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**GENDER AND THE BRAIN:  
ROUNDTABLE DISCUSSION WITH BARONESS  
PROFESSOR SUSAN GREENFIELD**

**Susan Greenfield and panellists  
(Kate Leeson, ed)**

Hawke Research Institute  
University of South Australia  
Magill, South Australia  
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**GENDER AND THE BRAIN:  
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This paper is a summary of the discussion at a roundtable on gender and the brain held on 4 August 2004 at City West Campus of the University of South Australia, Adelaide, presented by Adelaide Thinkers in Residence and the Office for Women, South Australia. The guest of honour at the roundtable was Baroness Professor Susan Greenfield, neuroscientist and Senior Research Fellow at Lincoln College, Oxford University and the then Thinker in Residence with the South Australian Department of Premier and Cabinet. A panel of experts included Anne Howe, Chief Executive of SA Water; Brenton Wright, Director of Lizard Drinking; Judy Morris, convenor of the Centre for Neuroscience at Flinders University; Dr Philip Gerrans, Department of Philosophy, University of Adelaide; Jeff Walsh, Commissioner for Public Employment; Franchesca Cubillo, Artistic and Cultural Director of the Tandanya National Aboriginal Cultural Institute; and Tahnya Donaghy, women's officer of the Australian Education Union (SA). Biographies are provided at the end of the paper. The roundtable discussion was chaired by Professor Eleanor Ramsay, of the Hawke Research Institute, University of South Australia, and an invited audience included representatives of the public service and the South Australian universities.

The discussion ranged over many areas, including brain structure, gender, race and culture, management styles, institutionalised sexism and racism, learning styles, the future of work and dementia. This paper is an edited version of the discussion, re-arranged so that related comments appear together.

**Background on the brain**

*Susan Greenfield:* It is difficult to draw conclusions about human behaviour from physical markers in the brain. If you note a difference in the brains of people with certain characteristics you don't know whether it is a cause or an effect of the behaviour. For example, if you see low levels of a chemical messenger called serotonin and the person is depressed, you do not know what caused the other: whether a depressed condition drives down levels of serotonin or whether low levels of serotonin make you feel depressed. We can't be sure of cause and effect.

The other thing we can't be sure of is how much we apportion to genes versus the environment. In fact, the old distinction between nature and nurture no longer really holds. A gene makes a protein and that protein contributes to the baggage, if you like, of the way one brain cell sends a message to another brain cell via transmitters like serotonin. Gradually those circuits build up into complex assemblies of brain cells and those complex assemblies of brain cells will make what we call brain regions that are visible with the naked eye as clear, anatomically distinct macrostructures. Eventually that makes the whole brain and, as you know, it is the brain that is the seat of all individuality, consciousness, and so on. That's another story, one for the philosophers.

So it is very hard to see exactly what genes do in the brain. They do not have homosexuality or being nice or being good at cooking trapped inside them. All a gene will do is make not just one protein but a variety of proteins and also trigger other genes to be switched on. So you can't trace a simple causal link between one gene, one protein, one action in the brain and then one final effect.

The other thing that people don't realise is that genes are switched on and off throughout your life. You don't just have them or not have them. And you don't just have them switched on and that's it. They can be switched on and off by the micro environment, which in turn mirrors the macro environment. So, at every stage you've got divergence away from a simple, causal one-to-one relationship. A gene can make more than one protein, it will switch on other genes and it will be switched on and off.

An example of how difficult it is to attribute a causal relationship even between a single gene and a single mental disorder is an experiment a few years ago on mice who had the genetic disease Huntington's chorea. For mice living in an enriched environment, that is to say, a world full of little ladders and wheels, the age of onset was much later and the degree of impairment was much more modest than in the genetically identical control group. So even in a mouse brain, even for a single gene disorder, you can't jump from a cause to a final effect.

### **Gender differences and the brain**

*Susan Greenfield:* Trying to find a significant difference between women's brains and men's brains simply by virtue of our genes is very complex. We are constantly interacting with our environment. As we grow our brain mirrors what happens to us and in turn shapes how we see the world. This is done by switching genes on and off as the micro environment mirrors the macro environment.

All that said, then, what can we say about a woman's brain in a generic way? Well, if one man and one woman took their brains out you would not be able to tell who was the man and who was the woman. However, if we all took our brains out, and we had a large enough sample, on average the corpus callosum would be bigger in the women than the men. The corpus callosum is a kind of motorway, a tract, linking the two hemispheres. The corpus callosum has featured in a lot of experiments where, for either congenital reasons or for surgical intervention, it is severed, yielding so-called split brain patients. This is a misnomer because these patients retain a unified sense of self, and in any case there is another fibre tract further forward in the brain called the anterior commissure that is intact.

Nonetheless, there has been speculation about what it means for a woman to have a bigger corpus callosum. If you look at brain scans of women, under certain conditions and for certain tasks their brains 'light up' on both sides more than men's do. (When I say 'light up', what I mean is that certain areas of the brain are working hard and therefore using more oxygen or glucose, and these can now be measured and artificial colour added to represent this on the computer screen.) For certain tasks it seems that both sides light up for the women. One theory is that this accounts for that well-known female phenomenon of multi-tasking. My own view is that it's not as simple as that because we have the anterior commissure, men have a perfectly good corpus callosum as well, and it may be that we have different areas of specialisation in different ways or we process tasks in different ways, rather than it being a problem of traffic between the two sides.

So that's really the only difference in brain structure between men and women, but there's much more to the brain than structure. You can't just look at structure and expect to understand function. There are all-important chemicals, the transmitters, that are an index of how one brain cell is working with another. Not only must you look at levels of chemicals, but also at which chemicals there are. And obviously the one that is prevalent in men compared to women is testosterone. Of course, we have oestrogen, and what is interesting about this difference is that we are now discovering that oestrogen has an important role in memory. It's touted as one possible new therapy for Alzheimer's disease. It's believed that the greater prevalence of dementia in post-menopausal women may be due to the drops in oestrogen levels. So when we are looking at the brain, we cannot just think of structures and their functions and then point to the women's bit and the man's bit.

So we can't say that gender differences are all caused by genes. We can't say that it's all because of women's larger corpus callosum, and we can't expect just to look at structure and see some kind of area that lights up as some magic woman's brain.

Nonetheless there are differences between men and women in certain structural and also chemical or brain scan data.

*Question from audience (Alison Mackinnon, Director, Hawke Research Institute, University of South Australia):* I'm a historian and I wonder if there is anything other than culture operating in beliefs about gender. I think back to about 150 years ago when only a very tiny minority believed women could be educated, nobody believed they could vote, and nobody believed they would be capable of undertaking any sort of complex tasks. And we have proved many of those things to be wrong. Can you actually train the brain over time to do things differently so that perhaps if you were to look at women's brains now and 150 years ago, or even go back 500 years, does the fact of usage of various parts of the brain which may have been denied in the past bring about some sort of physiological or hormonal changes that not only change the brain but do indeed change behaviour?

*Susan Greenfield:* Evolution works much more slowly than one or two generations. On the other hand you certainly can train the brain and you can change it quite radically. Look at something like cognitive therapy for people who are depressed, which is showing that you can radically change the way that someone views the world and indeed the consequent impact on their emotional make-up. So I wouldn't think that genes change over a few generations, but certainly the culture and the values you are born in and the difference between us now and then certainly would make a huge difference to the connections formed in the brain.

*Tahnya Donaghy:* Susan, we will talk today about gendered behaviour, such as women having less confidence, being less concerned about status and being more likely to work collaboratively. When I looked at women who got into politics, these gendered characteristics were seen as the main obstacles. The way people have tried to improve women's political representation has been to look at political parties and their cultures, to establish mentoring, improve confidence, and get women to put themselves forward. But what you're saying, I understand, is there's a neurological element to this.

*Susan Greenfield:* Basically the whole issue is that you can't separate out neurology from sociology. You are your brain. Everything you do is reflected in the microcircuitry of your brain and conversely the microcircuitry of your brain will dictate or guide how you see the world. And you are changing every moment according to your brain circuitry. I know it is a rather strange thought because we like to think of ourselves as somehow separate from the squalor of the neurons and chemicals and so on, but we are our brains. That's not to say that we can't have strategies or initiatives that work at the social level, but everything we are doing will

be reflected in the brain. Perhaps eventually one could measure levels of testosterone, oestrogen or oxytocin as one was going through training periods, for example, but you would never know what caused what. All you would know is that the two might go hand in hand in the case of humans. But, certainly, that is not to say one shouldn't institute such training schemes.

*Judy Morris:* One thing that really strikes me about studies on gender and the brain, whether they be sociological or anatomical or physiological, is that the smaller the sample size the more likely it is that a significant difference is found between the genders. In the larger population studies with thousands of people the differences are really very small. So there's an enormous range of anatomical, physiological, behavioural aspects across females, just like males, and, as Susan points out, when you get the average it may be a very small difference. By and large it's the individual difference that comes very much from a basic genetic, physiological and hormonal framework built on sociological effects, which I think start very early on, way before children go to school, and a whole lot of other things that are affecting us all the time.

*Question from audience (Carol Treloar, Department for the Arts):* I'm interested in the possible link between lack of oestrogen and dementia. I wonder is there similar research on the onset of dementia in men?

*Susan Greenfield:* Both genders suffer from dementia. Oestrogen is just one of many factors that can cause the slow dismantling of the connections, which is what dementia is. But one of the factors that doesn't help women is that suddenly we have less oestrogen. But on the other hand we can have oestrogen therapy.

Research into dementia occurs at all levels: epidemiology, research into pesticides and herbicides, aluminium, genetic predispositions, diet... My own approach is to try to find the cause, the basic mechanism, and then combat that. Another approach is to develop early screening and diagnosis so that you can try to stabilise it.

*Judy Morris:* I came across a recent paper that found a link between testosterone levels and Alzheimer's disease. I think that hormone levels in men dropping in older age could also have an effect. On the other hand, many of the effects of hormones on the brain are due to oestradiol, for both men and women because testosterone breaks down to oestradiol, so the active hormone acting on many of the receptors in the brain is the same for men and women.

*Philip Gerrans:* There was a paleontologist and anthropologist at Harvard called Robert Sapolsky who has devoted his life to testosterone, among other things. Among

the male baboons he studied, and presumably men too, testosterone is highly correlated with cortisol stress chemicals because it's an aggression or fighting chemical. This explains the early death of men in most societies and in most primate communities. More testosterone might be good for revving you up for competition when you are younger, but it's not good in the long term. He has actually proposed that men might be genetically engineered to switch off their testosterone production after a certain time and reduce levels of cortisol for their own good. One reason men may not be getting Alzheimer's is because they die younger anyway and it is a disease of ageing.

*Susan Greenfield:* If you offered men a choice between testosterone and keeping their brains intact I wonder what they would choose!

### **Gender, equality and the different behaviours of women and men**

*Susan Greenfield:* The next issue is gender differences in behaviour. On the whole, women tend to be able to keep lots of things in mind at once, whereas men are focused. Now I'm quite comfortable with this extension of the idea of multi-tasking, because it would have an evolutionary significance. Men are traditionally the hunters and need to be highly competitive, highly aggressive (hence the testosterone) and highly focused on their quarry at the expense of other things, like the car keys. Women, on the other hand, seem to be able to relate many things. I've noticed this in my own research lab. The women tend to be comfortable looking at complex factors and their interrelationships in a certain scheme, whereas men want to just press on and know the answer. A woman will produce flow charts and diagrams of something; a man will want to come up with a single convergent answer. Again, I'm generalising widely and we know the dangers of stereotyping, but I think part of this workshop is to ask us to stereotype.

Also, in my work environment, I find that the women tend to disparage themselves, they tend to be less confident, they work more by consensus, they do not seem so concerned about status, they have poorer sensory motor coordination, and we know that they have a poorer sense of direction. All these issues mean that they do work differently from men. We're beyond the idea now that men and women are the same. I think what we're all here for this afternoon is to ask how we can play to the strengths of both sexes.

*Philip Gerrans:* Typically male rat pups are better at navigating mazes and female rat pups are better at keeping track of social relations, that is, who's the mother, who's the father, who they're related to. And some mother rats nurture and groom their pups a lot, while others are more neglectful. In one experiment rat pups from neglectful

mothers were either groomed by the researchers or given to the grooming mothers. And after this early period of grooming the male rats' social intelligence, so to speak, improved, and the female rats were better able to run mazes. It seems that grooming produces more oxytocin receptors in the hippocampus, and the behavioural effect is to round out the personality of the male and female rats.

Another, more psychological, experiment was conducted on boys and girls at the primary school level. Boys were given a video camera and asked to collaborate and make a little film. They always smashed the camera. You could give them cameras over and over again and they would fight over them. But when girls were given the camera, they passed it around and shared and came back half an hour later with a little film.

Another experiment sought to find whether Machiavellian intelligence, meaning manipulating other people, is expressed differently in boys and girls. People often assume that boys are more Machiavellian and girls are more nurturing and sharing. The researchers asked some primary school children to trick another child into eating a biscuit soaked with quinine, which tastes revolting. The more biscuits they could get the other child to eat, the more chocolate biscuits they got themselves. The proportion of boys and girls who did it was the same, but the way they did it was different. The boys were quite happy to say 'Yeah, tricked you. Now you can't eat the chocolate biscuits. They're all mine.' The other boy might be distraught, but that was just tough. But in the case of the girls the relationship is not broken; it's often strengthened by the fact that the junior partner has been manipulated into humiliating herself. Quite often the Machiavellian skill consisted in presenting the task as one in which the two of them were allied against the experimenter or 'I really wanted to give you the chocolate biscuit, but now I can't, so you'll have to eat another one.' So one of the girls ended up being submissive and eating more and more of the disgusting biscuits, but the relationship was intact.

*Susan Greenfield:* There was an experiment with 7 or 8 year olds who were ostensibly waiting for something to happen. While they were waiting there were lots of toys at their disposal. Pair after pair of little girls half-heartedly picked up the toys, while saying 'What does your mummy do? What does your daddy do? How many brother and sisters have you got? What are you going to be when you grow up? What's your favourite colour?' The boys said 'You be red. You be blue. You go there.' There was no attempt to find out about each other at all. This again bears out this issue of relationship building. Perhaps women are just as power hungry or status conscious as men, but we do it via our skills at building and manipulating relationships. They do it with their fists and their testosterone.

*Eleanor Ramsay:* We are not just talking about difference. Our society and any society I've studied puts a premium on stereotypical male values, so we are talking about the creation of superiority and inferiority. Even if there are physiological reasons for women being tentative, there are massive cultural reasons, since from the moment of birth we have been educated to believe that we are inadequate in a whole range of ways, but particularly in contrast to men. And on the other hand men and boys have learned the opposite and that becomes the problem in any context: industrial, management, leadership, employment, political. And that's learnt very, very young. Whether there's any connection between the differences you've mentioned and the brain, or whether that is conveyed through powerful cultural messages at a very early age, all we can do is address the damaging implications for both sexes.

*Comment from the audience (Linda Matthews, South Australian Equal Opportunity Commissioner):* I'm encouraged by the move away from physiology. Recently my Victorian counterpart was celebrating 25 years of a landmark discrimination case where a woman won the right to be an Ansett pilot. At the time the arguments made by the chairman against female pilots were physiological, that is, that a woman could not do the tasks a pilot does, and they even raised the issue of her managing her period in a plane. So I'm encouraged that in the last 25 years those issues have largely disappeared. Mostly people think that it is cultural factors that are contributing to any prejudice and stereotypes. Most people accept that men and women are different, but where it is still problematic is where there are views that women are somehow inferior.

*Susan Greenfield:* I was talking to someone from the British Army, and I said 'How do you handle the fact that often what you are asking soldiers to do comes down to physical things?' He said 'We have two policies: gender free and gender fair. For gender free tasks, whoever can climb this wall at this speed with this weight on their back gets the job. If you can't do it that's tough.' So, if a woman can reach that level of physical fitness that's fine; if she can't she doesn't get the job. And 'gender fair' means providing equal opportunities for tasks that do not rely on physical prowess.

*Eleanor Ramsay:* In the early days of the women's movement we wanted to combat the stereotypes about men and women. We wanted to say that everyone should be able to reach their greatest potential and that sexual stereotyping limits opportunities for both sexes. Then in the 1980s we recognised that men's and women's life conditions are different and that unless we build organisations that cater for those different life conditions then there will be built-in discrimination. And now we are saying there are actually some differences that may be positive. I can see how at a management level or a leadership level this is a very challenging mix.

*Comment from the audience:* I'd like to comment that we're all gendered all the time. But gender is raised when gender is a problem. So there is a high correlation between the topic called gender and the topics called pain, hurt and anger. Then the debate around the topic called gender is not very useful or productive. So the question is how can our organisations think about gender, because we all bring it with us all the time anyway, and talk about it in ways that are fun, interesting, enjoyable, pleasurable and playful?

*Susan Greenfield:* We need to think of short-term strategies that move us forward. We are not going to change the male psyche in three months. We need to think of ways in which women can play to our strengths. Getting women to laugh at men is always a good one, because once you can laugh at something it puts it in its place. Instead of letting it corrode away at you, and then lashing out and being accused of being neurotic or unstable, go off with another woman and just have a laugh about it. If you can make it unimportant for yourself then it's not important. If men do have a superior attitude, it will be interesting to see how they respond to women who seem confident and happy and have good senses of humour.

### **Culture, race and belief systems**

*Franchesca Cubillo:* I'm intrigued by indigeneity and race and culture, and of course how that is reflected in the brain.

*Susan Greenfield:* This is a huge area, so let me start with a specific experiment. Japanese people, as you may know, can't distinguish l's from r's, so that's why they say rather charmingly 'Have a nice fright', meaning 'Have a nice flight'. Some researchers tested Japanese and western babies to see whether they could distinguish between l's and r's. They found that when a child is first born, whether they be Japanese or western, they can distinguish those sounds. But even at six months the Japanese children's brains had become Japanesified, as it were. This shows that we are born as citizens of the world. And that is the most marvellous thing about human beings. We occupy more ecological niches than any other species on the planet. What we are very good at doing is adapting very quickly to whatever circumstance we are born into. Yes of course we have genetic predispositions, but they will favour certain proteins, rather than predetermining characteristics. We all know from studies on genetics that there is very little difference between people of different races, despite skin colours and feature differences. These are literally superficial compared to our genetic disposition. It is culture that forms who we are and it happens very quickly.

Let me give another very simple example. London taxi drivers have to learn how to navigate the one-way streets of London, and even as adults you can see how this changes their brain scans in the hippocampus. So my own view is that differences are caused by culture and the environment, and that race per se is not the issue. The experiments showing racial differences in IQ are infamous, but it has been shown that the differences lessened as the generations became better educated. So the IQ tests were testing something that was culturally biased.

It would be extraordinarily interesting to study when culture has maximum impact on an individual and how reversible it is. And indeed how someone born in an Indigenous community would be different from someone not, for example what skills they have. For example, Indigenous children have a much better spatial memory than their non-Indigenous counterparts. My own view is that would come from constant repetition in their environment because that would be at a premium in their environment compared to someone born in suburbia.

*Franchesca Cubillo:* In Australia we have a lot of Indigenous human remains in museums, both skeletal and human tissue. The academic community wants to hold on to these human remains on the basis that science will change and we'll be able to learn more from them. For Indigenous people, of course, we see them as our ancestors and they need to be back in the communities and reburied. These remains were stolen; they were not donated to science or research. So some scientists believe we can learn more from the remains, but, from what I'm hearing from you, it's more about your environment, so surely we should be looking at the differences in social infrastructure and not the physical differences between Indigenous and non-Indigenous peoples.

*Susan Greenfield:* It depends, as always in science, what question you're asking. If you want to answer a question about bones, for example about changes in pelvic width, then bones will be useful. But if you want to investigate the nature of persons then I can't see what value bones would have.

There are a lot of interesting questions one could study. I gather that Indigenous people have a very different attitude to time and space compared with westerners. It would be exciting to study how we see time and space, and how that informs our views of consciousness, not to mention belief systems, and how types of belief systems go together, and how that impacts on one's life and changes one's immune system and so on. One could study how one uses words, and whether one has a literary tradition of reading and writing or an aural one, and what that does to thought processes and the way you see the world. I think those questions are more exciting than looking at bones, but then I'm biased because I was never interested in bones.

*Anne Howe:* I'm interested in the notion of different behaviours and where values and belief systems fit in.

*Susan Greenfield:* Belief systems are a really exciting issue above and beyond mere gender difference because without beliefs we would be trapped in a kind of neo-cubist hell. Everything you do is guided by a belief because it's a short cut. You can't just go through the logical arguments for each action; you'd be paralysed. So sometimes we have what to other people would be repugnant beliefs, we have common cultural beliefs, idiosyncratic beliefs, religious beliefs, secular beliefs, or medicinal ones such as those revealed by the placebo effect. So beliefs come in all shapes and sizes and degrees of appeal, but they do shape our lives. Certainly the female view of the world and the male view of the world are very interesting. How much are they stereotyped and how much are they to do with the individual? And how much are they to do with the individual having certain hormones?

Something that I'm personally investigating at the moment is instantiation of beliefs and how easily they are displaced. A belief is impervious to logic. If someone says 'I believe all men are superior' or even 'I believe I love my mother' or 'I believe in God', those things cannot be challenged or validated with logic. You either believe them or you don't. So, belief systems are a large part of what we're discussing and the only way I can think of them being instantiated in the physical brain is in the laying down of idiosyncratic patterns of connections as we're developing. It is the connections that account for the growth of the brain after birth and they reflect your experience.

Another experiment that I've started in the past is based on the fact that people who believe they are certain people will score accordingly on tests. So we took human subjects and said 'You imagine you're a college professor. You imagine you're a football hooligan.' And people who scored the same previously suddenly scored differently.

Now, this is hugely important when you think about manipulation of people, when you think about education, when you think about how women see themselves and how that will impact on their performance. And all that is measured and dictated by the connections in the brain.

## **Education**

*Susan Greenfield:* In terms of where the research money goes in the area of brain and gender differences, I think most money should go on the immediate practicalities of how to improve things in the classroom. Apparently research has shown that little girls can concentrate for 15 minutes, and little boys for 5. If you ask little girls to build things from plasticine they do, whereas the boys just hit each other with it. On the other hand, the boys are better at building things and constructional tests, or cognitive tests where you have to imagine things in three dimensions. We need research that doesn't just show a difference, but that helps us understand the best educational environment for boys and for girls. There is an argument for single-sex education, I know, because of the different learning styles. Boys are competitive and like rote learning and are very up-front; while girls want to do things by consensus and are less confident.

*Franchesca Cubillo:* I have a girl and a boy and they're two years apart, and I sent them to the same school. My daughter did wonderfully in a very supportive environment with lots of female teachers. My son, however, really lost his way once he hit puberty. But when we took him to another school with a strong male role model he just blossomed. There is a lot of energy and support for girls in most schools, while young men don't have strong role models. We have got to consider how that plays out in the next generation.

*Susan Greenfield:* Scientists and educationalists should be in dialogue much more. They should develop projects of mutual interest, and gender and education would be an obvious subject to explore. I suggest that about twice a year in Adelaide there could be meetings between educationalists and neuroscientists to identify topics of interest. Perhaps the state could be persuaded to set aside some funds for research between scientists and school teachers. It would empower the school teachers as well.

## **Work**

### *Workplace culture*

*Anne Howe:* In the last ten years I've worked in organisations and industries where the dominant culture is male, in the engineering and construction industry. In the past the engineer was king and the technical expertise that was required to deliver infrastructure was all important. Now we have the infrastructure, and we've got a society that demands a whole lot more, including a focus on the consumer, how we behave with our community, and our impact on the environment. And it is creating a shift in what is

considered important and attracting lots of young women into my present organisation, SA Water.

That in itself is creating interesting dilemmas as an ageing workforce moves through toward retirement and we need to plan for the kind of organisation that we want in the future. But the male engineering culture is still very dominant. One woman in our organisation set up a personal development group, to which men and women were invited, but it was mainly to assist women in the organisation. And the reaction has been interesting. Some men and women who are in powerful positions have attributed all sorts of motivations to these women, seeing them as deviants. It is very interesting having to deal with these strong emotions and the defensiveness of some men. It is cultural and social, and it's about power, but mostly I think it arises from confusion about what this means for them. Changing the culture is critical for us because otherwise those young women are not going to stay around.

*Susan Greenfield:* Culture in the workplace is very interesting. In my own experience, in the biotech sector there are very few women. And the men all stick their jaws out and say 'I'll tell you this for free'. Everyone goes in with their hands on their hips and their jaws out and they grunt at each other as though they're playing poker and not using facial expressions at all. It is very different in the media or publishing, where sometimes you'll have an entire meeting just with women and the whole atmosphere is different. It would be interesting to look at those different cultures, and the values that are at a premium in each of them, and then ask whether it is cause or effect. Do women stay out because of the culture? Or is it like that because women are absent? In which case could we change the culture? And perhaps in all-female environments where there's so much talk and consensus nothing ever gets done.

Another workplace issue is what I call the Svengali syndrome. Sometimes in certain cultures in the workplace a senior male manager and a female junior have a very unhealthy relationship, leaving aside having affairs, which is another issue. The woman displays what psychologists call learned helplessness; that is, the man will fight her corner more readily than he would for a male colleague. He becomes a father figure who looks after her and she doesn't have to defend herself. And it becomes a very unfortunate relationship from which neither benefits. That happens a lot in science and I think it's something that should be addressed: male versus female supervisors and how they bring up the next generation.

*Comment from audience (Wendy Rogers, Medical Ethics and Health Law, School of Medicine, Flinders University):* I work in the medical school and the hospital at Flinders University. The students are often worried about entering the clinical system

and they particularly fear hitting the orthopaedic wards, which have a very bad reputation for entrenched sexism and racism. The medical school has been wrestling with this since I was a student. How do you change an institution like that where by its very nature you can't bring in a female CEO and where women leave because it is so unpleasant?

*Comment from audience:* These orthopaedic surgeons are men and they're high status so they are protecting their patch. They are maintaining their masculine high-status profession by their behaviour. Similarly, occupations like engineering, which Anne discussed, are seen as very masculine, and many working-class men's jobs also require a certain type of physicality, so it's tied to those own men's masculinity. Doing that job, and the relationships they have with their male colleagues, is about their performance of their own masculinity. And you do find a lot of unpleasant behaviour to push women out of those sorts of jobs.

*Susan Greenfield:* I think many men don't know what's expected of them in terms of how male sexual behaviour is translated into a social scenario, like opening a door or paying for a meal or giving you chocolates or paying you a compliment, all of which frankly I find quite acceptable behaviour. When that shades into something that is not accepted in the workplace, women find it offensive or demeaning. Most of us don't know those lines. I think it's tough on men because they are confused about what is expected.

*Tahnya Donaghy:* The issue is not whether or not we tell men it's OK to hold doors open for us. It's about whether we tell them it's OK for men to take carers' leave and stay home with their children. It's about looking at workplace cultures in the broader context of finding what is preventing people from reaching their full potential. And that is assumptions about gender, whether or not they are based on hormones or brain size. That is the context that is most important.

#### *Institutionalised sexism and racism*

*Susan Greenfield:* We haven't said much about institutionalised sexism. This is not overt bum pinching; it's not someone being overtly rude to you, which is often easier to handle. It is the fact that you go for a job and you don't get it and you just never know whether it's because the majority were men and you're a woman. It's a little bit like that with racial issues as well. How can you prove there was institutionalised racism when upfront everyone is very politically correct? How do you handle institutionalised racism and sexism?

*Philip Gerrans:* Perhaps the first thing to do is demonstrate it unequivocally, because case by case it's almost impossible to prove. A couple of years ago some Swedish researchers wanted to find out why women didn't succeed as well as men in receiving grants for biomedical research. So they analysed grants and by regression analysis they found it wasn't the quality of the papers and the institution that the researcher graduated from that made a difference. The only thing that made a difference in receiving a grant in Sweden was whether you were personally acquainted with a member of the grant body. That was true for men and women, but women didn't have the same social networks. This can only be demonstrated by large-scale statistical studies, not anecdotal individual cases.

*Tahnya Donaghy:* I think it is important to look not just at indirect discrimination. We need to go one step beyond that and look at assumptions about who should be caring, and we should provide workplace cultures that support equal participation in both the private and the public sphere. People who have been involved in equal opportunity are fairly well versed in issues of indirect discrimination and the glass ceiling. We need to talk about gender differences within the work culture and the home as well.

*Franchesca Cubillo:* I think institutionalised racism is even worse than institutionalised sexism for Indigenous people in this country. In the 70s and 60s there was a lot of protesting, a lot of people coming together to demand Indigenous rights, education and health care. Then in the 80s we had Indigenous people placed in token positions within organisations. We had wonderful Indigenous programs at universities. Through the 80s and 90s there was a nurturing of Indigenous culture and people, and recognition of cultural heritage. And now we've got a federal government that says that the experiment of Indigenous affairs in this country has failed and so they have obliterated the federal institution that focuses on Indigenous affairs. So now there is no Indigenous accountability, no Indigenous monitoring and we have returned to the 1930s. So, yes, institutionalised sexism is a major issue but for Indigenous people institutionalised racism is a major problem. We've got a prime minister who is not even willing to acknowledge the history of this country and apologise to the Indigenous community.

#### *Men, women and management*

*Anne Howe:* All of the executives at SA Water are male, but we're concentrating on creating a good organisation and we believe that collaborative behaviour and constructive relationships are really important. But it's a big job to maintain that and get the men to drive it themselves. Power plays out in organisations where women are in powerful positions but it plays out so differently. Women have different methods of asserting power with each other than men. It's less obvious. It's very clear that men are

aggressively looking after their patch. Women do try to assert themselves over others in order to gain a resource or status, but it's very hard to pick what is really going on.

*Philip Gerrans:* I suspect that the men would be prepared to sacrifice personal relationships in their pursuit of power or status. It wouldn't bother them so much that they'd made an enemy. Whereas it's important to women in organisations to maintain relationships with other people, so it puts them in a hard position when they have to sack someone or reprimand or rebuke them. They try to find a consensus way to do it that will maintain the relationship, whereas men are quite happy to be blunt and even unfair.

I had a career in the public service before I became an academic and that was my experience of the different styles of management as well. So-called consensus management often seemed to be a matter of people trying to maintain relationships and it was hard for people who wanted to maintain good social relationships to get things done. You can't reprimand or sack someone *and* still expect them to be your friend.

*Anne Howe:* And as a senior female manager that's a big thing to overcome. You keep giving someone an even break because the relationship is really important. But there's a point at which you have to use your power, and if they don't like you, too bad.

*Susan Greenfield:* I find that men are easier to manage than women. If the man does something wrong you just tell them and they accept it and it's over and done with. With women the whole thing is much more emotional.

*Philip Gerrans:* In every hundred males you find five with psychopathic or subclinical psychopathic tendencies and a much lower proportion among women. And psychopaths are vastly overrepresented in management as well as organisations. The indicators are lack of remorse, capacity to take risks and lack of empathy, and that describes the profile of an aggressive private sector manager, especially in the United States. So I guess we should make sure that our selection and promotion procedures don't favour those attributes.

*Jeff Walsh:* This is true in the public sector as well. The thing that concerns me is that it isn't accidental. We allowed that to happen through the institutionalisation of certain values and behaviours that we have spoken about. It really does take courage to create change of any sort in organisations with dominant and institutionalised values and behaviours. I believe that really good managers and really good leaders, whether they are male or female, recognise the importance of having a degree of discomfort, a

degree of diversity, a degree of challenge in the kind of people you've got around you. And the psychopaths don't.

*Ineffective workplaces*

*Jeff Walsh:* In the public sector we aren't using people to their best potential. And I say that because they're telling us that; they're saying they're not challenged by the work they're doing. We know that women are the majority of people in the public service, but they occupy very few of the executive positions. It seems to me that the community and society demand people who are more creative. But the public service is very sequential, process-driven and linear. And regrettably our education system has been much the same, though I think it is slowly changing. It has favoured rote learning, linear thinking and so on and it's really been destructive for people who don't think like that. I think that has done a major disservice to women and to the economy and the public service.

*Brenton Wright:* We still have a quasi-militaristic way of assigning authority and accountability in organisations. There is a line structure and we are organised in a serial fashion. Until we can break that down we're not going to make much progress. Men have got to multi-task. My task at the moment is setting up public sector reform and one of my missions is to look at how we can recast accountability frameworks in other than a linear and hierarchical fashion. I want accountability to be on outcome rather than on position.

*Anne Howe:* I think we have gone backwards. Senior managers in the public sector are now managing a political process and that's partly to do with everyone being employed on contracts. Early in my career the focus was on managing people, but there has been an incredible shift in emphasis since then. The kind of place I like to work in is one in which I know there's an important purpose, there's an outcome, I'm making a contribution, I've got some power in how I go about it, and it's valued, and so I'm not just a cog in the wheel. Creating that kind of working environment is a management task and I think there's no excuse for any organisation, public or private, not to be doing that because it creates the energy to get the right outcomes.

*Susan Greenfield:* From my experience of skirmishes with the public sector it seems to me that in the public sector the whole issue is that you are dealing with public money and you know you will have a job tomorrow. This means you will use the tools of the audit, of consensus and of accountability. If you're running a small company what you're thinking about is how to stay in business by tomorrow, so you are driven to innovate, you are driven to make changes because you have to make a profit to

survive, and if you don't innovate you won't make a profit. So the agendas dictate different ways of doing things. I don't know which one plays out best with the male or female psyche.

*Comment from audience:* These things are not necessarily mutually exclusive. It is largely about the culture of organisations. I think you can be innovative and highly productive in government. But I think one of the precursors for that is diversity in your workforce, both men and women and cultural and socioeconomic diversity. It's that diversity that energises and charges organisations.

*The future of work*

*Susan Greenfield:* The future of work could be encouraging or scary. Increasingly work is dominated by IT and the knowledge economy. Increasingly we have virtual workplaces. Increasingly people are able to work from home, which could be better for older people and for women with children. If we are selling our services, not our time, that will also favour women. We will also be having portfolio careers, so we will decide how much or how little work we want to do from one month to the next, and we will decide whether to outsource or retrain, or take some time off for a holiday. So in terms of work-life balance the new world of IT-dominated, home-based work could favour women. And all these bogey men that we're raising, the evil male manager, the sexism in the workplace, the bullying, the institutionalised sexism, the male-dominated interview panel, won't be an issue if we are selling our services and we are in charge of our own careers.

Traditionally men are very status conscious, but this might change as we have portfolio careers, as we're working from home, as we do not necessarily have to learn certain things by rote and be defined by what we've learned by rote. We are not defined by a fixed body of knowledge that gives us status. It will be interesting to see whether living in an increasingly cyber world changes attitudes away from the very aggressive status consciousness that currently typifies male behaviour.

And what will be the impact of working with computers on the way we think? And will we want to socialise with each other? Will there be a down side to working at home, having families, having flexibility, having portfolio careers? And how will that impact on Indigenous peoples? Do they want to be isolated from that? Or would it be very helpful for them?

*Brenton Wright:* For the last three years I've been a portfolio worker and I've made those decisions about how much time I want to spend working. Before that I had a

traditional executive career. The last three years have been a revelation for me. My work life is now totally authority free, and I don't have to worry about being a bad manager, or picking the wrong people. It's a totally gender-free environment; I just come with my brain.

*Creating more inclusive and effective workplaces*

*Susan Greenfield:* I was asked by the UK Secretary of State for Trade and Industry, Patricia Hewitt, to write a report on women in science and the problems they face and particularly why there are problems with the recruitment and retention of women in science. This has been published as the *SET Fair* report, where SET stands for science, engineering and technology. We did wide consultations and found that there were problems at every level from the schoolgirl who feels that science is not about real life and relationships, and who experiences sexual stereotyping in her school, through to the university level where for the physical sciences there's a 90–10 split in favour of men. It is 50–50 in biomedical sciences, which is quite interesting, but that veers wildly up to 90–10 by the time you get to senior lecturer/professorial level.

One thing we suggested that would really level the playing field was a database for all men and women scientists. Heads of research committees could access it to seek potential employees. This would circumvent the lack of confidence women often have in applying for jobs.

In our report we also recommended job-sharing, especially in science careers. It hasn't found favour in scientific research yet. But 99 per cent of scientific research papers are co-authored and that doesn't take away the individuality of your scientific research.

We also suggest that if you are the token woman on a committee then you should get compensation for that, either more money or remission from teaching duties. You shouldn't be doing committee work above and beyond your normal duties because you are a woman, when your male colleagues are going off to the pub.

*Anne Howe:* In our organisation, 25 per cent of us are women, and it is easy for us all to say that we value difference and making the most of everybody's experiences. But it's really difficult to change the hearts and minds of the managers. So now we have made it part of their performance appraisals to show that they have made every effort to ensure that they have a fair process that results in more women being employed in key positions in the organisation.

*Susan Greenfield:* One way that people think they are coping with institutionalised sexism is to have a token woman on the interview panel, as if having a woman on the panel makes everything OK. But until you have at least 30 per cent representation it is just token; the consensus will still be the male culture. How are we going to achieve 30 per cent representation if we do not have positive discrimination, which I personally don't favour? I think it would seem wrong to me if I got a job just because I was a woman. I'd feel that was a kind of hollow victory. I wouldn't want something that I'd got just because it was restricted to women and because I was being favoured as a woman over men who were better than me. So I think we really do have a problem of on the one hand not wanting positive discrimination and on the other hand trying to get very clear representation. One way is to start to change minds by having much more in the media, much more in the drama.

*Eleanor Ramsay:* Here in South Australia we did use positive discrimination for a large number of years in employing women deputies in high schools. My understanding was that this was because of past historical discrimination. Promotion was based almost entirely on seniority and until the early 1970s if a woman married she was no longer a permanent teacher; she was a temporary teacher and not eligible for promotion, professional development or superannuation. And she had to resign to have children because there was no child-rearing leave. Analysis showed that no women deputies would be appointed for many years because of men's advantaged position on those seniority lists, and at the same time the *Government Management and Employment Act* came in requiring that promotion and selection should be on merit.

However the argument for positive discrimination was less to do with women's employment equality and more to do with the educational setting, and the educational impact on students of the lack of senior women educators in maths and science and as deputies. So the Sex Discrimination Board granted approval to advertise for positions for women deputies in certain schools which had decided that that was what they wanted. When that original exemption lapsed we applied to the Sex Discrimination Board to have it re-instated. The very pertinent challenge presented by the judge was 'What has the system done to change these conditions?' Being granted an exemption from the anti-discrimination legislation to patch up a previous injustice in some ways achieved great things but in other ways left the department, the government and even the union with no real need to change all of the structural arrangements that had led to this in the first place. It made everybody lazy about the real causes of the inequality that the exemption sought to redress.

*Tahnya Donaghy:* Positive discrimination is rarely as simple as not appointing the best person for the job. There are a whole range of subjective elements about what

measures the best person for the job. An example of this is what happened in Scotland in the British Labour Party. They had a quota requiring a number of women to be selected. But the central party made that decision, and at the local branch level they found that not enough women put themselves forward. Someone then came up with the bright idea of changing how they recruited candidates. They made it like a job with a list of selection criteria. They included criteria like having a good relationship with the community, and understanding community needs. And then they had an influx of candidates. In the end 50 per cent of those elected for the party were women, which was a record. So looking for the best person for the job in a simplistic way didn't work. But forcing people to re-examine their processes to try to meet the quota led to organisational change.

*Anne Howe:* We recently had six new jobs, but no women were put forward by the agency that we had employed to do the search. So we went back and said 'That's not good enough. How many women applied? And whoever they are, we want all of them to come and be interviewed.' And from denying an opportunity for any woman we ended up with 50 per cent of those jobs going to the women. So some part of the selection process locked them out, and it was really powerful to figure out what was inhibiting their opportunities.

*Judy Morris:* All that's been said recently is good in terms of getting women into 50 per cent of positions, but I think we could think more about changing what the job is. In academic biomedical research the number of women hasn't changed in the thirty years that I've been at university, especially at the senior level. I've seen some women go through that are extraordinarily bright. There are more than 50 per cent women in undergraduate courses and starting PhDs in the biomedical sciences, but they drop out very quickly, as Susan said. And part of this is a quality of life issue. A lot of women choose not to have the lifestyle that many professionals have, the long hours and the demands on their life. It isn't just about child rearing. It's more to do with quality of life and people seeking balance in their lives. Shouldn't we be changing the style of the jobs for both men and women, so that everyone's lifestyle changes?

*Comment from audience:* When no women apply for certain jobs they may be making a realistic appraisal of the situation. I think that they really see what the power structure is like. And I'm thinking too of the work of an Australian writer, Joan Eveline, who's written a lot about male advantage. We've been discussing positive discrimination here; she says we need to make male advantage much more visible.

### **Conclusion: gender and policy making**

*Eleanor Ramsay:* The United Nations Human Development Index ranks every country in the world according to the extent to which that country has made access to basic health, education and employment available to all women and all men. The rankings show the size of the gap between men's and women's access to what the UNDP refers to as the prerequisites for human dignity. The results indicate that the size of this gender gap doesn't relate to whether the country is in the northern hemisphere, the southern hemisphere, developed, underdeveloped, or to the size of the gross national product. The differences are due to political will, the decision by a particular community that they want greater equality between men and women. So the challenge I would throw the South Australian public sector is that if equality and diversity in the workforce is what we want then we should be going about getting that.

*Tahnya Donaghy:* I want to tell you what happened in Northern Ireland when they looked at gender and public policy making. They took transport, an area that traditionally had not been seen as a gendered area, and then looked for gender differences. Prior to that point they had had buses with seats for a single person, with enough space to hold a briefcase, and they assumed that passengers could easily get up and off the bus without assistance. The buses went into the city and out of the city. They found that in peak hours the dominant demand was for buses going in and out of the city and there wasn't a highly gendered element to that. But outside of those peak hours the majority of the people who used buses were women, often with prams or shopping. And often they didn't want to go into the city and out to get to the school or the local childcare centre. They needed bus systems that went through the suburbs. They needed space for prams, and they needed buses that could be lowered so it was easier for them to get prams and shopping on and off. So when the bus system was not seen through a gendered lens a whole range of assumptions were made about why people need the transport system. When it was seen through a gendered lens, gender differences were acknowledged in a constructive way.

We are talking about gender and the brain. Gender is a construction. We're not talking about sex and the brain. Let's remember that gender is constructed and let's use a gendered lens when we consider policies, the way we deliver services and the way we organise our workforces. Let's understand the different obstacles and the different supports that those structures provide, and then let's work at maximising the potential of individuals and maximising workforce diversity. Then all of us will have more choices and have the opportunity to participate to the best of our abilities.

*Susan Greenfield:* It's interesting that you raise gender being a state of mind. If you define mind as the configuration of connections, as I like to, then clearly those connections can change, they can evolve, they can be different, and I think the more research we can do into that the more interesting it will be. We spoke at the beginning of the roundtable about the types of research that neuroscience can do about the way in which chemicals and neural connections contribute to one's mind set, and indeed a male or female way of seeing the world. For me it would be more important to look at education, and the learning patterns of little girls and little boys, and how best to maximise both, and I hope that can be on our program for the coming year.

The entire point of my residency is to put science at the centre of many of these questions. I am not saying that scientists can come up with the magic answer, but I think they can inform the debate and they can provide a dimension that previously hasn't been there.

The next question is 'what do we want'? Once we accept that the brain is very vulnerable and fragile and dynamic and changeable, what do we want to do with it? What kind of education do we want? What kind of people do we want to be? What kind of differences do we want between men and women? These are the really big questions. Do we want to be happy all the time, or not? Until we know what we want we can't get science to provide it.

**About the roundtable**

**Roundtable discussion on gender and the brain  
A dialogue with Baroness Professor Susan Greenfield**

Wednesday 4 August 2004, 2–5pm  
Room RR5-09, Level 5, Roland Rees Building  
University of South Australia, City West Campus, North Terrace, Adelaide

Organised by the Office for Women, Government of South Australia

**About Susan's residence**

Adelaide Thinkers in Residence brings world-leading thinkers to live and work in Adelaide to assist in the strategic development and promotion of South Australia. Thinkers challenge our beliefs, spark fresh ideas and set new directions for South Australia.

The Thinkers undertake residencies of 2–6 months, in which they assist South Australia to build on its climate of creativity, innovation and excellence. The thinkers provide the state with strategies for future development in the arts and sciences, social policy, environmental sustainability and economic development.

The Adelaide Thinkers in Residence program for Baroness Professor Susan Greenfield has been developed by the Department of Premier and Cabinet and the following partners: Bio Innovation SA, Flinders University, University of Adelaide, University of South Australia, Department of Education and Children's Services, Department of Human Services

## Biographies

**Baroness Professor Susan Greenfield** is a highly esteemed neuroscientist with a stellar academic career and one of the world's leading experts on the human brain. She is widely known for her research into the areas of Parkinson's and Alzheimer's diseases and the first woman ever to lead the prestigious Royal Institution of Great Britain. Susan is also a Senior Research Fellow at Lincoln College, Oxford University, as well as an honorary fellow at St Hilda's College, also at Oxford. Susan has received a life peerage and a CBE in the United Kingdom in recognition of her stellar career and her contribution to science. She has been named as one of the world's 50 most inspirational women.

**Eleanor Ramsay** facilitated the roundtable. She is an adjunct professor at the Hawke Research Institute, University of South Australia. Previously she was the university's Pro Vice Chancellor with responsibility for equity as well as a wide range of other responsibilities. She is recognised nationally as a leader in several areas of educational policy and research. She has recently been appointed a Linkage Industry Fellow to conduct research funded by an ARC Linkage grant in partnership with the Premier's Social Inclusion Unit, the Department of Education and Children's Services and the Senior Secondary Assessment Board of SA.

**Anne Howe** is the Chief Executive of SA Water. She currently also holds the positions of Deputy Commissioner of the Murray-Darling Basin Commission, Chair of the Water Services Association and member of the South Australian Water Corporation and the South Australian Finance Authority Board. Anne also has a leadership reputation in a broad range of areas including strategy development, consultative approaches to change, partnerships between organisations and sectors, and the nexus between changes in workplace culture and improved commercial service outcomes. She's also looked at public sector policy planning and reform, and works with the private sector to deliver efficient and effective government services. Her particular areas of interest include sustainable development and reshaping the workplace for generational change.

**Brenton Wright** is currently the director of Lizard Drinking. He is also well known in this state for his experience in executive work in the commercial, government and non-government sectors. Brenton has had senior roles in relationship management, team leadership, business development and strategic planning. He is currently engaged in establishing the public sector reform unit for the Premier and is conducting a review of early childhood education for the Minister of Education and Children's Services. He is

also a governor and board member of the State Theatre Company and a member of the Social Inclusion Board of this state.

**Judy Morris** is the convenor of the Centre for Neuroscience at Flinders University, where she has been a researcher in neuroscience since 1984. Judy is also a principal research fellow in the National Health and Medical Research Council of Australia. She has a PhD from the University of Goulburn and has done postdoctoral work at UCLA and Vermont in the United States. Judy's major research has concentrated on how the nervous system regulates the heart, blood vessels and other internal organs, including the way in which different chemical messengers achieve this. In 1995 Judy was awarded an honorary doctorate from the University of Gothenberg in Sweden for her research in neuroscience.

**Philip Gerrans** is a lecturer and postgraduate coordinator in the Department of Philosophy, University of Adelaide. Philip has degrees from ANU and Oxford and lectures in the philosophy of psychology and cognitive science, political philosophy and the philosophy of the social sciences. Philip's main research areas have been the philosophy of psychology and psychopathology, and more specifically the theoretical foundations of cognitive neuropsychiatry. His research into psychopathology has concentrated on development disorders such as autism and Williams syndrome, and psychiatric disorders such as delusional disorders. Philip's research areas in political philosophy include nationalism, eighteenth-century political theory and political economy of exploitation.

**Jeff Walsh** is the Commissioner for Public Employment, where he sees his role and that of his office as the improvement of public service delivery through the development of people who provide that service. Jeff's values and priorities are known to most people who work in the public service, as he's influenced the culture and practice of that service a great deal. He's put an emphasis on the recruitment and development of young people, Aboriginal employment, the development and promotion of women and the rejuvenation of the public service. Jeff has extensive public sector experience, both state and federal, including being the executive director of Planning SA, the executive director of the Cabinet Office and the acting chief executive of the Department of Education and Children's Services as well as the director of Transport SA.

**Franchesca Cubillo** is the Artistic and Cultural Director of the Tandanya National Aboriginal Cultural Institute. Franchesca is a Larrakia, Bardi, Wardaman and Yanuwa woman from the 'Top End' region of Australia. Her previous positions include the director of the Aboriginal and Torres Strait Islander program and the manager of the

repatriation unit at the National Museum of Australia, and at our South Australian Museum she's been the Curator of Aboriginal Anthropology and the Indigenous Curator of the Aboriginal Cultures Gallery. Franchesca has also represented Australian Indigenous culture internationally in America, New Zealand and Japan. Her current board and committee membership include curriculum advisory groups in the University of South Australia's arts and cultural management program as well as the South Australian School of Art, a member of the Don Dunstan Foundation, the Arts SA Indigenous Peer Assessment Panel, the steering committee for the Indigenous Collections and Knowledge Archives Network at the ANU and the South Australian Youth Arts Board.

**Dr Tahnya Donaghy** is the women's officer of the South Australian branch of the Australian Education Union. She has a PhD from Queen's University in Belfast where she conducted research into women's political participation. Tahnya is heavily involved in activism in the women's movement and her research and her activism revolve around national and international events of gender significance such as the 2003 UN Human Rights Commission. In 2002–03 Tahnya was a postdoctoral fellow at the Hawke Research Institute at the University of South Australia and she's currently an adjunct research fellow there.

This paper was abridged and edited by **Kate Leeson**, Editor, Hawke Research Institute, University of South Australia.

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