what they are like. For most people throughout most of human history that was the whole story. Beliefs handed down through the generations provided a way of understanding first-hand experience so that the nature of men and women, and their place in wider society, became matters that were taken for granted. Today, those of us who live in liberal Western nations have become used to traditional beliefs about the natures of men and women being contested. No longer is there an unquestioned consensus about what is the natural order regarding women and men.

Nevertheless, many of our current commonsense beliefs derive from a time before public consciousness was challenged by modern feminist thinking. Admittedly, obviously sexist statements are easier to locate before this time, when they were more or less taken for granted by everyone. Such statements reflect a limited number of general principles about men and women.

The first principle is that women and men are fundamentally different. Consider the following lines from *A Hymn to Him in My Fair Lady* (© 1962 A. J. Lerner and F. Loewe), the musical version of Bernard Shaw's *Pygmalion*. The context is that Henry Higgins is puzzled because, after achieving a social triumph at the ball, Eliza Doolittle has disappeared. Henry laments about the nature of women:

Women are irrational, that's all there is to that!
 Their heads are full of cotton, hay and rags!
 They're nothing but exasperating, irritating, vacillating, calculating,
 agitating, maddening and infuriating hags!
 Why can't a woman be more like a man?
 Men are so honest, so thoroughly square;
 Eternally noble, historically fair;
 Who, when you win, will always give you back a pat!
 Why can't a woman be like that?

Such comparisons as this deliberately ignore our common humanity in favour of doggedly pursuing the differences between women and men. They are generalisations emphasising the fundamental difference between the sexes. Lest this be seen as of no relevance to today's world, since it is admittedly old-fashioned,

there are many examples of more contemporary discourses that echo the same principle. In David Lynch's early 1990s cult TV series, *Twin Peaks*, Agent Cooper remarked: 'In the grand design, women were drawn from a different set of blueprints.'

The second principle is that men are superior and women their inferiors. Henry Higgins is sure of this. These lines leave us in no doubt that women are not a patch on men. He contrasts women's emotionality with men's steadfastness. In other verses he comments adversely on women's intelligence, conformity, vanity, and sensitivity to slights. The reader may think that this is just one man's outmoded opinion of the opposite sex when one of them has upset his plans. Nevertheless, with the exception of some feminist writing, it is difficult to find comparisons which err in the opposite direction by presenting women in overwhelmingly positive light with regard to characteristics that are seen to matter in the world. Higgins' view is commonly found in writings from previous centuries where it is often given a religious backing. In Genesis for instance woman is presented as an afterthought, made with man in mind. As Tennyson wrote: 'God made the woman for the man.'

One paradoxical aspect of the belief that women are inferior is that they are often seen as nicer, more morally upright, human beings. This is reflected in modern studies of attitudes towards women and men described in chapter 2, and nursery rhymes such as little girls being made of 'sugar and spice and all things nice'. It is also reflected in contemporary discourse about masculinity, which excuses the thoughtless behaviour of young men in terms of the cult of laddishness, portrayed as entertainment in the British 1990s TV series *Men Behaving Badly*. In many ways, the distinction between men being effective in the world but not necessarily nice and considerate, and women being ineffective but nicer people, follows a distinction that lies at the heart of gender stereotypes (chapter 2), the attributes people ascribe to the two sexes. This distinction has been described as agency (or instrumentality) versus communion (or expressiveness). The first involves action in the world, which is seen as the province of men, and the second as nurturance and caring about other people, which is seen as the province of women.

A third principle reflected in Henry Higgins' lines is that women are seen as illogical and irrational. This is viewed as the negative side of being nurturant and caring about people, in that it involves being swept away by emotion. Men by contrast are viewed as being sensible and level-headed and therefore not so prone to be swept away by their emotions. One influential contemporary commonsense belief is that women's supposed emotional lability is the result of hormonal changes associated with reproductive events, such as menstruation, pregnancy, childbirth, and the menopause. Paralleling this belief is a strand of medical thinking which has sought to link mood changes among women to the hormonal changes underlying reproductive events. Research evidence does not support these commonsense generalisations, as we show in chapter 7. An interesting modern theme in media reports about young men is a tendency to attribute some of their inconsiderate and anti-social behaviour to high levels of the male hormone testosterone. Again, the research evidence (chapter 6) provides a more complex picture.

The view that women are emotional and men stoic conveniently omits the emotion of anger, which, although little different in the two sexes in terms of its ease of arousal, leads to far more damaging consequences when experienced by men (chapter 6). The situation of a trivial dispute which escalates into violence out of all proportion to the original incident is one that is depressingly common in the pages of our newspapers, and almost always involves two men, who are certainly not behaving rationally.

Commonsense beliefs about men and women are not arbitrary. They are associated with coherent ways of understanding the world in which we live, which for many centuries have been presented to each succeeding generation in the form of religious truths. From Charles Darwin's time onwards, science has replaced religion in providing a credible account of human origins, and of the impact of physical events on behaviour. In the Western world, commonsense beliefs have come to be derived from science rather than religious sources in media-led discussions of issues such as the attributes of men and women. As the previous example of hormones and the emotions shows, scientific findings have not necessarily been portrayed accurately in such discussions.

One common theme that can be found in traditional commonsense beliefs about the nature of women's and men's characteristics is that they stem from the societal roles the two sexes occupy, and that these in turn are based on their roles in reproduction. For example, women are seen as more caring and nurturant because they are the ones who bear and suckle the infants. Because men are freed from this constraint, their role is as protectors and providers for wives and children. Men therefore have both physical characteristics such as greater musculature, and mental ones such as greater aggression and striving for status in competition with other men.

Until recently, there was little need to seek explanations for beliefs about the different natures of men and women. In the Judaeo-Christian tradition, God created woman as the helpmate of man but not his equal. This was the natural order of things, and it is one that can be found in the teachings of other major religions. In modern secular states, as we have indicated, biological research and theories have been used to support the same supposed natural order. Biological knowledge was used to counter some of the claims of the first wave of modern feminist writings in the late 1960s and early 1970s (Archer and Lloyd, 1985). Similar views can be found in newspaper columns in the late 1990s, as this extract from a polemical column by Richard Ingrams in the London newspaper *The Observer* illustrates:

It is an indisputable fact about good music that almost all of it has been written by men. If you made a list of the top 50 composers – of popular as well as classical music – there would not be a single female name on the list. This has nothing to do with male subordination of women or anything like that. It is something to do with chromosomes or genes and nothing can be done to alter it. (Ingrams, 1999)

Ingrams goes on to castigate the British Arts Council for awarding £30k to an organisation that campaigns against the imbalance between the sexes in music by

encouraging female musicians. These aims reflect a different and very widespread view about the causes of the psychological attributes of men and women, one that emphasises the social environment.

This view has also been applied to physical sex differences, in that boys and men have traditionally been encouraged to take part in sports and body-building activities whereas girls and women were restricted to less demanding physical pursuits (Lowe, 1982). From the modern perspective of women running marathons, engaging in kick-boxing, and playing soccer, we may forget that women were excluded from most sports during the first half of the twentieth century (Cashmore, 1999). This exclusion arose from assumptions held about women's bodies, in the form of commonsense beliefs which received emphatic backing from medical opinion of the time. One example is middle- and long-distance running, which were regarded as too exhausting and dangerous for women until comparatively recently. Another is the case of women's soccer in the UK. In 1917, a successful team (The Dick Kerr Ladies Football Club) was formed in Preston, Lancashire, playing teams from all over the country over the next four years, in famous stadiums and in front of crowds in the tens of thousands (Newsham, 1994). By 1921, there was a growing lobby against women's football, enlisting the support of medical practitioners, whose 'expert' opinion was that soccer was a dangerous pursuit for women. The British Football Association announced at the end of 1921 that soccer was unsuitable for women and should be discouraged. This they did by requesting clubs belonging to the association to refuse use of their grounds to women's teams. Cashmore (1999) argued that medical opinion that women's bodies were unsuitable for engaging in sports and athletics arose from a view of the human body, prevalent in medical texts over the last 300 years,¹ that emphasises sex differences at the expense of common features. Later in this section, we return to the issue of emphasising differences between men and women rather than their common humanity in relation to psychological differences.

The process whereby social values are transmitted to the next generation is colloquially known as conditioning (a different usage from that in psychology, where the term denotes the technical procedures first outlined by Pavlov). When it involves a narrow agenda concentrating on a specific set of values, the term indoctrination is used to denote disapproval. According to the conditioning view, sex differences in temperament and ability are seen in terms of societal pressures that have in most societies resulted in women's subservience and underachievement. They are the consequence of patriarchal values being learned by each succeeding generation as a result of men being in positions of power and influence in all human societies. Men's power is not viewed as God-given or the inevitable consequence of the biological roles of men and women. This view of the potential malleability of men and women is similar to that associated with feminist writers who emphasise the potential for similarity in men and women ('liberal feminists' or 'liberal equity feminists'), and it has had a widespread general influence on educated opinion in Western Europe and North America.

¹ A more accurate reading of Laqueur (chapter 5) would place this at 200 years.

In the first wave of public debates about the role of women that followed feminist writings of the 1960s and 1970s, the contrasting views of sex differences as arising from conditioning or from the natural order were associated with different opinions about the desirability – and the ease – of change. To believe that men's and women's temperament and abilities were different as a result of patriarchal conditioning meant that they could be amenable to change through a different non-patriarchal upbringing. This view focused on the conventional upbringing of boys and girls that thrust dolls into girls' arms and encouraged competitiveness in boys from an early age (chapter 4). The challenge was to devise a way of bringing up children that avoided this overt indoctrination into patriarchal values. This egalitarian view of men and women emphasised the inequity of current social arrangements, and sought to rectify it through social change, in the form of non-sexist rearing of children, egalitarian education, and also legislation that challenged patriarchal practices.

The view of the malleability of men's and women's nature produced counter-arguments from those who believed in the natural order and saw attempts to change existing arrangements as potentially disastrous. One bastion of conservative thinking about gender, the prolific romantic novelist Barbara Cartland, put it thus: 'All this striving and clawing into a man's world will eventually end in tears.' The implication here is that, since it is not natural for women to compete in a man's world, for them to try to do so will be so against the natural order of things that it will lead to personal unhappiness and non-fulfilment.

An interesting parallel to the conservative viewpoint that emphasises differences between men and women are two strands of feminist opinion. Cultural feminism (Henley et al., 1998) emphasises the undesirability of male characteristics and the positive nature of women's values, and is similar to psychological accounts that emphasise the different values of men and women (e.g., Gilligan, 1982). Radical feminism (Beasley, 1999; Henley et al., 1998) views the oppression of women as the most deep-rooted, widespread, and fundamental form of oppression of any social group. Although there is generally a reluctance by most feminist writers to seek the origins of these differences in biology, some of the arguments parallel those derived from modern evolutionary thinking (Wright, 1996).

A related issue that has been debated among feminist psychologists is whether we should be looking for differences between the sexes or whether we should be emphasising the overlap in many psychological characteristics, i.e. our common humanity. Feminist psychologists who have studied sex differences in social behaviour, notably Eagly (1987, 1995a), and those who have studied such undesirable male features as violence towards their sexual partners and rape, such as Koss et al. (1987), and Walker (1989) have – for different reasons – defended the strategy of looking for differences between men and women. Others have viewed the emphasis on differences as turning attention from what women and men have in common. This division loosely follows a fundamental split between liberal and radical feminists (Beasley, 1999; Henley et al., 1998), between those who emphasise equality (the assimilationists), and those committed to more fundamental social change, including the assertion of women-associated values (integrative or transformative feminists: Miles, 1996).

Commonsense influences on psychological research

Scientific research and commonsense beliefs

Unlike many other belief systems, such as those in the religious or political sphere, scientific research does not (or should not) involve a set of dogmas, but instead provides a way of deciding between competing explanations of the natural world. It therefore seeks to be objective, open, public, and accountable. Yet, at the same time, science is an enterprise as located in society as any other, and is therefore subject to political and religious pressures. There are many well-known examples of this, from religious opposition to the ideas of Galileo, to the suppression of Mendelian genetics in the Soviet Union.

These examples involve obvious and overt pressures on the development of scientific knowledge. It is only fairly recently that women have made up more than a tiny minority of those researching in the human sciences. In many ways, the development of the various disciplines within this umbrella term was constrained by masculine viewpoints and interests. Topics such as animal sexuality and aggression, both of interest to human psychologists, were researched from a viewpoint that tended to neglect the part played by females. Accounts of human evolution neglected the female side of human life until around 25 years ago, when women anthropologists became active in this field (e.g., Hrdy, 1981; Slocum, 1975).

This male-centred, or androcentric, view of the human sciences has now been exhaustively discussed and analysed by feminist writers on science. It is perhaps worth mentioning that it did not arise from a specific and conscious conspiracy on the part of male scientists, but from the impact of their commonsense views of the world on the way that science was carried out. Although the scientific method itself is a neutral process, in that it provides an objective way of deciding between alternatives that scientists set up, the generation of these alternatives (hypotheses) in the first place, and the way that findings are interpreted, are strongly influenced by the conventional thinking of the day. It is here that commonsense explanations – including those about men and women – come into play.

Perhaps the most pervasive way that commonsense views of the world impact on scientific research is in terms of agenda-setting. Certain topics are deemed worthy of investigation, whereas others are not, or more commonly not even entertained as possibilities. Thus it would be fair to say that investigating women's issues was largely out of bounds in the earlier part of the twentieth century, whereas it became fashionable in Western social sciences from the 1970s onwards. Certain other ideas about human social behaviour, that it can be influenced by bodily symmetry, or by bodily secretions, or by sperm competition, were only introduced into the realms of empirical debate as a result of the evolutionary ideas that were generated since the 1960s (see chapter 3). There would have been no reason for a conventionally trained social psychologist to have even entertained the idea that people's degree of bodily symmetry has an impact on their sexual attractiveness. It was not part of an agenda set by the commonsense view of the world that informed conventional

social psychology. In contrast, many of the ideas derived from modern evolutionary thinking seem counter to everyday commonsense. Tooby (1999) has argued that in this sense Darwinian thinking is similar to quantum theory, which also generated counter-intuitive hypotheses. He wrote:

The world Darwin and Wallace led us into is every bit as strange as quantum mechanics: A world of chemical replicators, billion-year-old cellular symbiosis, intrauterine siblicide, intragenomic conflict, kin-selected self-sacrifice, chemical computers, fish that change sex in response to social status, parasite-driven sexual recombination, brood parasites mimicking host offspring appearance . . . No novel, no film, no philosophy, no deliberate dissident attempt to rebel against everything orthodox is remotely as outlandish as these discoveries . . . The strange Darwinism that is transforming the scientific world is simply beyond the conceptual horizon of any existing lay culture, nonbiological scientific community, or even most biologists. (Tooby, 1999:1–2)

Certain forms of research have been constrained by considerations of morals and taste rather than by the consensus of commonsense beliefs about the world. Research on sexuality is of course a prime example. It is well known that Kinsey only came to the study of human sexuality after many years spent establishing a reputation in a conventional area of zoological research (Lloyd, 1976). In recent times, the socio-political climate is much more accepting of research that inquires about people's sexual activities. Nevertheless, there is still resistance when a scientist goes beyond collecting accounts. Research by Robin Baker and Mark Bellis (Baker and Bellis, 1995) on sperm competition not only went out on a limb in terms of the conventional ideas held in reproductive physiology at the time, but also involved techniques that some people regarded as intrusive of people's privacy and dignity. The research was based on ideas from evolutionary biology about subtle psychological influences on reproductive physiology. It was only possible at all because of the willingness of male staff in a large university biology department to collect, in condoms, samples of their own sperm that were ejaculated during intercourse, and the willingness of female staff to collect samples of their partners' sperm that flowed out of their vaginas after intercourse.

The available research evidence on which we base our account of sex and gender has therefore been framed by both commonsense views about men and women, and also – with a few exceptions – by what is regarded as acceptable and sensible to investigate. Both of these vary greatly depending on the socio-political context, that is, the time and place of the research, and they both influence and constrain what is available on any specific topic. Nevertheless, we should note that the social climate in the USA and other Western nations has been very accepting of research on topics connected with sex and gender over the last few decades of the twentieth century. Had we still been operating in the socio-political and scientific climate of the 1950s, there would have been no feminist²-inspired

² This term is here used in its broadest sense: see Beasley (1999) for a detailed discussion of the variety of feminist thinking.

research, i.e. little research on issues important to women but not men; very little sex research (certainly nothing involving intrusive techniques); and no research on issues highlighted by evolutionary analyses. This would have added up to an impoverished agenda that would have hardly merited a book at all. In many parts of the world today, women are even less publicly visible and politically effective than they were in America and Britain in the 1950s. In Iran, for example, when Khomeini's revolutionary Islamic regime was established in 1979, women were forced to stay in the home and to wear the chador (Moin, 1994). In more recent times, even more stringent restrictions on women's lives were forced upon them during the Taliban's control of Afghanistan. There is understandably little or no research evidence on gender issues available from such countries.

Similarities and differences

Within Western culture where most of the research is located, commonsense beliefs have influenced the way scientists have approached the study of men and women. In particular, a belief in the fundamental difference between women and men is paralleled by an influential scientific approach, one seeking differences rather than emphasising our common humanity. The search for differences is not necessarily associated with a belief in fundamental differences between the sexes. Once differences have been established, a matter of further dispute is whether they are rooted in cultural or evolutionary history, explanations that correspond to commonsense views involving, respectively, 'conditioning', and 'the natural order'.

There has been considerable debate between feminist psychologists about whether emphasising sex differences is detrimental to the aim of creating a climate of equality between the sexes (e.g., Eagly, 1995a; Hyde and Plant, 1995; Marecek, 1995). The issue of whether there are intellectual differences between men and women has been debated since the nineteenth century (e.g., Woolley, 1910). Pre-feminist research on individual differences (e.g., Anastasi, 1958; Garai and Scheinfeld, 1968) contains accounts of how men and women differ in specific intellectual domains and personality characteristics, although these generally arose from incidental findings rather than a deliberate intention to look for differences. The modern feminist movement that began in the 1960s stimulated renewed interest in whether men and women differed psychologically, and, if so, why they did. It was these concerns that led Maccoby and Jacklin (1974) to assemble an encyclopaedic summary of the evidence that was available at the time. They concluded that there was only good evidence for sex differences in three intellectual domains: linguistic, visual-spatial, and mathematical. Women were better at the first, and men were better at the other two. Men were also more aggressive than women. Their conclusions were reached as a result of examining studies comparing men and women for a wide range of psychological attributes.

To evaluate these and other claims about ways in which men and women differ, we need to examine what lies behind the term 'sex difference'. It usually refers to a statistically significant difference in the mean values (or average performances)

of men and women on a particular measure. However, these can range from cases where there is no overlap in the two means – for example in physical attributes such as possessing a penis or a womb – to those where there is considerable overlap – for example in height. Most psychological sex differences exhibit overlapping differences.

The criterion Maccoby and Jacklin used to identify differences was statistical significance, in other words, that the differences were unlikely to have arisen by chance. They examined each study and recorded whether there was a significant difference in one or the other direction, or no statistically significant difference. A vote-counting procedure was used to add the total number of significant findings in the same direction. There is, however, a fundamental problem with this method. Statistical significance is a measure of the reliability of a particular finding. When it is used to count the cumulative impact of individual studies it considerably underestimates differences that are small in magnitude. This, and the omission of a number of characteristics that later turned out to show large differences, has led Maccoby and Jacklin's synthesis to be viewed as unduly conservative, erring on the side of no differences. Their conclusion supported a dominant strand of feminist thinking at the time; it emphasised the similarities between men and women, rather than their differences, as part of a campaign for widening women's educational and occupational opportunities (chapter 9).

The idea that we should be emphasising our common humanity rather than seeking to find differences between men and women is one that has been maintained up to the present day (e.g., Archer, 1987; Beaumeister, 1988; Marecek, 1995). Eagly (1995b) identified it as resulting from the feminist movement's influence on the emerging consensus surrounding the study of sex differences. However, the extent to which there was or still is such agreement can be questioned, since there has always been a strong tradition within North American psychology that has emphasised the study of differences. The tradition, of which Eagly is a leading contemporary exponent, is now associated with several methodological and theoretical innovations in psychology. One of these is the introduction of a new set of statistical procedures called meta-analysis, and another is a shift in interest to examining sex differences in *social* behaviour.

Meta-analysis refers to a set of statistical techniques that allow researchers to combine findings from many different studies, and to compare subsets of findings within a collection of studies (e.g., Eagly, 1987; Rosenthal, 1984; Willingham and Cole, 1997). As long as the comparisons are made between standard categories (such as male and female), and involve comparable measures (e.g., mathematical ability), the procedure is extremely valuable for assessing and making sense of an entire area of research. We referred to reservations about Maccoby and Jacklin's synthesis of the available research, because it was based on numbers and direction of significant differences across studies. Statistical significance is a measure that is dependent on the size of the samples used in particular studies. The basic measure of meta-analysis is not dependent on the sample size, and does not have an arbitrary cut-off point as does statistical significance. It is a measure of the magnitude of a

particular effect, or the average difference between individuals in the two categories in a study, rather than the reliability of the difference.

This measure is the 'effect size', which is the difference between two mean scores, expressed in terms of the common standard deviation of the sample, which is a measure of the dispersal of the values around the mean. By using this standard measure, it is possible to summarise and compare the size of differences between categories across a variety of psychological attributes. It is a particularly appropriate statistic for sex differences because the categories being compared – male and female – are the same from study to study.

An early conclusion drawn from examining the magnitude of sex differences, rather than their statistical significance, was that these differences were small, even 'trivially small' (Deaux, 1984; Jacklin, 1979). Hyde (1981) reanalysed Maccoby and Jacklin's data on intellectual test performance, and found effect sizes of 0.24 (of a standard deviation) in the female direction for verbal ability, and of 0.43 and 0.49 in the male direction for numerical ability and spatial ability respectively. She characterised these as small in practical terms, because they could not readily explain the much larger differences in occupational roles associated with these abilities, for example in science and engineering.

Hyde's inference would seem to be straightforward. However, a number of other considerations have been raised since that complicate it. These are considered in more detail in chapter 9, but two are outlined here. The first is that effect size provides us with only a summary statistic for the difference between typical individuals taken from two contrasting populations. As Feingold (1995) explained, at the highest and lowest ends of the distribution, there will be considerably more individuals from one population than from the other, even if the effect size is small. Therefore, there will be considerably more of the group with the higher mean score among the higher levels of ability (and correspondingly, more of the group with the lower mean score among the lower levels of ability). The practical implications of this again run counter to the conclusion that 'small' effect sizes are unimportant. Feingold (1995) also showed that, if one of two groups had a wider distribution than the other, this would result in more of this group being found at one of the two ends of the distribution. Which end this is depends on whether the group has the larger or smaller mean score: if it has the larger score, it will be overrepresented at the high end, if it has the smaller, it will be overrepresented at the lower end (Fig. 1.1). These considerations have practical implications because it is men who have wider distributions than women for certain intellectual abilities, which when combined with higher average ability, can produce considerably more men than women in the higher ability range (Feingold, 1992b). The implications of this are discussed further in chapter 9.

A second point about Hyde's characterisation of effect sizes in specific abilities as small is that, if we take findings within the social sciences generally as the reference point (Cohen, 1988), the differences range from small (verbal ability) to medium (quantitative and spatial abilities). Subsequent meta-analyses have shown much larger sex differences for certain subcategories of mental abilities