

I want to dedicate this presentation to the groundbreaking research of the Dr Valerie Grant, lecturer in Behavioural Science at the University of Auckland New Zealand who sadly died before I discovered her research findings and book. I heard her speak over 20 years ago giving a presentation that she titled "Maternal Factors that Determine the Gender of Offspring" and initially I assumed that the title was a simple typing error. Surely the title should have read 'Paternal Factors' but I soon discovered that her title was in fact no error. What she said at that lecture has had a profound impact on me for the last 20 years. Now you will all studied some basic reproductive biology. You will have been taught as I was that the gender of offspring is apparently a random process. 50% of sperm contain an X chromosome and these will produce girls. 50% of sperm contain a Y chromosome and these will produce boys. Whichever healthy sperm reaches the egg first wins the race and the gender of the offspring depends on which sex chromosome is contained with the nucleus of the sperm. An X means it will be a girl and a Y means it will be a boy.

Simple. Well No. Not that simple.

If you want to find out more than the overview that I will present then I urge you to get hold of a copy of Dr Grant's excellent book called "Maternal Personality, Evolution and the Sex Ratio" to read all the evidence. Let me give you some of the highlights.

For instance why is it that for every 100 girls born there are 105 boys born. This slight but highly significant ratio difference occurs in all countries and always has since gender records have been recorded.

Are the sperm that carry a Y chromosome somehow slightly better and faster swimmers? No they are not. If you were to toss a coin and always found a 100:105 head to tail ratio then you will realise that you have a slightly unbalanced coin. That slightly uneven sex ratio cannot be explained by the simplistic speedy sperm theory that we have been taught. Secondly we know that the male birth rate always rises to an ever higher ratio in times of warfare, famine or natural disaster. Do these external environmental events somehow influence the Y carrying sperm to become slightly better swimmers? Of course not.

Now Dr Grant proposed that somehow the sex of the infant may actually be under the control of the mother. Think about the sexual and societal implications of such a scenario for a moment. what does it say about the role of women? She could do via the hormones involved in reproduction. These hormones in turn provide the biological basis for specific personality trait in the mother known as Dominance. Thus the mother's personality is both relevant and appropriate in an evolutionary sense to the sex of the child that she conceives. This idea is Known as the "Maternal Dominance Hypothesis" She tends to have the gender of child that she intuitively or subconsciously is best suited to bearing. Now research clearly shows that women who score highly on personality questionnaires designed to measure dominance are more likely to give birth to male infants than less dominant women. In fact women who score in the top 20% for dominance are 5 times more likely to conceive a male infant than women at the other end of the scale. Such findings are incompatible with the belief that the spermatozoa of the male are solely responsible for determining the sex of the infant as we have always been taught. Research from the last thirty years in reproductive physiology has shown that several factors related to the determination and ratification of the sex of the infant are likely to be under the control of the woman. How so? Well there are a variety of possibilities. Individual differences in the anatomy and physiology of the female reproductive system may make it easier for either an X or Y carrying spermatozoa to reach the egg. But how could an egg

possibly determine the internal genetic material contained within the nucleus of a sperm? Let me explain by way of a metaphor. If you received 40 letters and you knew that 20 letters were from France and 20 letters were from Scotland how could you tell which letters contained the English language. Each envelope appears identical even down to the same font of your address. How could you instantly know which letters were from each country with opening or even touching the envelopes? It's easy. Look at the stamp! Stamps from France say France. Stamps from the United Kingdom were they were invented do not have a country name on them. What if there is some protein or chemical marker on the exterior of each sperm that indicates the sex chromosome within. A chemical stamp or key that may or may not be able to open the lock that the zona pellucida surrounding the egg would provide a mechanism for gender selection. This key mechanism could be mechanical or biochemical or both. Or perhaps the uterine environment may be more conducive to the development of a male or female embryo depending on certain characteristics of the mother. Furthermore these characteristics are likely to be both physical and psychological and one the cause of the other. Now the link between the physical and psychological factors is hormonal. The theory is that the same hormonal influences that regulate the reproductive process and increase the chance of an X or Y sperm fertilising the ovum also provide the biological basis for the woman's personality. Testosterone is that relevant hormone even though it occurs in tiny amounts in the bloodstream of women but in a much higher concentration in the ovary and the fluid that surrounds the eggs. Individual differences between women in their level of testosterone appear to underlie both the potential to behave in a dominant way and the potential to conceive male infants. Testosterone in women has a tendency to increase during war, famine and natural disasters as does the incidence of male births. Now as far as testosterone is concerned there are two major differences between men and women. The first and most obvious is the total amount produced. Women produce just 200-300 mcg per day whilst men produce between 3 and 6 milligrams per day. Several thousand times more. The second difference is where it is produced in the body. Men of course produce it in the testes. Women, a small amount comes from the ovaries, but most is converted from androstendione in peripheral tissues, a process that involves not just fatty tissues but also the adrenal glands. The home of adrenaline. Now one significant consequence of this is that alcohol even in a very low dose increases blood plasma total testosterone concentrations very quickly in women but not at all in men. Another consequence is that an increase in stress can lead to an increase in concentration of testosterone in women whereas in men severe or prolonged stress will dampen down the production of testosterone. I hope you see therefore that there can be hourly, daily, weekly and monthly fluctuations in female plasma testosterone levels and assumingly ovarian testosterone levels that are more difficult to measure. Now this personality trait that I'm calling Dominance may be defined as Influential Ascendent Prevailing authoritative or High in Control. It is not the same as Aggressive, Hostile, Violent, Angry, Quarrelsome or Argumentative. Nor is it Domineering which is overbearing, bossy, dictatorial or high handed. Now the personality theorist Fiske has described Dominance as "Acting overtly so as to change the views or actions of another. Now before I inadvertently offend too many women let me be clear that most research in dominance traits and non dominance mostly comes from the animal and not the human world. In the deer industry the farmer wants to have as much female offspring as possible. The venison females produce is tender and much more delectable and profitable than male venison. Farmers thus do not want dominant female deer that will tend to be more likely to bear male offspring. In short the more docile the doe the

more female offspring she will have. So in summary the potential factors within a female which make a crucial difference is successful access of an X or Y sperm include variations in the uterine environment, either biochemical or mechanical or differences in the ovum which may make it more or less able for an X or Y sperm to penetrate the outer layer of the egg which is called the zona pellucida. Alternatively or additionally maternal factors might be operating at the stage of implantation thus although X and Y spermatazoa may fertilise in equal numbers the chances of either one or the other actually successfully reaching the ovum and it actually implanting may not be the same at all. The sex of the infant is therefore not a matter of 50/50 random chance but the result of a highly complex set of factors which take into account both the physical and psychological attributes of the mother. The predetermination of the sex of the infant is thus partly and most probably totally under the subconscious control of the female. This is thus one of most profound interactions between the psyche and the soma in human biology with huge implications.

Now before this theory was conceptualised way back in July 1975 the German Air Force was so concerned about the apparent lack of sons amongst their jet fighter pilots and anecdotally that this happened to be the same in most jet fighter pilots in all countries that they decided to hold an enquiry. They were worried that they might be sued by their pilots concerned about whether radar, G-Forces or stress of their job reduced their reproductive abilities to father sons. Now the findings were published in August 1976 just 13 months later. They studied 860 jet and helicopter pilots. Now remember that this was 1975 so all the pilots were men of course. The sex ratios of their offspring were compared for those pilots who had completed 1000 of flying and those who has completed more than 2,000 hours of flying. Only the latter group had significantly more daughters. Now since the first 1000 hours of flying are by common consensus far more stressful than the second 1,000 hours of flying then stress could not be a factor. There had to be some other reason. They could not find one. But think about it. Experienced German Air Force pilots are older and thus more likely to be in a partnership or marriage with a woman and have children together. The review never considered the role of the women. We have no record of their personalities. We know that air force pilots are generally dominant males. What sort of women might they be drawn to? I would suspect mostly non dominant women who would have the personality of women best suited to rearing daughters.

Now in 1987 another study was conducted in America into even higher status men than pilots. Astronauts. Many of whom had been pilots. Astronauts had just 66 sons for every 100 daughters. What sort of women do astronauts tend to marry? It was never studied. They never found a reason. Does anyone still hold the old fashioned and incorrect belief that the sex of a child is a 50/50 random chance caused by the speediest sperm?

Now let me quote some words by Milton Erickson in Jay Haley's Book Uncommon Therapy published in 1973.

"A man can have sexual relations with a woman, and it is a biologically local performance. The sperm cells are secreted, and once that process has been completed- the manufacture of the sperm cells- the man's body has no longer any use for them. They serve no purpose to him. They are useful only when the man gets rid of them by depositing them in the vagina. And so a man's sexual performance is a purely local phenomenon and can be accomplished very quickly, in the space of seconds. It's just

local and once he has deposited the sperm cells he's all through with the sexual act. Biologically speaking, when a woman has intercourse, to complete that single act of intercourse biologically, she becomes pregnant. That lasts for nine months. She lactates; that lasts another six months. And then she has the problem of caring for the child, teaching it, feeding it, looking after it, and enabling it to grow up. And for a woman the single act of intercourse, in our culture, takes about eighteen years to complete. A man- eighteen seconds is all that is necessary. How is a woman's body built? Very few people stop to realize it -how completely a woman's body enters into the sexual relationship. When a woman starts having an active, thoroughly well-adjusted sexual life, the calcium of her skeleton changes. the calcium count increases. Her foot gets about a fourth of a size larger. her eyebrow ridges increase a little bit. The angle of her jaw shifts, the chin is a little bit heavier, the nose a trifle longer, there's likely to be a change in her hair, her breasts change in either size or consistency or both. The hips, mons Veneris, change in either size or consistency or both. The shape of the spine alters a bit. And so physiologically and physically the girl becomes different in as short a time as two weeks of ardent love making. Because biologically her body has to prepared to take care of another creature for nine long months inside, and then for months and years afterwards with all her body behaviour centering on her offspring. And with each child there's a tendency for a woman's feet to get larger, the angle of her jaw to change. Every pregnancy brings about these tremendous physical and physiological changes. A man doesn't grow more whiskers because he's having intercourse, his calcium count doesn't alter any, his feet don't enlarge. He doesn't change his centre of gravity one bit. It is a local affair with him. But intercourse and pregnancy are a tremendous biological, physiological alteration for a woman. She has to enter it as a complete physical being.

Now the comments by Erickson were made when specific hormones such as calcitonin which mobilises calcium transport were still unknown. Erickson was not just a great hypnotist but was also a keenly observant medical doctor. The line "physiologically and physically the girl becomes different in as short a time as two weeks of ardent love making' stood out for me.

As a family doctor I could one look as a young woman who I had treated many times before as a child and I knew that she was going to ask me for the contraceptive pill. I thought this was clinical intuition but I now realise that I was subconsciously registering these physical changes in her appearance. She looked different. Her face was different from the last time I had seen her. She was no longer a girl. She was a woman. A sexually active woman. I had spotted the subtle changes. Now the obvious reason for these physical changes is that when a woman starts having regular intercourse her subconscious knows that she is likely to become pregnant and takes calcium from the inside of her pelvis to make it a bit wider. This calcium has be laid down somewhere else and thus the foot growth, nose, malar ridges and jaw changes. If a young couple start having a secret romantic liaison for a month. The man will show no changes but the woman's physiology changes may be apparent to an astute observer.

Now having taken note of these findings about maternal dominance and egg selection by Dr Grant and the widespread and specific physical changes noted by Dr Erickson I wondered and pondered if the subconscious abilities of a woman could not just bias towards a particular gender by selecting an egg that could only be fertilized by a specific sex chromosome bearing sperm. Could her subconscious also select an egg for development that could not be fertilized by any variety of sperm and thus be the

cause of unexplained infertility? The egg and the sperm would appear to be structurally normal but not able to conceive. Now the main biological reason for the subconscious to produce infertility would be because at that particular time, in that particular month the prospect of pregnancy and two decades of motherhood to follow would be deemed too much for the woman to handle. The subconscious could protect her from this prolonged stress by choosing an infertile egg. This certainly seems to be the case in women with anorexia for whom pregnancy would place a tremendous physical burden and they do not even ovulate thus producing complete temporary infertility as a biological safeguard. The subconscious mind, the Great Protector as I call it could scan the body for the presence of raised testosterone and the catecholamines of stress. It could determine that the woman was too stressed for a pregnancy and all the problems of the next two decades to allow a successful pregnancy in that cycle. Now if a woman is infertile and seeking fertility help this is the opposite of what her conscious mind desires. She really want to try to become pregnant. She is trying to have a baby. Now what does that actually mean. I am trying to have a baby and trying to become pregnant. Most women having intercourse are not trying to become pregnant. They are simply having sex or even making love. Couples with infertility are the ones who use the TRY word.

What does TRY actually mean?

What does this mean " The woman went to the shop and tried to buy some bread."? It means she failed.

Whereas " The woman went to the shop and bought some bread" means that she succeeded.

"The player tried to score the goal." Failed    "The player scored the goal Succeeded

Listen carefully "Try to avoid thinking about a pink elephant covered in blue spots". I bet you failed to do so. The word TRY to the subconscious mind means FAIL.

Therefore TRYING to get pregnant tells the subconscious that you will fail.

A new born baby girl is born with egg cell oocytes in her ovaries. Between 16 and 20 weeks pregnancy less than halfway through the maturation of a baby the ovaries of a female baby contain an amazing 6-7,000,000 oocytes. now most of these oocytes gradually waste away during the rest of the pregnancy leaving 1-2,000,000 present at birth. None develop after birth. At puberty only about 300,000 egg cells are left. Only a small percentage of these oocytes mature into eggs. The many thousands of oocytes that do not mature, degenerate. Degeneration continues and by menopause all the oocytes are gone. Only about 400 eggs are produced during a woman's reproductive life. Usually one egg once a month in the middle of a menstrual cycle. Until released an egg remains dormant in its follicle suspended in the middle of cell division. Thus the egg is one of the oldest living cells in the body. Just 400 eggs out of an original base of 7,000,000. Less than 0.1% of the 300,000 that are present at puberty. Are we to believe that this process of oocyte degeneration is a totally random one. Do all oocytes have an equal chance of being one of the chosen 400. How many of those 400 eggs turn into human beings? One, two, three perhaps 10. Now many of us live in democratic countries and in our countries all votes are worth the same value. If we watch the National Lottery being drawn then we know that each numbered ball has the very same chance of being picked as any other ball. Perhaps these even handed egalitarian democratic aspects of our society cloud our perspective and assumptions. Do we assume that each oocyte has the chance of being one of the chosen 400 eggs? Is nature generally renowned for being democratic and fair? Of course not. Does a

survival of the fittest world protect and support the weakest in our society? Absolutely not. Do you seriously think that this whittling down from 7,000,000 possible options to just 400 actual eggs is just a totally random process. The chosen eggs are probably the very best eggs. But best at what? Merely best at conception? What if these 400 super eggs are indeed very, very special. You may know that Follicular Stimulating Hormone influences the ovary and each month and an egg or occasionally two eggs develops. Which oocyte develops each month? Is this just a random process? Having spent decades getting to this point by whittling down the oocytes and dramatically altering the physiology and anatomy of the woman why would we assume that the process of monthly egg maturation would be left to random chance. Why would we assume that any passive oocyte would be lucky enough to be impregnated by some sturdy manly speedy sperm swimmer. Is this a male dominated societal myth? Are female eggs just the lucky passive recipient of the man's 18 seconds of sexual effort? Are the glycoproteins of the zona pellucida always the same in every egg. Are all sperm welcomed with open arms? Although as previously noted, the Y carrying sperm get slightly preferential access.

Let me talk you through a hypothetical mechanism for maternal gender selection based on what you have heard today.

At puberty the woman has 300,000 potential egg cells.

Lets say that the vast majority, 200,000 are non specialised eggs. They can be impregnated by the fastest sperm no matter what genetic content lies within the sperm.

45,000 oocytes are specialised to only accept an X carrying sperm and these are chosen to develop when ovarian testosterone levels are low.

45,000 are specialised to only accept a Y carrying sperm and these are chosen when ovarian testosterone levels are high.

That would leave 10,000 oocytes that could develop that were unable to accept any sperm if the testosterone or stress hormone levels that month were too high.

With just 400 eggs being chosen during a lifetime this would provide a mechanism for maternal gender selection depending on the testosterone and stress hormones in the days leading up to egg selection. This would also provide a subconscious biological basis for unexplained infertility despite adequate number of eggs. Given all these amazing changes that take place in a woman when she starts having intercourse to widen the pelvis and prepare for a baby why would her body leave egg selection and the possibility of egg fertilization purely to random chance when none of the physical changes are random. Could this be the basis of some unexplained infertility?

If so is there a solution?

Well I believe so.

STEP 1. Stop trying to get pregnant. No more trying for a baby. Replace trying with doing. Make mad passionate love with as many orgasms as you desire. Enjoy having frequent physical intimacy with each other.

STEP 2 Abolish stress. Totally. Stress equals sympathetic over activity. Relaxation equals parasympathetic over activity. That I can teach you via self hypnosis. Learn how to produce relaxation in every part of your body in less than 60 seconds. This is explained in my top selling book Relax : Say Goodbye to Anxiety and Panic.

STEP 3 Remove all the emotional baggage that causes us stress. This is what I call the Special Place of Bliss.

So let's review the evidence I've presented.

1. The usual sex ratio is 105 boys for each 100 girls. ie. NOT a 50/50 split
2. In times of war, famine or natural disaster the male birth rate increases.
3. Dominant women tend to have boys and non dominant women tend to have girls.
4. Dominance is determined by testosterone levels
- 5 Testosterone is affected by stress
6. 400 eggs are chosen from an original pool of 6-7,000,000
7. Is there a mechanism for a super egg to select a sex specific sperm?
8. Does too much stress worsen infertility?
9. Is there a solution. YES

Today you have learned about Maternal Factors that determine Gender.  
(That's NOT a typo)