

Imbalance in Australian Story.

On May 24, the ABC's Australian Story told of children rescued from disaster by Dr Michelle Telfer, attractive, dedicated, youthful paediatrician, mother, former gymnast, and head of the gender dysphoria clinic in Royal Children's Hospital, Melbourne. Having been born into the wrong body, but now given ones by Dr Telfer that would match their minds, the children appeared set to live 'happily ever after' (and I hope they do), as blessed by the husband and wife pastors of 'progressive' Christianity (though resplendent in the black regalia and white dog collars of yore) whose own child is amongst the transformed.

Gratitude for salvation was as exuberant as condemnation of evil. How dare some describe the salvific process as 'experimental'? How dares The Australian newspaper seek evidence for hormonal resurrection? How dares an old, white male paediatrician raise the spectre of 'castration' when reproduction may surely be achieved by taking biopsies of ovaries and testicles before their damage by chemicals, or their removal in surgery, in frozen expectation of the later miracle of in vitro fertilisation? Or by the emergence of a baby from a uterus hidden in a masculinised corpus to suckle amongst the foliage of a hirsute chest?

In such stories, as of old, the listener might expect the emergence of some clear principles of life, some sign posts to truth. Better still, the fairy grandmother might share the truth, the whole truth and nothing but the truth: certainties upon which you could stand secure. Sadly, 'A Balancing Act. Michelle Telfer' is poorly named.

The first imbalance: the effects of blockers are reversible.

To the upturned face of a trusting 11 year old natal boy who had become 'sick of living in her body', and who just happened to ask 'how do puberty blockers work?', Dr Telfer explained the drug 'gives you time to think about what you want to do in the long term without you having to worry about your voice dropping or going hairy or any of those things'.

She reassured 'puberty blockers are reversible. The only risk is that (they) can affect your bone density and, if you decide in a couple of years...(you) don't want to be a female...we can stop this drug and your body goes back to how it would have been'. To a wider audience, she declared blockers provide 'time to...mature cognitively and emotionally' so that 'when the time comes she would be competent to make that decision on her own'.

What do blockers do?

Blockers suppress the vertical cascade of hormones, from hypothalamus to pituitary to gonads and then to body, that bring about the changes of puberty, neutralising sexualisation. If stopped, the process may resume, giving partial justification for the word 'reversible'. Problems, however, lie in the associated blocking of the broader, say horizontal, functions of Gonadotropin Releasing Hormone (GnRH), as it is named, whose receptors are found throughout the brain, in regions involving cognition, emotion, memory, reward and sexuality¹²³. Extensions of the nerve cells producing GnRH in the hypothalamus actually extend horizontally into the limbic system while distribution of their product to other regions may occur through cerebro-spinal fluid⁴

International research refutes the claim of 'reversibility'. For example, researchers in Glasgow and Oslo universities, have long demonstrated sustained, deleterious effects of blockers on peri-pubertal sheep (whose lengthy period of puberty is relevant for human comparison). Blockers invoke pathological enlargement of components of the limbic system, associated with interruption of the function of many genes in the amygdala and hippocampus whose role should be the preservation of

the integrity of neuronal cells. In consequence, there is lasting reduction in spatial memory and increased emotional lability, reducing performance in mazes.⁵⁶⁷⁸⁹¹⁰ Male sheep become more 'gung ho', females more fearful in their confusion.

Recently, from New York, researchers report 'behavioral and neurological' effects of blockers on mice. Admittedly, the sexual behaviour of rodents might seem esoteric but the authors explain the model 'has the potential to isolate the biological effects of GnRH...on brain function and behavior from the dysphoria and psychological distress associated with incongruence between gender identity and natal sex'.

In females, blockers resulted in 'profound effects on...behaviors', interpreted as depression (despair-like behaviour), and on the neural activity in the hippocampus, 'a brain region crucially involved in stress processing, depression and cognition'. Blocked males exhibited 'pronounced differences in locomotion (they were hyperactive. Ed) and social preference (they preferred the company of males, and showed none of the usual interest in the opposite sex. Ed), and increases in neuroendocrine responses to stress'.

In humans, given blockers to reduce the provocative effect of sex hormones in such diseases as endometriosis and prostate cancer, research has long reported unwanted effects on cognition, emotions and executive function, though conclusions are rendered difficult by confounding effects of age, disease and other treatment¹¹¹²¹³¹⁴¹⁵¹⁶¹⁷.

Studies on the developing brain of adolescence are very limited but should temper claims of reversibility. In one transgendering adolescent, two years of blockers prevented expected brain development, and were associated with some reduction in operational memory. The authors speculated on disruption of the synchronic development of the brain.¹⁸

Outside the brain, biopsies, investigating the increased incidence of intestinal symptoms in women receiving blockers for endometriosis, have revealed marked reduction in the nerve cells directing peristalsis¹⁹, adding clinical weight to laboratory contention that GnRH has a widespread role in maintenance of neuronal integrity²⁰²¹

Thus, there is no evidential support for the fulsome assurance of 'reversibility'. To the contrary, there is evidence and strong suggestion of damage.

The second imbalance: they provide time for wisdom. The claim blockers provide time for the gaining of wisdom regarding sexuality and the capacity for informed consent to massive intervention is biologically implausible.

a) Regarding sexuality, sex specific organisation of the brain occurs within weeks of conception, to await further organisation and activation of specific centres during puberty. Blockers neuter the latter process.

Decades ago, a 'primary' mid-brain centre was identified which, when activated by GnRH in immature animals, resulted in sexualised behaviour. Denied that activation, sexualisation did not occur²²²³²⁴.

As well, researchers have long known that 'socio-societal effects' can stimulate sexualisation in animals. Known as the 'ram effect', a range of olfactory, auditory, visual, tactile and social stimuli was found capable of inducing ovulation in females²⁵²⁶. Still not well understood, this sexualisation is dependent on GnRH²⁷.

In humans, the secondary effects of the GnRH dependent gonadal sex hormones, testosterone and oestrogen, range from behaviour, to cognition and emotions, to physical manifestations and, of course, sexualisation and libido.

The question is, how can a child establish gender identity when denied the creative effects of primary and secondary centres upon which it depends, and when neurons are interrupted in the brain centres that integrate sex with cognition, emotion and experience ?

Regarding the brain, enormous developments begin with puberty and continue into early adulthood, with GnRH and the sex hormones being members of a chorus of stimulants. Maturation of various regions, however, is not synchronous. For example, the forebrain usually lags behind the limbic system, resulting in the risk taking of adolescent males and the reticence of females. Wisdom, however, depends on a balance of cognitive, emotional, and experiential factors.

Society recognises the imbalance of adolescence and denies rights to alcohol, tattoos, driving cars and joining the army. To the contrary, the Children's Hospital in Melbourne insists on a special exemption for gender confused children: they should be granted special 'agency' for massive intervention of life-long importance, despite lack of supporting evidence and the growing ranks of 'desisters' who regret they were not protected from their immaturity.

Two other biological factors are relevant to consideration of the capacity for informed consent in children on hormonal intervention. First, the observation that almost all children who start on blockers proceed to cross-sex hormones is argued to be confirmation of maturity of decision. But, studies on blocked sheep²⁸ and rodents²⁹ suggest an alternate, iatrogenic explanation: blockers interfere with the limbic system, reducing exploration and increasing fearfulness. The animals prefer the familiar to the novel: they avoid change. Thus, the decision to progress to cross-sex hormones may not represent wisdom, merely the role of chemical tram tracks.

An associated psychological pressure to proceed to cross sex hormones is that of the difficulty of rejection of the adopted persona in the face of all those authority figures in the family, the school, the web, and the hospital.

Second is the effect of cross-sex hormones on the brain. Researchers have found the adult male brain shrinks at a rate 10 time faster than ageing after only several months of exposure. The female brain hypertrophies³⁰. The effect on the growing brain of adolescents can only be imagined: there are no studies. And the adolescents are likely to be on them for life. Can straight thinking be presumed in an altered brain?

The question is, how can society permit agency for such massive interventions when the vagaries of cerebral development are already known, and there is established proof of interruption to function and structure by the very chemicals about to be administered?

Some external balance.

Lately, some major authorities have concluded, contrary to the Melbourne hospital, that children do not possess the capacity for informed consent for hormonal and surgical transgendering. Sadly, the ABC, however, is not the place to obtain a balanced view of these things.

In June, 2020, the Council for Choices in Health Care in Finland, having declared 'gender re-assignment of minors is an experimental practice', insisted 'first-line intervention...is psycho-social support... (which) should be provided in school and student healthcare and in primary healthcare for the treatment of gender dysphoria due to variations in gender identity in minors'. Gender

identity assessment may be considered only after 'other psychiatric symptoms have ceased and adolescent development in progressing normally'. Rigorous research should 'collect extensive information on the diagnostic process and the effects of different treatment methods' and no 'irreversible treatment should be initiated'.

On December 2020, the UK High Court concluded, on the basis of 'limited evidence...of efficacy or purpose' for hormonal 'affirmation' that 'There will be enormous difficulties in a child under 16 understanding and weighing up this information and deciding whether to consent to the use of puberty blocking medication. It is highly unlikely that a child aged 13 or under would be competent to give consent to the administration of puberty blockers. It is doubtful that a child aged 14 or 15 could understand and weigh the long-term risks and consequences of the administration of puberty blockers. For ages between 16 and 18, the court considers it advisable to request a court approval before starting hormonal treatment, since the treatment should be regarded as experimental'. In consequence, the NHS discontinued initiating hormonal treatments in individuals under 16.

In April 2021, the government of Arkansas banned hormonal 'affirmation' and surgery for children under the age of 18, and other US states may follow.

In May 2021, Sweden's Astrid Lindgren Children's Hospital stopped prescribing blockers and cross sex hormones to children under 18 years.

Meanwhile, in February 2021, the Victorian parliament approved legislature to incarcerate for up to 10 years and inflict crippling fines on anyone seeking to 'change or suppress' another's sexual orientation or gender identity, thus mandating referral of a dysphoric child to Dr Telfer's clinic.

The third imbalance: hormonal 'affirmation' is not the only treatment.

Australian Story promotes the idea that 'affirmation' is the only therapy available and that 'doing nothing' increases the suffering of the child, including self harm and suicide. This promotion is false on two accounts: No-one advocates doing nothing, and individual and family psychotherapy with attention to social and co-morbid mental disorder does not equate with 'nothing'.

To the contrary, such therapy is associated with the statistical reality that the large majority of dysphoric children re-orientate to congruity with chromosomes through puberty. Such psychotherapy has long been practiced in Australia. For example, in Western Australia, child psychiatrist Robert Kosky admitted to hospital the eight children referred to the gender service in 1975-80, reporting a 'generally good outcome' and warning the disrupted 'familial and social context...should counteract undue emphasis on the aberrant behaviours themselves'³¹. International literature confirms such therapeutic intervention³² and must underpin the recent decisions by Finland, Sweden etc to consider it 'first line'.

Perhaps the best known programme of psychotherapeutic intervention is that of Canadian psychologist Kenneth Zucker who was amongst the first to report that the majority of dysphoric children will orientate to congruence with chromosomes.

It is worthwhile comparing Zucker's programme with that of Melbourne, as mentioned by Dr Telfer in Australian Story. In his review of the Biopsychosocial Model of Care³³ that had been offered to the 590 children referred to his unit in its 35 of existence, Zucker details an exhaustive approach of telephone discussion, at least 6 child/parent interviews, and evaluations of some 20 checklists, questionnaires and school reports. Subsequent therapy involved scores (sometimes hundreds) of counselling sessions, over many years, whose aim was to help the child become 'comfortable in the skin' in which it was born.

In contrast, Dr Telfer reported 473 children had been referred to the Melbourne gender clinic in 2020 alone, though, perhaps defensively, she assured 'more than 20% never go beyond the first assessment'. Of those 'who do feel that medical affirmation is necessary for them, they will see either a psychologist or a psychiatrist at least three times before they see anyone like a paediatrician or an endocrinologist who might start to consider whether a medication is going to be something to help'.

In Melbourne, numbers have soared, assessment appears rudimentary, psychotherapy is inapparent, and the goal appears different: more about making the skin fit the brain. Dr Telfer's enthusiasm is indicative: she recalls thinking 'I can help this (natal girl) child have a boy's body...how many people can do that'?

Zucker's intensive and prolonged programme (and similar programmes) became known, inaccurately, as 'wait and see'. And, that misleading description appears to have facilitated the programme's derogation to 'doing nothing': except, of course, to warranting criminalisation in Victoria.

The question is, what is the ideological compulsion behind that criminalisation?

The fourth imbalance: childhood gender dysphoria and suicide.

There is no doubt: those evincing the distress of gender dysphoria are suffering, vulnerable children, usually emerging from broken homes and burdened with co-morbid mental disorders, including autism.

Authors from the Children's Hospital at Westmead, Sydney, emphasise their developmental pathways 'are shaped, at least in part, by Adverse Childhood Events (including maltreatment), loss of family stability and cohesion, and socio-economic disadvantage'. They note 'comorbid psychiatric diagnoses' occurred in 87.7%, and that histories 'of self harm, suicidal ideation, or symptoms of distress were also common'.

Of relevance to discussion above, the authors declare 'treatment interventions...require a comprehensive biopsychosocial assessment with the child and the family, followed by therapeutic interventions that address, insofar as possible, the breadth of factors that are interconnected with each particular child's clinical presentation'. Perhaps mischievously, it might be asked if such interventions would land the authors in gaol in Victoria?

The point is, however, that though it is well known that children suffering social and mental burdens may harm themselves and, therefore, demand special attention, there is no evidence that gender dysphoria *per se* leads to suicide and, therefore, justifies the massive intervention of hormonal transformation.

To the contrary, there is epidemiological evidence that transgendered adults suffer a rate of suicide some twenty times higher than the general population³⁴³⁵. Thus, one way for prevention of that tragedy might be helping the child to become more comfortable in 'the skin in which it was born'.

Ostracism is blamed for the high rate of adult suicide by proponents for 'affirmation', but of equal importance might be associated mental disorder, failure to find expected gold at the end of the Rainbow (ask any of the growing crowd of desisters) or, dare it be said, the alteration of pathways vital to a sense of well-being by iatrogenic administration of chemicals.

The problem is evaluation of the contribution of associated fellowship in the process of 'affirmation' in childhood. Rightly so, in the gender clinics, the suffering of the children is likely to be enwrapped in unprecedented encouragement, attention, compassion and care, indeed, in the love of many adults, not to mention psychological affirmation from friends, the web, acknowledgement at school and even promotion of the media. What childhood suffering would not be blessed by that warmth? The danger, according to statistics, lies in the cold, lonely years of transgendered adulthood. May the children in Australian Story never face such challenges.

The imbalanced role of the ABC.

Impartiality is claimed to be 'one of the most fundamental elements of content making in the ABC'. Its stated goal is to ensure audiences will receive 'fair and unbiased information which will help them to gain a reasonable understanding of an issue and to make up their own minds'.

Such fundamental element is lacking in the ABC's portrayal of gender dysphoria in children. Its repeated proclamation to the masses of a few simple, unquestioned, one-sided assertions better deserves the appellation, 'propaganda'.

Suppression of alternate opinion characterizes all revolutions. Will it be cancelled in such platforms as The Australian? Remember: powerful activists in Victoria have proclaimed the need to abolish 'public broadcasts' that hinder the 'affirmative' model of hormonal therapy for confused children³⁶.

The question is, how long will the tax-funded ABC remain a voice for cultural revolution?

¹ Quintanar J, Salinas E, Gonzalez R. Expression of gonadotropin releasing hormone receptor in cerebral cortical neurons of embryos and adult rats.. Neuroscience Letters. 2007. 411:22-25.

² Stopa EG, Koh ET, Svendsen CN, Rogers WT, Schwaber JS, King JC 1991 Computer-assisted mapping of immunoreactive mammalian gonadotropin-releasing hormone in adult human basal forebrain and amygdala. Endocrinology 128:3199–3207

³ Hormones, Brain and Behaviour. 2nd edn. Jennes et al. The Gonadotrophin-releasing hormone and its receptor.

⁴ Caraty A, Skinner D. Gonadotrophin-releasing hormone in third ventricular cerebrospinal fluid: endogenous distribution and exogenous uptake. Endocrinology 2008.149(10):5227-5234.

⁵ Nuruddin S, Bruchhage M, Ropstad E et al. Effects of peri-pubertal gonado-tropin releasing hormone agonist on brain development in sheep...a magnetic resonance imaging study. Psychoneuroendocrinology. 2013;38;3115-3127.

-
- ⁶ Nuruddin S, Wojniesz S, Ropstad E et al. peri-pubertal gonado-tropin releasing hormone agonist treatment affects hippocampus gene expression without changing spatial orientation in young sheep. *Behav. Brain Res.* 2013.;242:9-16.
- ⁷ Nuruddin S, Krogenaes A, Brynildsrud OB et al. Peri-pubertal gonadotropin-releasing hormone agonist treatment affects sex based gene expression of amygdala in sheep. *Psychoneuroendocrinology.* 2013;38(12):3115-3127. Doi
- ⁸ Hough D, Bellingham M, Haraldsen I et al., 2017 Spatial memory is impaired by peripubertal GnRH agonist treatment and testosterone replacement in sheep. *Psychoneuroendocrinology.* 2017; 75:173-182.
- ⁹ Hough D, Bellingham M, Haraldsen I et al., A reduction in long-term spatial memory persists after discontinuation of peripubertal GnRH agonist treatment in sheep. *Psychoneuroendocrinology.* 2017; 77:1–8.
- ¹⁰ Wojniesz S, Vogele C, Ropstad E et al. Prepubertal gonado-tropin-releasing hormone analog leads to exaggerated behavioural and emotional sex differences in sheep. *Hormones and Behaviour.* 2011;59:22-27.
- ¹¹ Grigorova M, Sherwin BB, Tulandi T. Effects of treatment with leuprolide acetate depot on working memory and executive functions in young premenopausal women. *Psychoneuroendocrinology.* 2006;31(8):935-947. Doi [10.1016/j.psyneuen.2006.05.004](https://doi.org/10.1016/j.psyneuen.2006.05.004)
- ¹² Sherwin BB et al. 'Add back estrogen reverses cognitive deficits induced by gonadotropin releasing hormone agonist in women with leiomyomata uteri. 1996;81:2545-2549.
- ¹³ Varney NR et al. Neuropsychologic dysfunction in women following leuprolide acetate induction of hypogonadism. *J Assit Reprod Genet.* 1993;10:53-57.
- ¹⁴ Nelson CJ, Lee JS, Gamboa MC et al Cognitive effects of hormone therapy in men with prostate cancer: a review. *Cancer.* 2008;113(5):1097-1106. Doi [10.1002/cncr.23658](https://doi.org/10.1002/cncr.23658)
- ¹⁵ Craig MC et al. Gonadotropin hormone releasing hormone agonists alter prefrontal function during verbal encoding in young women. *Psychoneuroendocrinology.* 2007;32(8-10):116-1127. Doi [10.1016/j.psyneuen.2007.09.009](https://doi.org/10.1016/j.psyneuen.2007.09.009)
- ¹⁷ Berman KF et al. Modulation of cognition-specific cortical activity by gonadal steroids: a positron-emission tomography study in women. *Proc Natl Acad Sci USA.* 1997;94:8836-8841.
- ¹⁸ Schneider MA et al. Brain maturation, cognition and voice pattern recognition in a gender dysphoria case under pubertal suppression. *Fron Hum. Neurosci.* Nov 14, 2017. <https://doi.org/10.3389/fnhum.2017.00528>
- ¹⁹ Ohlsson B. Gonadotrophin_releasing hormone and its physiological and pathophysiological roles in relation to the structure and function of the gastro-intestinal tract. *European Surgical Research.* 2016;57:22-33.
- ²⁰ Prange-Kiel J, Jarry H, Schoen M et al. Gonadotrophin releasing hormone regulates spine density via its regulatory role in hippocampal oestrogen synthesis. *J Cell Biol.* 2008;180:417-426.
- ²¹ Quintanar JL, Calderón-Vallejo D, Hernández-Jasso I. Effects of GnRH on Neurite Outgrowth, Neurofilament and Spinophilin Proteins Expression in Cultured Spinal Cord Neurons of Rat Embryos. *Neurochem Res.* 2016 Oct;41(10):2693-2698.
- ²² Pfaff D, Lewis C, Diakow C et al. Neurophysiological analysis of mating behavior responses as hormone sensitive reflexes. *Prog Physiol Psychol.* 1973;5:253-297.

-
- ²³ Moss R, McCann S. Induction of mating behavior in rats by luteinizing hormone releasing factor. *Science*. 1973. 181:177-179.
- ²⁴ Moss RL, McCann SM. Induction of mating behavior in rats by luteinizing hormone releasing factor. *Science*. 1973;181(4095):177-179. Doi [10.1126/science.181.4095.177](https://doi.org/10.1126/science.181.4095.177)
- ²⁵ Hawken P, Martin G. Sociosexual stimuli and gonadotropin releasing hormone/luteinizing hormone secretion in sheep and goats. *Domestic animal endocrinology*. 2012.43:85-94.
- ²⁶ Martin GB, Oldham CM, Cognie Y et al. The physiological response of anovulatory ewes to the introduction of rams-a review. *Live Prod Sci* 1986.15:219-47.
- ²⁷ Bentley G, Jensen J, Kaur G et al. Rapid inhibition of female sexual behavior by gonadotropin-releasing hormone (GnRH). *Hormones and Behaviour*. 2006.49:550-555.
- ²⁸ Robinson J et al. Effects of inhibition of gonadotropin releasing hormone secretion on the response to novel objects in young male and female sheep. *Psychoneuroendocrinology*. 2014;40:130-139.
- ²⁹ Anacker C et al. Behavioural and neurobiological effects of GnRH agonist treatment in mice-potential implications for puberty suppression in transgender individuals. *Neuropsychopharmacology*. 2021;46:882-890.
- ³⁰ Hulshoff Pol HE, Cohen-Kettenis PT, Van Haren NE, et al. Changing your sex changes your brain: Influences of testosterone and estrogen on adult human brain structure. *Eur J Endocrinol*. 2006;155(1):S107–S111. Doi [10.1530/eje.1.02248](https://doi.org/10.1530/eje.1.02248)
- ³¹ Kosky RJ. Gender-disordered children: does inpatient treatment help? *MJA* 1987;146;565-569.
- ³² Whitehall J. Conversion Therapy and Dysphoric Children. *Quadrant*. March 2019.
- ³³ Zucker KJ, Wood H, Singh D, Bradley SJ. A developmental biopsychosocial model for the treatment of children with gender identity disorder. *J Homosexuality*. 2012. 59:369-397.
- ³⁴ De Cuypere, Elaut E, Heylens G, et al. Long term follow up: psychosexual outcome of Belgian transsexuals after sex reassignment surgery. *Sexologies*. 2006;15:126-133.
- ³⁵ Dhejane C, Lichtenstein P, Boman M et al. Long-Term Follow-Up of Transsexual Persons Undergoing Sex Reassignment Surgery: Cohort Study in Sweden. *PLOS 1*. 2011;6(2):e16885. Doi [10.1371/journal.pone.0016885](https://doi.org/10.1371/journal.pone.0016885)
- ³⁶ Jones, T., Brown, A., Carnie, L. et al. Preventing Harm, Promoting Justice: Responding to LGBT Conversion Therapy in Australia. Melbourne: GLHV@ARCHS and Human Rights Law Centre, 2018.