Victorian
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Commission

Outcomes for Children Born of A.R.T. in a Diverse Range of Families

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Preface

This is one of three Occasional Papers published by the Victorian Law Reform Commission as part of the Commission's work on assisted reproduction and adoption. Occasional Papers provide background information which is relevant to questions which the Commission is considering as part of a law reform project.

A central issue which arises in the context of assisted reproduction is how to recognise and protect the best interests of children who are conceived through assisted reproduction. The three Occasional Papers deal with different aspects of this question.

This paper reviews research findings on the health and other outcomes for children born through assisted reproduction into various types of families. It critically examines a number of studies on this issue, points out the limitations of some of this research and also identifies findings which have been repeated in a number of studies. This is essential information in assessing the effect of the current Victorian laws and considering whether these laws should be changed.

The Occasional Paper was prepared by Dr Ruth McNair, Senior Lecturer, Department of General Practice, University of Melbourne. Dr McNair is an academic general practitioner, and has conducted research and published several papers on lesbian parenting, lesbian health and sexuality and medical education. I thank her for her contribution to this important debate

The two other Occasional Papers in this series are a paper co-authored by Adjunct Professor John Seymour, Australian National University and Sonia Magri, Lecturer, University of Melbourne, which examines how other Australian states and the United States, United Kingdom and Canada regulate access to assisted reproduction, and a paper which examines the meaning of the best interests of children, in light of the provisions of the Convention on the Rights of the Child, written by John Tobin, Lecturer, Melbourne Law School.

The Commission publishes Occasional Papers to inform public debate on areas of law reform we are considering. Occasional Papers reflect the views of their authors and do not contain policy recommendations.

The Commission will be publishing an Interim Report on Assisted Reproduction and Adoption early in 2005. We will then consult further on the draft recommendations in the Interim Report.

Abbreviations

AIHW	Australian Institute of Health and Welfare
ART	Assisted Reproductive Technology
CF	cystic fibrosis
DI	donor insemination
ICSI	intracytoplasmic sperm injection
IVF	in-vitro fertilisation
PGD	pre-implantation genetic diagnosis

Executive Summary

Families in Australian society are heterogenous and include a significant number that have been created using assisted reproductive technologies (ART). These families contribute to the pluralistic nature of our society and influence social change. This Paper examines social, health and developmental aspects for children born as a result of ART.[1] The first principle of the Victorian *Infertility Treatment Act 1995* is that 'the welfare and interests of any person born or to be born as a result of treatment procedures is paramount'. This Paper will discuss outcomes for children born of ART. Its purpose is to enable an informed discussion of the factors which affect the best interests of these children, and to inform decisions regarding appropriate regulation of ART services.

Family Structure and Function, Child and Social Factors Influencing Outcomes

A three-factor framework of issues contributing to child outcomes in diverse families has been adopted for this Paper. The three interrelated areas are family factors (structure and functioning), child factors (including the impact of technology and child identity as it relates to donor conception), and social factors (socio-economic status, family support, peer relationships and degree of stigmatisation).

The nature of family in our society has been changing over recent decades as a result of significant social and economic changes. The increasing availability and range of ART services has also contributed to the increasing diversity in families. Families created through ART may consist of households with:

1 Assisted reproductive technologies include insemination of sperm from either husband/partner or a sperm donor to the cervix or through the cervix in a clinical setting; gamete intrafallopian transfer (GIFT), in which the sperm and egg are transferred into the tube of the woman and then fertilise within the body; and in vitro fertilisation (IVF) and intra-cytoplasmic sperm injection (ICSI), both of which create an embryo in the laboratory for later transfer to the woman's uterus.

- both biological parents;
- one biological parent (mother or father);
- one biological parent and a non-biological parent of the opposite sex;
- one biological parent and a non-biological parent of the same sex;
- two lesbian parents, each of whom has had a biological child within their relationship;
- two parents neither of whom is a biological parent, if the child was conceived using both donor ovum and sperm; or
- more than two parents (for example a lesbian couple and the biological father).

Family structure has been described as an inadequate proxy measure for child outcomes due to the huge variation in levels of functioning within any one family type. Overall, family functioning (processes) rather than family structure is the critical factor in determining children's outcomes. Family processes that improve outcomes for children include family cohesion, minimal conflict, good quality parent–parent and parent–child relationships, consistent parenting style that includes a high level of reward and minimal coercion, and positive inter-generational family relationships.

Concerns that ART parents may have dysfunctional parenting styles due to the intensive and interventionist nature of conception are not borne out in research. ART parents are found not to be over-protective, not to have unrealistic expectations of the child, nor to have increased marital problems following fertility treatment. The non-biological parent of a donor-conceived child is found to accept the child as his or her own, and to be just as effective as the biological parent. Further, a number of positive differences have been found in the quality of parenting within ART families when compared with natural conception families:

- mothers express more warmth toward their child;
- mothers and fathers are more emotionally involved and interact more with their child;
- mothers and fathers are less stressed by parenting;
- fathers who have children through ART are less authoritarian than fathers of naturally conceived children, regardless of whether they are biologically related to them or not; and
- children report less parental criticism than natural or adoptive children.

In addition it has been found that:

- the psychological development of children in ART families is no different to that of children in naturally conceived families; and
- ART children report appropriate levels of parental discipline and control.

In stark contrast to these positive family influences on child outcomes, significant negative influences that are external to the family have been identified, including the effects of stigmatisation. The use of ART, of donor gametes, adoption and surrogacy, and being a single parent, an infertile parent, or a lesbian or gay parent are all stigmatised within our society. Stigmatisation arises from a belief in the primacy of the nuclear family and the right of children to be raised by both biological parents where possible. Social views about ART and diverse families are widely divergent, and are gradually shifting. An increasing proportion of Australians now approve of in-vitro fertilisation (IVF). However, 14% continue to disapprove of IVF even for married couples, 62% disapprove of access to ART by single women and 69% of access by lesbian women.

Stigmatisation of some families can have several negative effects for children.

- They may experience overt prejudice towards different family types as expressed by politicians, religious leaders, friends and even relatives, and as reflected in government policies and public statements.
- Lesbian and single mothers may have difficulty obtaining advice about self-insemination and screening of donor sperm, which may result in infection of the mother and child, with major health consequences.
- Parents using donor gametes may be unwilling to inform close family or even their child about the use of donated sperm.
- There may be reduced social support for the family, which has particular impact on sole-parent families and can lead to less positive child developmental outcomes, regardless of the sexuality or the financial situation of the parent.
- Children's peer relationships can be compromised through difficult school experiences, including hostility or bullying about their family structure or nature of conception.
- Children may choose not to reveal the full extent of their family relationships, which can create a sense of isolation through lack of full involvement of friends in their lives, for example not inviting friends home or not openly discussing their biological parent's partner (who is often also their parent).

- The absence of cultural and educational representations of alternative methods of conception and diverse family structures can reinforce a child's sense that his or her family is different or 'abnormal'.

The reality of the increasing number of diverse families, and the prevalence of adverse outcomes related to their stigmatisation, combine to provide ample evidence of the need to accept, validate and embrace families that include child–parent relationships that are not purely biological. Only then can we claim to be a socially progressive and tolerant society.

THE IMPACT OF TECHNOLOGY

There are almost 5000 children born in Australia each year who have been conceived using ART techniques—including IVF, intracytoplasmic sperm injection (ICSI) and donor insemination. They represent 1.7% of all live births. A range of positive outcomes for ART children can be attributed to parental factors. Parents using ART demonstrate a strong desire to parent, which is found to be beneficial for their children's wellbeing. ART procedures are accessed by disproportionately higher numbers of older couples, as advanced maternal age is a common reason for reduced fertility. Socially, older parents are more financially secure and have more fully developed life skills. This may be one of the factors that lead to more positive parenting styles. Advanced maternal age, however, can have physical consequences for the child. It increases the risk of chromosomal abnormalities, miscarriage rates, and the risk of premature labour and low birth weight, all of which can lead to significant health problems for the child.

The technology (IVF and ICSI in particular) itself is a mixed blessing for these children. While it brings children into many caring and loving families who would otherwise not have been able to conceive, there are potential negative physical impacts:

- IVF and ICSI children have more than double the incidence of peri-natal mortality (defined as the stillbirth of any child of at least 20 weeks gestation and the neonatal death of any child up to 28 days following birth).
- Higher multiple pregnancy rates: the rate of multiple births after IVF in Australia is almost 20%, compared with 1.6% within the general population.
- Higher chance of pre-term birth: 27% compared with 7% in the general population. Pre-term birth increases the risk of several health problems:

  - respiratory problems
  - gastrointestinal problems
  - a need for intensive monitoring in the first few weeks of life
  - visual impairment
  - neurological problems including cerebral palsy
- Increased risk of inheritance of rare genetic abnormalities related to the underlying cause of infertility in their parent, which could lead to childhood cancers, and infertility as adults.

While the physical effects may persist, child psycho-social development and academic achievement has been shown to be no different for children of ART. Multiple births can be minimised through reducing the number of embryos transferred to the uterus, and Australia is leading the worldwide trend to do this. Overall, the risk of major birth defects with IVF is about the same as for naturally conceived children, apart from the possibility of inheritance of rare genetic disorders mentioned above. It is important to recognise that technology also assists in reducing the risk of certain birth defects through the use of pre-implantation genetic diagnosis (PGD), a relatively new technique that will increasingly prevent the transfer of embryos that have serious genetic abnormalities.

THE IMPACT OF BEING DONOR-CONCEIVED

The conflict between the rights of the parents to privacy and the rights of the child to knowledge is said to be one of the most disputed ethical issues in ART, and secrecy regarding donor origins is one of the most significant potentially negative outcomes for donor-conceived children. The majority of heterosexual parents who have used ART with donor gametes do not disclose this fact to their children. In contrast, lesbian parents, gay parents, and families using surrogacy show a high level of openness regarding their child's donor origins, and many value and encourage contact with the sperm/egg donor.

There are several negative outcomes for donor-conceived people in an environment of non-disclosure. Some of these relate to the impact of delayed discovery of donor status and others to being unable to discover the identity of the donor.

Consequences of non-disclosure or inability to identify the donor include:

- A child's identity development may be compromised if they are not told of their donor status prior to puberty. As a result they may feel incomplete or that they do not completely belong to their family.

- Donor-conceived people may be restrained or prevented from searching for their donor out of fear of being perceived as rejecting their parents, fear of being rejected by the donor, or as a result of criticism by others for wanting to seek out their donor.
- Family and other relationships may be compromised in the following ways:
    - before disclosure, many children can sense that something is wrong or inconsistent;
    - when donor origins are discovered, children can feel that their parents have been dishonest, which can lead to reduced self-esteem and difficulty in forming trusting relationships;
    - some children feel forced to collude in non-disclosure to others to 'protect' the family;
    - many children are concerned that they could inadvertently form an intimate relationship with a sibling or other close relative;
- The person may not be able to obtain genetic information about the donor, which could be important for the health of the donor-conceived person.

The types of information that donor-conceived people want to know about the donor include:

- non-identifying information such as physical characteristics, ethnic and cultural background and medical history; and
- the donor's identity and various personal traits.

They may also feel the need to develop a relationship with the donor. The majority of people who do seek contact with their donor do not regard him or her as a parent.

Not all donor-conceived people want to discover the identity of their donor. Nor do all have adverse outcomes. However, the negative consequences that can arise warrant a challenge to the ongoing practice of secrecy. Parents of donor-conceived children need to be equipped with information about when, how and what to tell their children. In particular, this will involve early disclosure of donor status, well before puberty, and then tailoring information to the needs of their child at each developmental stage.

SURROGACY AND CHILD OUTCOMES

Surrogacy is another of the highly controversial areas of assisted reproduction, and generates polarised views in our society. Moral arguments feature prominently, and there is no general agreement on its 'moral permissibility'. Unfortunately, this is also the area of ART with the least empirical data to draw on. Very little at all is known about the children's outcomes, particularly as there are very few children of ART-assisted surrogacy who have reached adulthood. Small studies have shown that the children of surrogacy arrangements are psycho-socially well adjusted, however, these studies have to date involved only preschool aged children.

Parents using surrogacy generally have a high socioeconomic status. Like ART parents, non-biological mothers have high quality relationships with their children, and the lack of a genetic link does not affect their identity as mothers. Contrary to fears, commissioning parents show little conflict with the surrogate mother and a majority plan for ongoing contact between their child and the surrogate mother. These parents are universally open with the children regarding the use of surrogacy in their conception.

OUTCOMES FOR CHILDREN IN LESBIAN AND GAY FAMILIES

A range of rigorous studies has shown that children in lesbian families do at least as well as children in heterosexual families. Recent studies have identified some differences in child outcomes, most of which are positive. The outcomes for children growing up with lesbian parents include:

- no difference in cognitive function;
- no difference in emotional function;
- no difference in psychological and behavioural development;
- gender role behaviour: children tend to play gender-typical games, however, some male and female children of lesbian parents show less traditionally gender-ascribed traits;
- no differences in sexuality identity for adult offspring of lesbian and non-lesbian families, although some adults from lesbian families are more likely to consider the possibility of not being heterosexual, and are more likely to report same-sex experience;
- children show more awareness and understanding of diversity more generally; and

- while some children report reduced self-perceived academic and physical competence, they actually have equal levels of competence when tested by teachers.

Recent studies have pointed to important positive differences in the parenting style of lesbian parents compared with that of heterosexual parents. Many are similar to the differences found among parents using ART.

- Lesbian couples consider the decision to use donor insemination for longer than heterosexual couples, and many researchers have highlighted the positive influence of choice and planning in lesbian family formation.
- Lesbian couples accessing donor insemination have more cohesive relationships than heterosexual couples accessing the same clinic.
- The relationship satisfaction of lesbian and heterosexual couples with children is no different.
- Lesbian mothers have the same levels of self-esteem, depression and anxiety as heterosexual mothers, whether coupled or single.
- There is more egalitarian co-parenting between lesbian mothers and possibly between gay fathers.
- Same-sex parents demonstrate that parents of either gender have the same capacity for nurturing, division of labour and for achieving an authoritative style that creates positive child outcomes.
- The majority of non-birth mothers within lesbian families take on a parenting role and are shown to develop a quality relationship with their child. Some comparisons show that the quality of the relationship between non-biological mothers in lesbian families and their children is better than that between non-biological fathers and their children in heterosexual donor insemination (DI) families.

In most lesbian families using donor conception, the biological father does not have a primary parenting role. Lesbian parents distinguish between parenthood and fatherhood, in that the donor is often regarded as a father in the biological sense but not as a parent. The challenge for lesbian parents is to strike a balance between their own need for integrity of their family unit, and the child's possible need to know their biological father. Many children in these families are just as inquisitive about their donor's identity as other donor-conceived people, although they have the advantage of the almost universal disclosure of their donor-status from an early age.

Some lesbian parents choose known donors for their child's benefit and others choose unknown donors (through clinics). One reason for preferring an unknown donor is the lack of legal and social recognition of the non-biological mother as a parent and her resulting vulnerability within the legal system. Choosing an unknown donor could be a disadvantage for children wishing to know his identity in the future, if anonymous sperm has been obtained in a state where the law does not provide for identity release. Gay men are taking on a primary parenting role in some situations, and these men are fulfilling a highly revolutionary role in redefining fatherhood in Australia.

Children of lesbian and gay families and their parents fear that they may be more stigmatised than other children and this is found to be the case. Children of lesbian and gay parents report being bullied at school due to their parents' sexuality. However, these families develop a range of strategies that assist their children to successfully deal with such issues, enabling them to form successful peer relationships, and creating resilience that prevents them from developing emotional consequences of being stigmatised.

CONCLUSION

There is sound evidence of equal or more positive outcomes for children born into families with non-biological parents, same-sex parents and through surrogate arrangements. These apply both to children's emotional, social and psychological development; and to parenting styles and family functioning. These positive findings are balanced for some ART and donor-conceived children by the adverse impacts of the technology itself and of non-disclosure of donor status.

From the children's perspective, ART can be safely offered to any family type, regardless of the sexuality of parents, or the need for donated gametes, providing that parents are fully informed of the two areas that can adversely affect their children: health risks related to the use of technology for conception, and risks to identity formation and family relationships caused by late disclosure of donor identity or the inability to identify the donor.

The impact of social factors, including stigmatisation of children within these diverse families, is considerable and social policy, legislation, and public systems are failing to keep pace with the social changes that create these children. Inadequate representation of diverse families in the public arena increases the already stigmatised nature of ART, infertility, surrogacy, and lesbian and gay families. Society has a responsibility to respond to their needs and to provide a nurturing social environment.

In the face of ongoing stigmatisation, these children appear to be remarkably resilient, negotiating the stigma by developing strong peer relationships through careful choice. They are not only aware of their own family diversity, but develop a rich understanding of diversity more broadly. Having made a deliberate choice to have children, their parents are providing an effective and loving environment and equipping their children with skills that build resilience. They also instil the value of acceptance of diversity in their children. In this way, parents and their children are positively contributing to our pluralist society.

Introduction

The Australian scientific community has contributed to world-leading advances in technology that assist conception. This technology is also becoming increasingly accessible. In parallel, Australian family structures have become more diverse. In contrast to the social reality that there are more children born into a diverse range of families, many Australians still regard the nuclear family model as the gold standard for child rearing. They remain concerned that other family structures are inferior or even detrimental to the wellbeing of children. While the nuclear family is assumed to be successful (a disputed assumption not covered here), social imperatives dictate that evidence must be provided that other families create appropriate environments for children.

This Paper examines social, health and developmental aspects for children born as a result of assisted reproductive technologies (ART).[2] I start by defining a framework that outlines the various factors that are known to affect child outcomes. This framework is first applied to all children of ART, regardless of the type of parents. Two particularly controversial areas underlie much of the public consternation towards ART: whether having a biological connection to one or both parents is important to child outcomes,[3] and the degree to which donor-conceived children should be informed of their donor status. These will both be explored from the child's perspective. Evidence for children from surrogacy and adoption will also be discussed where the context intersects with ART. Finally, outcomes for children of lesbian and gay parents accessing ART will be discussed in detail. The Paper will not deal with other forms of family diversity, including blended or step families arising from relationship breakdown and divorce.

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2 Assisted reproductive technologies include insemination of sperm from either husband/partner or a sperm donor to the cervix or through the cervix in a clinical setting; gamete intrafallopian transfer (GIFT), in which the sperm and egg are transferred into the tube of the woman and then fertilised within the body; and in-vitro fertilisation (IVF) and intra-cytoplasmic sperm injection (ICSI), both of which create an embryo in the laboratory for later transfer to the woman's uterus.

3 Many children of ART are biologically related to both parents, as ART techniques often involve the use of the father's sperm and mother's eggs to overcome their reduced fertility. Some children of ART are donor-conceived, which means that sperm and/or egg are from a donor and not from the child's social parent(s).

My position is one of enquiry. I have set out to find legitimate and rigorous studies that specifically address outcomes for children. Some criticism has been levelled particularly at the lesbian and gay literature in the area. I address the methodological limitations of these studies and, where possible, use studies that minimise these limitations. Australian studies have also been included to incorporate a local context. One methodological challenge common to studies in this area is that participants can be difficult to find. Heterosexual families using anonymous donors, donor-conceived children, lesbian parents, and gay fathers using surrogacy may be reluctant to participate in research. Social science research in this context has developed various purposive sampling methods such as snowballing, which are regarded as methodologically appropriate (Plumb 2001, p 168). Resultant samples are not representative of the wider population. However, they do provide legitimate information about these hard to reach groups.

There are various approaches to the study of outcomes for children in diverse families. One approach measures outcomes against those of children in nuclear families. These studies tend to be quantitative and are important in answering the common question of whether children are adversely affected. Earlier research in this area used a deficit model, assuming that families involving anything other than a biologically related mother and father were deficient. These include studies that examined 'father-absent' families (Sanson & Lewis 2001a). More recent studies have taken a more open comparative approach, being willing to search for both negative and positive differences, and similarities between families. A second approach is more exploratory, seeking to describe and understand the lived experience of children in diverse families. These studies, emerging over recent years, tend to be qualitative and can create a deeper understanding of the children's outcomes.

Throughout this Paper, I recognise the heterogeneity of family in our society. I start with the view that no particular family type or conception method has any greater legitimacy from the child's perspective and then test this against the evidence. In acknowledging both 'created and assigned kinship' (Cherlin 1999), I do not challenge the ongoing value of the nuclear family as one of the many legitimate family forms. However, I do acknowledge the 'post-modern family condition' as defined by Stacey as a fluid and diverse system contributing to our pluralistic society (Stacey 1996).

A Framework for Child Outcomes

Child outcomes include physical, social, cognitive and emotional development. Some outcomes such as inter-relationships with parents, peers, and adults and educational outcomes, health measures and behaviour can quite readily be measured. Other areas are more difficult to measure, for example the child's perspective of their own wellbeing. The Australian Institute of Health and Welfare (AIHW) bases the measurement of child health and wellbeing on the National Child Health Information Framework (Australian Institute of Health and Welfare 2002). This has three domains: health status (health, growth and development, illness, disability, safety), risk and protective factors (including social, biological, environmental and family issues), and services (including health programs). It is clear from this framework that a large number of intersecting factors contribute to the outcomes for any child beyond the family itself. It is important to use a multi-dimensional framework when considering factors affecting child outcomes, and not to view any one particular factor, for example family structure or method of conception, in isolation. The Australian Institute of Family Studies suggests a three-factor framework when dealing with diverse families, which will be adopted for this Paper (Wise 2003). The three interrelated areas are:

1. Family factors

These involve the interrelated issues of family structure and family function.

Family structure:

- number of parents
- gender of parents
- sexuality of parents
- stability/consistency of parenting arrangements

Family process or functioning:

- degree of desire for parenthood
- family cohesion or conflict
- quality of parent–parent relationship
- parenting style and disciplinary methods

- parental involvement with the child: engagement and accessibility, degree of warmth, emotional involvement, extent to which child's needs come first
- inter-generational involvement, especially of grandparents

2. Child factors:

These include temperament, adaptability and gender. In the context of ART, I will discuss two other child-related issues here:

- the conception method, specifically the impact of technology on the child; and
- the identity of the child as determined by the extent to which he or she knows about his/her biological heritage.

3. Socio-cultural factors

Factors external to the immediate family can strongly influence the functioning of that family and are also found to independently affect child outcomes.

- socioeconomic status
- social support
- legal support
- school environment
- peer relationships
- general social values and degree of stigmatisation or acceptance

Each of these factors will be discussed from the perspective of any child born using ART and surrogacy. Finally, the impact on children of growing up in lesbian and gay families from conception will be discussed.

THE CHILD'S BEST INTERESTS AND ART

The welfare of the child is increasingly acknowledged as a primary consideration when evaluating ART regulation around the world (Fasouliotis & Schenker 1999). The Victorian legislation regulating ART led the way in 1984 as one of the first such Acts in the world, and clearly prioritises the child's interests. The first principle of the *Infertility Treatment Act 1995* (Vic) in section 5 is that 'the welfare and interests of any person born or to be born as a result of treatment procedures are paramount'. Reaching an agreement on what this actually means, however, is not straightforward. Coady states that it is very difficult to predict what the interests of the child will be as we lack knowledge of what the child will want

(Coady 2002). She states that the only certainties are the obvious physical needs (food, housing, health) and freedom from violence. It is hoped that the following discussion of outcomes for children will enable a more informed discussion of the true determinants of the best interests of the child, and therefore inform decisions regarding appropriate regulation of ART services.

Beyond the best interests and welfare of the child, should the rights of the child also be considered? Coady suggests it is appropriate to use a rights argument in the regulation of ART and that in extreme cases this can be extended to the right not to be born, however, such cases would be extremely rare (Coady 2002). Savulescu agrees that any child may suffer, however, this does not remove their right to be born unless the suffering renders life not worth living (Savulescu 2002).

Once the child is born the United Nations *Convention on the Rights of the Child* comes into effect.[4] The Convention has been criticised for neglecting particular marginalised groups of children including disabled and gay children, and therefore failing to protect their rights (Freeman 2000). It also fails to define parent and to include mention of diverse family structures including single parent and lesbian and gay families. Such exclusion indicates that the instrument is somewhat dated in its application and requires revision. It has been suggested that using a rights framework is a 'smokescreen', diverting attention from the real issues that affect children such as economic disadvantage and social oppression (Freeman 2000). I believe that a rights argument is important, however, in this Paper I focus on the child's best interests.[5]

FAMILY FACTORS

What is family? What is a 'normal' family? The nature of family has been changing over recent decades, both in structure and function, as a result of significant social and economic changes (Wise 2003). Various influences have created a desire to marry later and to delay child-bearing, including changes in women's role in the workforce and society. This has increased the demand for ART services as women initiate attempts to conceive in their late 30s or early 40s when their fertility is declining. This also means that single women who have not

4 The *Convention on the Rights of the Child* includes the need to protect children from discrimination, for the child to know and be cared for by his/her parents, the right to life and survival, to have contact with both parents where possible, to preserve his/her identity, and the right to the best available health care.

5 The rights of the child will be discussed in another discussion paper commissioned by the Victorian Law Reform Commission.

yet found a life male partner may decide to conceive alone. In parallel, men are starting to take an interest in a more active role in parenting their children. With increasing secularisation of western society, divorce rates are rising and more couples are choosing to have children within de facto relationships. Acceptability of non-heterosexual sexuality has increased, with a concomitant downward shift in the age at which women and men identify as lesbian, bisexual or gay. This has contributed to increasing numbers of lesbian women choosing to have children within their lesbian relationship (McNair 2002a). Some gay men are now also looking for a primary parenting role with their children, and a few are looking to have children within their relationships through surrogacy. Medical advances have also led to the availability of ART that has increasing levels of sophistication and success rates.

An Australian National University study in 2003 on societal attitudes regarding who is family revealed that 65.3% of 18–34 year olds agreed that a same-sex couple with children constitutes a family, 55.5% of 35–49 year olds, and only 14.1% of over 65 year olds (Symons 2004). While younger generations are starting to embrace family diversity, our legal and social bureaucracies have not kept pace with these social changes through failing to redefine family or maintaining narrow definitions of family. There is no generally accepted international family law definition of family, and no definition of family in Australia's *Family Law Act 1975*. While this creates flexibility and autonomy in decision making for individual judges, it does not bring any degree of security for members of families who are not socially defined as family.

The AIHW used the 1999 census data to categorise four family types and provides data on the proportion of each type with children 0–7 years of age (Australian Institute of Health and Welfare 2002):

- Intact family: 'a couple family containing at least one child who is the natural child of both members of the couple, and no child who is the stepchild of either member of the couple': 74%.
- One-parent family: a family consisting of a lone parent with at least one dependant or non-dependant child who is usually resident in the household': female parent 16%, male parent 2%.
- Step-family: 'a couple family containing one or more children, at least one of whom is the stepchild of either member of the couple and none of whom is the natural or foster child of both members': 5%.

- Blended family: 'a couple family containing two or more children, of whom at least one is the natural child of both members of the couple, and at least one is the stepchild of either member': 3%.

These categories reflect some of the diversity in Australian families. However, quite a number of families are not represented, particularly many of those that use ART or surrogacy. These include families in which more than two adults are involved in a parenting role (eg a lesbian couple and the biological father), families in which there is at least one child biologically related to both parents and another child unrelated to either (eg intact family plus an overseas adoption), lesbian parents who each have a biological child within their relationship (who would not regard themselves as step-parents of either child). The language used is restrictive. The use of the word 'intact' suggests a value judgement implying that each of the other types is deficient in some way, and this term has been discredited in family therapy circles for this reason. Describing biological children as 'natural' rather than the more descriptive term 'biological' also implies that non-biological children are 'unnatural'. Adoption advocates have identified the need for using respectful language that reflects the family reality, for example using 'birth mother' rather than 'natural mother' (Grotevant et al 2000). Describing the relationships between all members of the family provides a more useful categorisation:

> In order to describe the familial circumstances of the child, distinctions need to be made between households with both biological parents, one biological parent (mother or father), one biological parent and an adult of the same sex, or neither biological parent but one or more adults providing parent-like relationships (through adoption, donor insemination, foster-care, or extended families caring for children) (Sanson & Lewis 2001a, p 4).

There are no accurate figures for the proportion of Australian families who are living outside the nuclear ('intact') family model. For example, within the 18% of one-parent families, it is not known how many of these parents chose to conceive their child as a single person. There is no method of estimating the number of parents in Australia using surrogacy as these arrangements are generally private. There is also no way to accurately measure the number of lesbian and gay families, although through community surveys it is estimated that 20% of lesbians and up to 10% of gay men are parents, about half of whom created their family within their lesbian or gay relationship (Millbank 2003).

Family Structure as a Measure of Child Outcomes

Family structure has been described as an inadequate proxy measure for child outcomes (Australian Institute of Health and Welfare 2002), due to the huge

variation in levels of functioning within any one type. For example, children in single-parent families are more likely to have poor health. In this context there are several confounding variables including reduced socioeconomic status and reduced adult support that strongly influence child outcomes. Failure to take account of these variables and to avoid describing the diversity within single-parent families has led to a stereotypically negative impression of these families. 'Studies that have attempted to disentangle family structure from other factors tend to suggest that there are no simple causal relationships between family structure and child wellbeing' (Wise 2003, p 7–8).

An important element of structure that does influence outcomes directly is the consistency of the family structure. Greater consistency creates better security for children who then have better academic and emotional outcomes, and better social relationships (Wise 2003). Overall, however, 'family processes rather than family structure are the critical factor in children's adjustment' (Sanson & Lewis 2001a, p 6).

FAMILY FUNCTION

I will briefly discuss the functional factors known to affect child outcomes before moving to the function of ART families. These factors include family cohesion, conflict, quality of parental and parent–child relationships, parenting style and inter-generational family roles. Family cohesion, which is the level of positive interpersonal relationships between all family members, is shown to influence children's mental health. The Child and Adolescent component of the National Survey of Mental Health and Wellbeing examined family cohesion and the mental health of children 4 to 17 years old (Sawyer et al 2000). This showed that 9% of parents rated their ability to get along as a family as poor or fair. Children in these families had more emotional and behavioural problems. It is possible, however, that children's poor mental health may also influence family cohesion so it is difficult to determine cause and effect.

Related to this is the impact of conflict within the family, and specifically between the parents. Conflict between parents is shown to be the main predictor of emotional distress in children (Amato 1993; Golombok 2000), and to be one of two significant risk factors (the other being parental disciplinary style) for children's poor mental health (Golombok, Tasker & Murray 1997; Silburn et al 1996). The level of conflict is consistently found to be a better predictor of child adjustment than family structure. Divorce is often the context in which conflict is studied. In divorce situations where there was minimal conflict, children were found to do better than those in families with parental conflict. This indicates that

conflict, rather than divorce itself, is the pertinent determinant, particularly over a long period of time (Dunlop & Burns 1989).

Parenting style, and particularly disciplinary measures, is strongly related to children's mental health and wellbeing (Silburn et al 1996). The consistency of the disciplinary styles of both parents is important. So-called authoritative disciplinary styles, which include a high use of rewards and minimal coercion are found to be beneficial. Authoritarian styles which have a high level of control and low level of support are detrimental. Mental health problems occur with coercive and inconsistent styles. The balance between control and support is crucial (Vanfraussen et al 2001).

Parental involvement with the child and other aspects of the parent–child relationship affect child outcomes. Children do better when their parents regularly engage with them and are available to meet their needs (Wise 2003). Various measures are related to child wellbeing, including the degree of warmth, level of concern, sympathy and interest in the child as a person (Golombok et al 1997). The level of emotional involvement, including the extent to which the child's needs come first, also influences child development. Children's academic success is partly related to the level of involvement of parents in the school and the relationship between parents and their child's teachers (Mercier & Harold 2003). Increased parental school involvement is also associated with improved child school attendance, completion of homework tasks and more positive behaviour in school. Recent work also examines the role of grandparent involvement in children's lives and suggests more positive outcomes with increased involvement (Fulcher et al 2002).

A final factor that influences child wellbeing is parental health and wellbeing. Multiple effects are at play here including the parent's ability to care for the child physically and emotionally, and the degree to which parental illness influences child illness. For example, it is found that 31% of children with parents reporting low physical health had reduced general health themselves (Silburn et al 1996). Parents with depression can be more negative and punitive in their relationship with their children, which in turn affects children's mental health (Wise 2003).

Family Factors in Families Using ART

How do family structure and function interact within ART families? Concerns have been raised that IVF may be associated with dysfunctional parenting. It was thought that the large emotional investment in IVF might potentially lead to parents being over-protective of their child, having unrealistic expectations of the child as the 'perfect' outcome of their long-held dream, or having marital

problems following fertility treatment. A further concern for children of donated sperm or eggs was that the non-biological parent may not accept the child entirely as their own and therefore be a less effective parent. A number of studies have addressed these concerns. In a review of eight studies on outcomes for IVF children, Golombok found that children had normal cognitive, social and emotional development, rated by parents and external observers (Golombok et al 2002). In another review of 12 studies of children of donor insemination (DI) in heterosexual families, the majority of fathers felt they were 'real' fathers, that relationships with their children were good, marital satisfaction was high and child psychological adjustment was normal (Brewaeys 1996). Most of these studies were conducted without a control group, however, so they cannot be used to draw definitive conclusions.

A current European longitudinal study using a rigorous design is comparing families created using DI and IVF with naturally conceived and adoptive families (Golombok et al 1996; Golombok et al 2002). The study measures a number of factors including the quality of parenting, family functioning and child socio-emotional development. It uses questionnaires and interviews with mothers and teachers, and tests with the children of self-esteem and feelings towards their parents. A child psychiatrist, who is unaware of the children's family background also measures their psychological functioning.

The first phase of the study was conducted in Italy, Spain, the Netherlands and the UK when children were aged between 4 and 8 years (Golombok et al 1996). Representative sampling methods were used to obtain 116 IVF families (none of whom had used donated gametes),[6] 111 DI families (using donated sperm), 120 naturally conceived families and 115 families with a child adopted in infancy. The families were matched closely on demographic characteristics. The comparison between IVF and DI families with 'natural' and adoptive families showed several differences indicating that the quality of parenting among families using assisted reproductive technologies (includes IVF and DI) was better than the quality in naturally conceived families. ART mothers expressed more warmth toward their child, were more emotionally involved, interacted more and were less stressed by parenting. Fathers of children via ART also had less parenting stress and interacted more with their children than fathers of naturally conceived children. No differences were seen between IVF and DI families, despite the donor factor in DI families. No differences were seen between adoptive families and ART

6 A gamete is an egg (oocyte) from the woman, or sperm from the man.

families. Children's psychological development was no different in any family type.

The second phase of the European longitudinal study obtained data from the same families when children were aged 11 to 12 years (Golombok et al 2002). Data-collection methods included interviews with mothers, fathers, children and children's teachers to minimise reporting bias. The majority of the parents were still married (93%). However, 6% had divorced or separated and 1% of fathers had died. Divorce rates were the same in each family type, indicating that ART had not affected the longevity of the parental relationship to that time. Results showed again that the quality of the child–parent relationships was very similar between family types and that child development was no different. ART mothers again showed greater emotional involvement with their child and ART fathers showed more warmth and were less authoritarian. ART children reported less parental criticism than natural or adoptive children, yet appropriate levels of discipline and control.

This study not only supports findings from previous studies but also provides compelling evidence that ART does not negatively impact on child outcomes and may be associated with more positive parenting styles. An Australian study also demonstrated that the psycho-social development of ART children is normal (Kovacs et al 1993). These studies assist in putting to rest all of the concerns that had earlier been raised about the problems regarding ART families.

SOCIO-CULTURAL FACTORS

STIGMATISATION

While family structure and function are crucial to child development, there are significant influences on a child's outcomes that are external to the family and can be out of the family's immediate control. These influences include the community, culture and society in which the family exists (Sanson & Wise 2001b). Analysis of child outcomes that is based only on examining individual family factors is a common approach. However, it fails to address underlying social factors, which are the responsibility of public policy and the community to address (Stanley 2001). One of the issues uniting all of the families formed outside a nuclear model of family is stigmatisation. Stigmatisation is defined as 'the condition of being denied full social acceptance' (Goffman 1963, p 2). It leads to various forms of discrimination, that in turn contribute to reduced social support, increased experiences of violence, marginalisation, low self-esteem, increased stress

and ultimately poor mental health and wellbeing (Kessler, Mickelson & Williams 1999; Krieger et al 1993).

Adoption, the use of donor gametes in ART, surrogacy, being infertile, being a single parent or being a lesbian or gay parent are all stigmatised within our society. Some subgroups can experience multiple levels of stigmatisation. For example, lesbian parents identify a double-stigmatisation, that of being a lesbian and that of being a lesbian parent. This arises from society in general, but can also be experienced within the lesbian community, elements of which have traditionally opposed parenting (McNair 2002a). Gay men attempting to access surrogacy arrangements can be deemed inappropriate parents due to their gender, their sexuality or their single status (McNair in press).

The underlying reason for the stigmatisation of all of these forms of parenting is that a significant section of the community continues to believe in the desirability of retaining the 'normative ascendancy of the nuclear family' and that children have a right to grow up with both biological parents if at all possible (Trainor 1995; Walker 2000). This is largely a moral argument. It has been labelled as 'cultural common sense', as it embodies beliefs about family and the absolute need for a mother and father that are deeply embedded and are difficult to challenge with factual information (Clarke 2001). Yet social attitudes change over time and common wisdom can shift ground, as seen in the changing attitudes towards same-sex families mentioned above. 'To pinpoint "public opinion" is to artificially freeze-frame one take of a constantly shifting process' (Edwards 1998, p 168). Coady suggests that our understanding of what constitutes effective parenting also changes, reminding us that during the 1960s, society dictated that mothers should stay at home with their preschool children (Coady 2002). Likewise, removing Indigenous children from 'deprived' families was a strongly supported public policy at the time, but has since been discredited (Sanson & Wise 2001b). Another pertinent example was the absolute belief, now almost universally rejected, in the value of secrecy in adoption up to the late 1970s; a mantle that has proved difficult to throw off within ART circles.

Changing Community Attitudes Towards ART and Alternative Families

Social views regarding ART and diverse families internationally and in Australia are widely divergent (Cannold & Gillam 2002), and shift, not only with time, but

also according to context (Edwards 1998). For example, Kovacs outlines changing community attitudes to IVF in Australia over the past 20 years,[7] and the relative attitudes towards different population groups (Kovacs et al 2003). This data (Table 1) is taken from periodic surveys conducted by the Roy Morgan Research Centre, in which 1000 people per time period are surveyed from randomly selected points in urban and rural locations around Australia.

TABLE 1 CHANGING COMMUNITY ATTITUDES TO IVF IN AUSTRALIA

	Approval for IVF access to:			
Survey Year	Infertile married couples	Surrogate mothers (altruistic)	Single women	Lesbian women
1981–2	77%	32%	–	–
1993	–	53%	18%	7%
2000–1	86%	–	38%	31%

Since 1981 there has been an increase in approval of IVF access overall, but even more marked increases in approval for single women and lesbian access. The authors relate these changes to increasing public knowledge of the procedures and reduced media controversy regarding IVF itself. While the results do reflect changing social attitudes toward access to IVF, 14% continue to disapprove of IVF even for married couples and the majority do not approve of access for single and lesbian women.

These surveys reflect a hierarchical notion that certain population groups are more acceptable as parents and more deserving of costly, rationed services such as IVF than others. While the Morgan research does not indicate why respondents held certain beliefs, other studies partly explain such belief systems. For example, a study of attitudes of USA college students indicated that some viewed lesbian parents more negatively than parents with a history of criminality or mental illness (King 2001). Attitudes in this study were more negative towards lesbian parents if the respondent viewed homosexuality as controllable or as a choice. Other factors associated with negative attitudes towards lesbianism include religiosity and not having a close relative or friend who is lesbian. Attitudes to lesbian and gay sexual behaviour overall are moderately liberal in Australia, with only 21.4% of men and 25.1% of women agreeing that sex between two women is always wrong; and

7 This study only relates to IVF and not other forms of ART such as donor insemination.

36.9% of men and 26.6% of women agreeing that sex between two men is always wrong (Rissel et al 2003). Factors influencing more positive attitudes are being younger, having an English-speaking background, higher levels of education, higher income and identifying as homosexual or bisexual. However, while around three-quarters of Australians do not disapprove of lesbian sexual behaviour, less than one-third approve of lesbians accessing IVF.

MARRIAGE AND FAMILY

One of the objections to diverse families is that children should not be born outside of a married relationship. While this position is strongly held within certain religious communities, it is not appropriate to apply these values to all. This view is not confined to religious leaders. A group of neo-conservative social scientists, including Popenoe and Blankenhorn, advocate the need to retain the nuclear family as the normal or correct family form (Blankenhorn 1995; Popenoe 1993). They assert that a rise in individualism is undermining commitment to family and children.

Despite these attitudes, 31% of Australian children were born outside of marriage in 2001 (Australian Bureau of Statistics 2002). How do these views impact on the children within almost one-third of Australian families? Use of words such as normal, real and ideal to describe the married-parent family emphasise attitudes suggesting other family types are inferior. Respected former Chief Justice of the Family Court, Alastair Nicholson, has made the following comment in defence of one of the forms of family in which parents are not (and currently cannot be) married:

> One of the fundamental misconceptions which plagues me is the failure to understand that heterosexual family life in no way gains stature, security or respect by the denigration or refusal to acknowledge same-sex families. The sum social good is in fact reduced, because when a community refuses to recognise and protect genuine commitment made by its members, the state acts against everybody's interests (Boers 2004, p 3).

The reality of diverse families outside marriage or biologically constructed relationships calls for a broadening of value systems to one of acceptance and validation rather than ongoing stigmatisation.

THE EFFECT ON CHILDREN OF GROWING UP IN A STIGMATISED FAMILY

What is the impact on children within stigmatised families? Negative attitudes towards ART, and families constituted through its use, are expressed by politicians, religious leaders, friends and even relatives (Golombok et al 1995). The impact of stigma in terms of parental stress and potential for depression or risk behaviours, clearly has a negative impact on child health. Donor-conceived children have described their reluctance to tell even close friends that they are not biologically related to their father. 'The topic was taboo and I was not to tell friends or family. To this day I still have not been able to discuss it at all with my dad' (British Medical Journal 2002). This also relates to the stigma experienced by infertile people, which leads to the decision not to inform family, or even the child themselves about the use of donated sperm.

Single mothers deal with various outcomes of stigma, from difficulty in accessing ART (Bennett 2000) to negative experiences at schools (Mercier & Harold 2003), although there is very little evidence available demonstrating whether there are direct outcomes for their children. A particular impact of stigma is reduced social support ('social capital') for the family (Sanson & Lewis 2001a). This has a particular impact on single-parent families, who rely more heavily on adult support external to the family. The child's direct social networks and peer relationships can also be restricted when the family is not supported. Children in single-parent families from conception are shown to have less positive developmental outcomes, regardless of the sexuality or the financial situation of the parent (Golombok et al 2003; Weinraub & Gringlas 1995). The major reason for the worse outcomes in these studies was lower levels of social support.

School experiences can be difficult, particularly for children with a more obvious point of difference, such as having a lesbian parent. Children have described being bullied about their family structure, and may elect to conceal the sexuality of their parents by not inviting friends home or not discussing their biological parent's partner (who is often also their parent) with friends (Ray & Gregory 2001). The school experiences of children of lesbian or gay parents will be discussed further in the lesbian families section. The usual impact on children is a sense that they must take care to avoid revealing their source of stigma. At worst this can lead to isolation and reduced self-esteem.

A further impact on children living within stigmatised or marginalised families is the lack of representation of their own family in the wider world. This starts with an almost complete lack of representation of alternative methods of conception within children's books about human reproduction (Moore 2003). Moore argues that such books serve to reinforce 'socially normative guidelines for gender display,

sexual orientation and citizenship' through failing to even allude to non-sexual methods of reproduction. Melbourne IVF has produced information for ART children regarding their conception, which is an excellent first step in this area.[8] In a study of parents and their donor-conceived children on whether families inform children of their donor status, a few parents had written books for their own children which included the child and their donor (Kirkman 2003a). These books reassure children of their own legitimacy, as well as helping parents to develop consistent language for describing their family.

Progressing through to preschool and school-aged children, again, there are few books or children's television programs that represent non-nuclear families. While children start out with a sense that their own family is 'normal' they soon understand that something is different when they do not see their own reality publicly displayed. This can then create difficulties for them when they talk about their family structure with peers. Changes are occurring, with some lesbian parents having published children's books in Australia.[9] The children's television classic *Play School* recently included a lesbian family for the first time, a simple representation through a child's eyes telling her story of being taken to an amusement park by her two mums.[10] This provoked outrage from family groups and government ministers about the fact that a public broadcaster is allegedly presenting a political agenda to preschool children. I am sure that, meanwhile, lesbian mums and their children around Australia were feeling just a little affirmed.

Impacts of Negative Social Attitudes on the Families of ART and on Society

The impact of negative social attitudes to ART and diverse families includes successful attempts to influence policy regarding access to ART services and other restrictions. A leading IVF specialist suggests that:

> [I]t should be unacceptable in a democratic society with a broad spectrum of views on the ethics of ART for one section to dictate its moral requirements to all and to

8 Bourne, K, *Sometimes it takes three to make a baby,* Melbourne IVF; *How I began: the story of donor insemination*, Melbourne IVF.

9 Harding, B & Harding, V 2002, *My House* and *Going to Fair Day*, Bulldog books, Sydney; Arc-Decker, T 2001, *Bedtime for Baby Teddy,* Rainbow Baby Books, Melbourne.

10 Houlihan, L 2004, 'Gay school for tots row', *The Herald Sun*, 3 June, p 2.

> crusade successfully for restrictive legislation that affects the whole community (Baker 2002, p 457).

Here, Baker is referring particularly to restrictions on embryo research. He argues that this research ultimately improves the safety of IVF procedures and therefore benefits society through reducing the cost and improving the successful outcomes of these procedures.

A further impact of denying access to ART services to lesbian and single women is the potential for these women to proceed with insemination of known donor's semen privately. This in itself is not harmful if appropriate medical and legal advice is obtained and the donor is screened for transmissible infections. A Victorian study showed that the majority of women using self-insemination had accessed such services (McNair et al 2002b). However, restrictions can lead to fear and avoidance of services or inability to find assistance. This could lead to infection of the mother and child with potentially major health consequences for both.

Economic Status and Single Parents

Economic status is another social factor that is closely linked with child outcomes, as it is for health outcomes in the community as a whole (Krieger et al 1993). The direct effects of insufficient financial resources on children include poor nutrition, crowded housing, inadequate access to health care, lack of cognitive stimulation at home (toys etc), and access to under-resourced schools (Wise 2003). These resource issues create cognitive disadvantages. Poverty also impacts on the parent's mental health, creating low self-esteem and social isolation, and anger and hostility, all of which affect the children's emotional and behavioural development (Ram & Hou 2003).

Single parents are most at risk of having reduced economic status, because they have to juggle earning time and child caring responsibilities. Children in the 18% of single-parent families identified by the AIHW were found to be at higher risk for poor physical and mental health (Australian Institute of Health and Welfare 2002). This was due to reduced socioeconomic status and increased stress of parenting without effective adult support. Several studies have identified that controlling for socioeconomic status removes the majority of negative cognitive, social and emotional factors in single-parent families (Golombok et al 1997). Golombok argues that having identified the underlying issue, it must be highlighted further to enable social policy initiatives to effect change.

Conversely, a number of the diverse families who access ART and surrogacy or are single parents from conception (single parents by choice) are economically well

resourced (MacCallum et al 2003; McNair 2002a; McNair et al 2002b; Patterson 1995b). The long period of planning that these parents describe includes time to ensure economic stability and adequate social support for their family.

The Impact of Technology

There are almost 5000 children born in Australia each year who have been conceived using ART techniques. This accounts for 1.7% of all live births in Australia in 1999 (Hurst & Lancaster 2001). Since the first IVF birth in 1978, ethicists, sociologists, child development specialists and particularly the reproductive scientists and parents involved, have expressed concerns regarding the possible impact of the technology on the children. For the purposes of this section, the types of ART referred to are those techniques that enable fertilisation of the embryo in the laboratory, rather than techniques that assist natural conception, such as DI. Considerable public comment in the media has fuelled these concerns, which have led to sensationalised headlines and accounts of the latest evidence for 'damage' to children.[11]

While community concern may be partly based in the underlying stigma and fear associated with novel technologies, scientific and parental concern is meaningful and must be addressed. Surprisingly few studies have actually followed children longitudinally or even attempted cross-sectional exploration of the children's development and experiences, particularly once they reach school age (Koivurova et al 2003). In this section, I will raise a broad range of issues, starting with the impact that the use of technology has on the family and parents. Then, I will discuss rates of peri-natal mortality for children of IVF and ICSI compared with naturally conceived children. Finally, I will examine patterns of morbidity of IVF/ICSI children, which are related to the effects of multiple pregnancy, prematurity and birth defects.

PARENTAL ISSUES

Infertility itself and ART procedures are stressful for prospective parents. The period of preparation for a child can extend over many years, with women describing putting life on hold as well as 'the need to juggle a future based on hope and alternative futures in case the hope is not fulfilled' (Kirkman 2002a, p

11 For example Rowbotham 2003, 'Test-tube time bomb?' *West Australian Weekend Extra*, 8 February, p 3.

62). Many parents describe the roller-coaster of emotional highs and lows that accompany ART treatments, the absolute relief once a viable pregnancy is finally achieved and the devastation if it is not (Tomlins 2002). Support groups have emerged in recognition of these stresses and all ART services in Australia provide counsellors who can support parents during the process. It has been postulated that such highly prized children might be over-protected by their parents and that this could impact on child development (Fasouliotis & Schenker 1999). The European longitudinal study has, however, proven the opposite (Golombok et al 1996; Golombok et al 2002). Children of IVF and DI were compared with adoptive and naturally conceived children. The parents were not shown to be over-protective, but rather had increased emotional involvement with their children. There were no differences in child social development and overall the study indicated that a strong desire to parent was beneficial to children's wellbeing.

A further concern has been that the stress of long periods of ART treatment can reduce the quality of the parental relationship, increase parental disharmony and increase the likelihood of separations. Comparative studies show no difference in divorce/separation rates of parents using ART with other parents (Golombok et al 2002).

Parental Age

ART procedures are accessed by disproportionately higher numbers of older couples, as advanced maternal age is a common reason for reduced fertility. In Australia, an increasing number of women are deferring pregnancy, with 10.2% of mothers having their first baby after 34 years of age in 2000 (Australian Institute of Health and Welfare 2001). The age of the parents is felt to be a possible influence on child outcomes. This is both a social and a physical concern. The social concerns are that a large age gap between parents and child will affect parenting style and child psychological development, and that older parents will be less able to cope with the demands of parenting. Neither of these has been found to be the case (Campion 1995). It is also suggested that a shorter life expectancy of older parents will prevent them raising their child to maturity. This is very unlikely with the current life expectancy in Australia. Conversely, it can be equally held that older parents are more financially secure, have developed better life skills and this may partly explain the high level of parenting skill shown by ART parents. From the child's perspective, in the words of a 13-year-old child of IVF surrogacy, 'I enjoy being the indulged only-child of older parents'(Kirkman & Kirkman 2002b).

Of greater concern is the real effect of maternal age on the physical outcomes of pregnancy. In 2000, the average age of ART mothers when they gave birth was 33.6 years, compared with average age of all mothers giving birth of 29 years (Dean & Sullivan 2003). Advanced age is known to increase the risk of chromosomal abnormalities that can lead to increased miscarriage rates and conditions such as Trisomy 21 (Down syndrome) in children (O'Connor & Kovacs 2003). Standard IVF procedures will not prevent these occurring, and will increase the number of older women successfully achieving pregnancy. Many women now elect to have tests during pregnancy (chorion villus sampling or amniocentesis) to determine the presence of chromosomal abnormalities. They then face the prospect of mid-trimester termination if an abnormality is found or the difficult decision to proceed regardless of the test outcome. Recent advances in pre-implantation genetic testing can identify affected embryos and reduce the chance of their transfer (this will be discussed later). Finally, advanced maternal age itself increases the risk of prematurity and low birth weight, both of which can lead to significant health problems for the child (O'Connor & Kovacs 2003).

PERINATAL MORTALITY

Perinatal mortality is defined as any stillbirth of a child of at least 20 weeks gestation[12] and neonatal death of any child up to 28 days following birth. In Australia in 2000, the perinatal mortality rate for children of IVF is 20.7 per 1000 births, compared with 8.3 per 1000 births in the general population, that is about 2 ½ times higher (Dean & Sullivan 2003). Outcomes for all ART pregnancies and births between 1979 and 2000 are given in Table 2. The mortality rate is mostly due to multiple pregnancy and pre-term delivery, although a small proportion is due to severe birth defects.

12 Gestation is during pregnancy. The normal term or length for pregnancy is 40 weeks.

*TABLE 2 OUTCOMES FROM PREGNANCIES CONCEIVED USING IVF AND ICSI**

Comparison of 8,793 ICSI and 22,319 IVF pregnancy outcomes	**ICSI**	**IVF**	****All Pregnancies**
Multiple births (>20weeks)			
Total	19.8%	19.9%	1.6%
Twins	18.5%	17.9%	
Triplet and quadruplets	1.4%	2.0%	
Pre-term birth (20–36 weeks)			
Total	22.9%	23.3%	7.9%
Singleton	11.5%	13.9%	
Low birth weight (<2.5kg)			
Total	26.8%	27.0%	6.8%
Singleton	10.4%	11.4%	
Perinatal mortality (<28 days)			
Total	2.81%	3.23%	0.83%
Singleton	1.67%	2.26%	
Major congenital malformations (live, stillborn, abortions>16 weeks)	2.65%	2.42%	1.74%

*From the Australian Institute of Health and Welfare National Perinatal Statistics Unit and Fertility Society of Australia database on assisted conception in Australia and New Zealand to 1999 and 2000 (Hurst & Lancaster 2001). All treatments are reported from all ART centres in Australia and New Zealand since 1979. Thanks to Gordon Baker for the preparation of the ICSI and IVF sections of this table.

**Comparative statistics taken from AIHW report for the year 2000 (Australian Institute for Health and Welfare 2001).

MULTIPLE PREGNANCY AND PRE-TERM DELIVERY

Multiple pregnancy is the carriage of more than one child during pregnancy and is the most important factor contributing to adverse child outcomes from ART. The current population-based rate of multiple pregnancy is 1.6%, some identical (from a single egg) and some non-identical (from different eggs). In 2000, the rate of multiple births after IVF in Australia was 22% (Dean & Sullivan 2003; Melbourne IVF 2003) The overall rate since 1979 is shown in Table 2. ART can increase the rate of multiple pregnancies for two reasons:

- Fertility enhancing drugs can increase the number of follicles that mature and release an egg per cycle. These drugs include clomiphene (commonly used for women with irregular cycles) and gonadotrophins. Both of these drugs can be used in conjunction with DI or sexual intercourse and lead to an increased number of non-identical multiple pregnancies.

- The transfer of more than one embryo to the uterus following IVF or ICSI is common, and results in multiple pregnancy if more than one embryo implants successfully.

A review of international studies found that multiple pregnancies occurred in 6–8% of clomiphene cycles, 15–53% of gonadotrophin cycles, and 24–30% of IVF cycles (Fasouliotis & Schenker 1999).

There are many risks for the children of multiple pregnancies, including effects of pregnancy complications, prematurity and low birth weight, all of which increase infant morbidity. Neonatal outcomes include respiratory distress, the need for intensive monitoring and support, difficulties feeding and an increased risk of infection. In Australia, 63% of twins and 96% of triplets from IVF are delivered pre-term (Melbourne IVF 2003). The impact on the child is most serious during the postnatal period, however, it has not been clear whether negative consequences persist during later childhood. Several small studies indicate that the longer-term growth and development of IVF children is no different (Australian IVF Collaborative Group 1985). A study in Finland compared 299 IVF children with 558 matched naturally conceived children (Koivurova et al 2003). The infant mortality for IVF children was two-fold higher than the Finnish national rate. IVF children's growth rate was less than the other children at one and two years old, although it was approaching the other children by three years old. IVF children also had higher rates of respiratory and diarrhoea illnesses, which continued up to three years of age. These differences were related to the ongoing effects of prematurity. Other larger studies have suggested a higher rate of longer-term neurological problems, especially cerebral palsy, again thought to relate mostly, but perhaps not entirely to multiple pregnancy and prematurity (Stromberg & al 2002).

Pre-Term Delivery and Low Birth Weight Independent of Multiple Pregnancy

The Finnish authors compared twin and singleton[13] pregnancies and found that most of the differences in IVF children were related to multiple pregnancy (Koivurova et al 2003). However, the singleton IVF children still had higher rates of prematurity and low birth weight. In Australia this is also the case, with 14% of singleton IVF pregnancies delivering prematurely, compared with 8% of the general population. Causes of prematurity include increased maternal age and the

13 A singleton pregnancy is one in which there is just one child.

larger number of first time pregnancies. Pre-term delivery may also be connected to the underlying cause for the infertility (Melbourne IVF 2003). This is supported by a large Danish study of 55 906 births from the national birth cohort, in which pregnancy outcomes were compared according to the amount of time to achieve pregnancy, regardless of method (Basso & Baird 2003). For children of couples attempting to conceive for more than one year (indicating reduced fertility), the risk of being born at less than 34 weeks (significant prematurity) was 50% higher.

Reducing the Chance of Multiple Pregnancy

In response to the negative health impacts on childhood of multiple pregnancy and pre-term delivery, there has been a worldwide movement within IVF clinics to reduce the number of embryos transferred per cycle. This has been supported by improved techniques in embryo preparation prior to transfer that improve the likelihood of a successful pregnancy and therefore reduce the need to transfer multiple embryos. The Australian Reproductive Technology Accreditation Committee is revising its guidelines to recommend that clinics transfer only one embryo in women younger than 36 and no more than two in women over 36 (Bradley 2004). At Melbourne IVF only one embryo is now transferred in almost 40% of women (McBain 2004).

Birth Defects and Genetic Disorders

In Australia, the overall rates of major birth defects (such as hole in the heart, cerebral palsy, or chromosomal abnormalities such as Down syndrome) are 2–3%, and rates of minor defects (such as cleft palate, dislocated hip, club foot) are 2–3% (in any single year these statistics can vary, for example in 2000 the overall rate of major defects was 1.7%: Table 2).[14] The causes of birth defects include genetic and chromosomal abnormalities, and maternal conditions such as rubella, smoking, diabetes, very poor nutrition and drug or alcohol intake. There is no known cause for up to 60% of defects.

Can the technology itself increase the risk of birth defects, or does it reduce the risk? This is still a disputed area with conflicting results in different studies. A fact

14 Royal Australian and New Zealand College of Obstetricians and Gynaecologists 2004, *Why aren't all babies perfect. A guide for parents*, Mi-tec Medical Publishing.

sheet produced by the American Society of Reproductive Medicine states emphatically that:

> There is not an increased risk of birth defects in children conceived through IVF.[15] Initially there were suggestions that some abnormalities, particularly heart defects, neural tube defects and brain tumors may have been more frequent after IVF, but with greater numbers of babies this is no longer statistically significant. This seems to be confirmed by current Australian data that show that 2.6% of children and foetuses resulting from IVF had a major congenital malformation, which is no different to the general population rate, although appears to have been higher for the comparative year reported in Table 2.

The evidence that I present below indicates that the situation is not as clear-cut. A Belgian assessment of almost 6000 IVF and ICSI pregnancies between 1991 and 2000 found that 4.2% of ICSI and 4.6% of IVF children had a major malformation (including stillborn, terminations and live births) (Devroey & Van Steirteghem 2004). This was not compared with the general population rate, however, it did indicate that there was no difference between the two ART methods. However, a Western Australian study of IVF births between 1993 and 1997 showed that 8% of children had birth defects including club feet, dislocated hips, cleft palate and heart defects, which was double the state average (Hansen et al 2002). This study has been criticised for combining major and minor birth defects and also not controlling the maternal age, which was considerably higher among the IVF mothers and may have accounted for some of the differences.

In response to the criticisms of their study, the Western Australian team conducted a review of 26 studies comparing birth defects in children following ART with those of naturally conceived children (Kurinczuk et al 2004). They found that only 30% of the studies showed statistically significant increases in ART birth defects, however, most of the other studies did not have sufficient power (number of participants) to detect changes. Analysis of odds ratios within the studies (which may detect more subtle trends) showed 70% had odds ratios of 1.2 or more and 52% of 1.5 or more.[16] Their conclusion was that there is a suggestion of increased risk of birth defects, which cannot be ignored. The reason for the apparent increase in birth defects is unknown. Two theoretical possibilities are that the ovulation-stimulating drugs could mature inappropriate eggs, and that

15 American Society for Reproductive Medicine 1996, 'Risks of IVF'.

16 Odds ratios over 1.0 very roughly translate to increased risk, eg an odds ratio of 1.5 means that there is approximately one-and-a-half times the risk.

the culture medium for the embryo prior to transfer to the uterus may alter the gene function and lead to new chromosomal abnormalities.

INTRA-CYTOPLASMIC SPERM INJECTION

The newer technique of intra-cytoplasmic sperm injection (ICSI), used since 1992, involves the injection of a single sperm into an egg, and has become a successful ART method, particularly for male-factor infertility. It is now becoming a first-line method for the treatment of any infertility, with more than 50% of all Australian ART children conceived in this way. The large Belgian study discussed above and others show that overall rates of birth defects after ICSI are much the same as for IVF (Devroey & Van Steirteghem 2004). In Australia, the rate of major abnormalities in children from ICSI is 2.5%, no different to IVF or general population children (Melbourne IVF 2003).

There are two areas of concern, however: the potential for children to inherit genetic abnormalities related to the underlying male infertility, and the increased likelihood of other specific rare genetic disorders following ICSI. One possibility is that the child could inherit the same propensity for infertility as their parent. More significantly, genetic abnormalities that lead to infertility for many people can also cause birth defects. Some of these abnormalities are known, the most common of which is cystic fibrosis (CF), which has an incidence of about 1 in 2500. This not only causes male infertility, but also causes severe lung and gastrointestinal problems and a reduced life expectancy. Men who carry only one abnormal CF gene are unaffected by CF but can have absence of the vas deferens (ducts from the testes). If that man's sperm is used via ICSI to create a pregnancy, and the partner also carries the gene, the child has a 1 in 4 chance of having CF. This can now be prevented if the CF status of both parents is known, so that affected embryos can be detected through the use of pre-implantation genetic diagnosis (PGD), which will be discussed below. However, the concern is that other, as yet unknown, causes of infertility may also lead to inheritance of genetic abnormalities, an area in need of further study (Niemitz & Feinberg 2004).

Some rare genetic disorders appear to be more common in ICSI children. Specifically, the Beckwith-Wiederman Syndrome is found to be about six times more common in ICSI children (Maher et al 2003). This syndrome increases the risk of childhood abdominal cancers, including Wilms tumour (of the kidney) and hepatoblastoma (a liver tumour). This is rare, found in only 1 in 15 000 births overall, so a large number of ICSI births would need to be studied before enough children with the condition occur in order to confirm this trend. There are also

indications that retinoblastoma (a rare childhood cancer of the eye) may be more common in ICSI children (Devroey & Van Steirteghem 2004).

PRE-IMPLANTATION GENETIC DIAGNOSIS (PGD)

PGD is a technique in which one or two cells are removed from the developing blastocyst (pre-embryo stage) at about three days of age or the eight-cell stage, before the embryo is transferred to the uterus of the mother. The cells are examined in two possible ways:

- Chromosome tests—these check for chromosomal abnormalities (aneuploidy) on chromosomes 13, 16, 18, 21 and 22. Such abnormalities are known to lead to early and sometimes recurrent miscarriage, and are more likely in older women.
- Single gene tests—these check for specific genetic abnormalities such as cystic fibrosis, thalassemia and Duchenne muscular dystrophy. They are currently only done when the parents know they are carriers of the genes (Wilton 2004).

Having examined the cells of each embryo, embryos that do not have the tested abnormalities can then be selected for transfer to the mother. Therefore, this is an area of technology that reduces risk to the child, both by reducing early death (through miscarriage) and reducing risk of certain inherited genetic disorders. Further, it improves pregnancy rates and therefore encourages the implantation of just one embryo. There are certain ethical dilemmas encountered with PGD. It can mean there are no embryos suitable to implant in certain IVF cycles (27% of cycles in one study), diagnosis may not be possible, and rarely the tested embryo may not survive (Allan et al 2004). Beyond ethics, PGD has not avoided controversy, with questions remaining about whether removal of the cell could lead to developmental effects on the child (Hunter 2004).

CHILD DEVELOPMENTAL OUTCOMES

The comparison of development between ART children and naturally conceived children has already been outlined. Overall, their development is not different. Comparisons have also been made between various types of ART. These are limited, having only included preschool children to date. Some studies involving children up to the age of two have indicated that ICSI children are more likely to be developmentally delayed compared to IVF children. An Australian study of children at one and then five years of age has explored this further (Leslie et al 2003). This involved 97 ICSI, 80 IVF and 110 naturally conceived children and used a number of child developmental measures including vocabulary,

comprehension, arithmetic and visual skills. At one year of age, ICSI was a significant risk factor for developmental delay, with 17% of ICSI children showing delay, mostly due to prematurity. This had disappeared by five years of age with only 5% showing delay.

SUMMARY OF THE IMPACT OF TECHNOLOGY

For the majority of children conceived using IVF or ICSI, their longer-term outcomes are no different to those of naturally conceived children. This applies to cognitive development, and the social environment in which they are raised, which may contain advantages. There are significant risks that impact on child outcomes, however, that relate to higher rates of prematurity, including higher perinatal mortality and ill health in early childhood. Multiple pregnancy accounts for a considerable proportion of the premature births and moves are in place to reduce multiplicity by reducing the number of embryos transferred. Rare birth defects appear to be slightly more likely, particularly after ICSI, however, this remains disputed. PGD is emerging as a method of reducing the risk of some known abnormalities.

Disclosure of Donor Identity—the Effects of Knowledge and Secrecy on Children

BIOLOGICAL VERSUS NON-BIOLOGICAL PARENTING

I will start with a brief description of biological and non-biological parenting and their relationship to identity formation for children. This discussion is informed initially by identity as it relates to adoptive children. Dominant Western social understanding is that biological or blood relationship forms the basis of kinship (Grotevant et al 2000). Adoption and the use of donated gametes have been regarded by some as less satisfactory methods of becoming parents, largely as a result of this belief. Yet, non-biological parenting (assigned kinship) has existed for millennia as a successful and meaningful addition or replacement for biological parenting (Cherlin 1999). There are calls for a move away from the predominance of blood relations in defining family and parenthood in recognition of the diversity of family forms (Wakeling 1995). Fuscaldo argues that the genetic, gestational and nurturing (non-biological) parenting roles create difficulty in determining who the 'real' parents are (Fuscaldo 2003). She goes on to suggest that neither social convention, nor a child's welfare argument (with conflicting claims regarding child outcomes) can resolve competing claims. She concludes that we should 'relinquish the view that genetic, gestational and social parenthood are competing positions. We could align the social facts with an acceptance…that a child can have many different parents' (p 66).

THE CHILD'S IDENTITY AND OUTCOMES—LEARNING FROM THE ADOPTION EXPERIENCE

How do the competing values of biological and non-biological parenting affect the child? In Australia, about 0.5% of births involve donor gametes or embryos (Baker 2002), that is about one-third of ART conceptions. The majority of children grow up with two parents, so that these children have at least one non-biological parent. The adoption experience reveals to us that regardless of the strength of connection with their non-biological parents, many children base at least some of their identity formation on knowledge of the identity of their biological parents. There are two separate issues that may interfere with identity development: being told

about being adopted late, and not being able to discover the identity of the biological parents. Adoptive children who are not told early in life about being adopted are more likely to develop behavioural and emotional problems (MacCallum et al 2003). Adoptive children are found to have an interest in their biological origins from around puberty, and this is when they can develop increased emotional and behavioural problems if not told (Golombok 2000). This largely arises because non-disclosure does not prevent children from noticing a range of clues as to their adoptive status, including lack of physical resemblance to their parents.

Some adoptive children experience significant grief and loss at not being able to discover the identity of their biological parents, resulting in a less complete identity development (Grotevant et al 2000). This was originally termed 'genealogical bewilderment' by Sants in 1964. Some describe not being able to talk about their origins nor their adoptive status as a result of the stigma of adoption and say that this impacts on their self-esteem. Other adoptive children, who cannot or do not want to know their biological parents' identities, have no negative outcomes.

A policy of universal secrecy existed from the early 1900s, to protect adoptive children from the stigma of having been illegitimate (Grotevant et al 2000). This included the practice of matching the child as closely as possible to characteristics of the adoptive parents so that he or she could 'pass' as their biological child. Social changes during the 1960s and 1970s, such as the women's rights and consumer rights movements, led many biological mothers and adoptive children to seek each other out. Calls from adoptive adults, in addition to a growing realisation of the negative psycho-social consequences of secrecy, led to the encouragement of openness from an early age. Social change in the adoption movement has progressed even further with the development of 'open' adoption, which encourages birth mothers to have some role in the selection of the adoptive parents and to maintain contact with their child. Advocates of this approach find that it helps adoptive children to have a more fully formed identity. However, others suggest that openness can lead to confusion for children if there are conflicting parental values and could create identity conflict (Grotevant et al 2000). Although the debate continues, open adoption is now a key element of public adoption policy.

DONOR-CONCEIVED PEOPLE AND THE TRADITION OF SECRECY

It has been suggested that it is not ideal to draw comparisons between adoptive and donor-conceived children as the contexts for the two groups of children are

very different (Shenfield 2002). Unlike adoptive children, donor-conceived people have not been subject to family breakdown or being 'given away' sometime after birth. Therefore, it has been assumed that they are less likely to require knowledge of their donor in order to form their identity. However, Kirkman reminds us that donor-conceived people still exist within a culture that 'valorises genes', and that they 'may feel cheated of their heritage and suffer a crisis of identity' (Kirkman 2003a, p 2231). As will be explained below, adoptive and donor-conceived people share very similar identity issues related to the possibility of needing to know their genetic background. A further point of connection is that the ART arena has inherited the tradition of donor anonymity and as a result, very similar stories are emerging from donor-conceived people concerning their need to know in the face of secrecy (Donor Conception Support Group 1997). In short, the ART field has much to learn from the adoption story.

The conflict between the rights of the parents to privacy and the rights of the child to knowledge is said to be one of the most disputed ethical issues in ART (Fasouliotis & Schenker 1999). Secrecy has been advocated within the ART field since it began and non-disclosure remains the policy in many countries, to the extent that some countries including Denmark, Norway, Spain and France have legislated to ensure secrecy of donor identity (Turner & Coyle 2000). Arguments supporting secrecy largely revolve around protection of the privacy of the non-biological father regarding his infertility. Others have claimed that disclosure to the child would damage the child's identity and relationships with her or his family, although the opposite has been found to be the case (Daniels & Burn 1997). Pressures that maintain such policies include the fear that donors would not donate if they could be traced by offspring (Murray & Golombok 2000).

DISCLOSURE LEVELS AND PARENTAL REASONS FOR SECRECY

The tradition of secrecy embedded into ART policy has been upheld by many parents of donor-conceived children. In a review of 23 studies involving donor families conducted between 1980 and 1995, the proportion of families that intended to tell their children was between 1% and 20% (Brewaeys 1996). The reasons for secrecy given by the DI parents in the European longitudinal study were most commonly to protect the child (concern that they would be distressed), and concern that telling would negatively influence the child's relationship with the non-biological father (Golombok et al 2002). Parents also wanted to prevent people outside the family knowing, and several believed there was no need to disclose to their children. The same reasons for not telling the child were provided in a Victorian study of 134 donor conception families conceiving between 1976 and 1996, however, almost half of the parents had told or intended to tell (Blood

et al 2001). By contrast, another predominantly Australian sample of donor families showed that a majority of parents would like to tell their children, but were constrained by not knowing how or when to do so (Kirkman 2003a). The author recommends improved and ongoing counselling for parents to facilitate disclosure.

Policy regarding donor identity release does influence parents' decisions, although only marginally. For example, in Sweden, where children have had the right to receive identifying information about their donor since 1985, of 132 parents using DI, 11% had told and 42% intended to tell their children (average child age in the study was seven) (Gottlieb, Lalos & Lindblad 2000). Parents of children born before 1985 were less likely to have told (6%) than those after 1985 (18%). The Victorian study discussed above showed much higher levels of planned disclosure overall (54%), with an increase in plans to disclose after the 1988 introduction of the donor registry (67% after 1988 compared with 38% before) (Blood et al 2001). Plans to disclose to children, however, do not always eventuate.

There are striking differences in the degree of disclosure between different family types and conception methods. In the European longitudinal study, by 12 years of age, 8.6% of DI children, 50% of IVF and 95% of adoptive children had been told, and more single mothers intend to disclose (Golombok et al 2002). There are certain groups of donor families that stand apart from the majority in their high degree of openness about donor origin. Several studies have shown that over 95% of lesbian families using DI for conception have told, or intend to tell their children, usually at preschool age (Brewaeys et al 1997; Gartrell et al 1996; Jacob, Klock & Maier 1999). Parents of children born of surrogacy are also more open, with one study showing that 100% planned to tell their children before the age of five (MacCallum et al 2003). These families are therefore behaving very much as current adoptive families do with regard to disclosure.

CONSEQUENCES FOR DONOR-CONCEIVED PEOPLE

In the following discussion I present various negative consequences of being a donor-conceived person. Some of these relate to the fact of having a donor father (or mother) and most relate to the impact of delayed discovery of donor status. I do not mean to suggest that these consequences apply to all donor-conceived people—they certainly do not. However, I submit that the extent of consequences that exist for some offspring is enough to challenge the ongoing practice of secrecy. While not all donor-conceived people will want to know their donor's identity, the possibility of knowing it if desired should be guaranteed. A landmark study interviewing 16 donor-conceived adults (Turner & Coyle 2000) explored

these issues, and similar issues are reflected by an Australian support group (Donor Conception Support Group 1997), and in a study involving 12 donor-conceived adults (Kirkman 2004). There are a number of outcomes, including challenges to identity, impact on family relationships and psychological consequences such as grief and isolation upon discovery of donor status, which closely match concerns voiced by some adoptive people. Difficulty locating genetic information for health purposes is also important.

IDENTITY

Some donor-conceived people describe feeling that their conception was impersonal, and that their donor is a deliberate stranger who has chosen to avoid a parenting responsibility. Feeling like a 'freak' or the 'product of an experiment' is described. Others feel incomplete or that they don't completely belong. These sentiments suggest that identity is related to genetic inheritance in some way. Kirkman found that genes were significant to many donor-conceived adults and that they had a 'severe disruption and fractured sense of identity' as a result of not being able to know (Kirkman 2004, p 15). Such identity issues do not always lead to a search for the donor and there are many reasons for this. Some make a deliberate choice not to find their donor in order to avoid apparent rejection of their parents. Others fear rejection if they do contact their donor, and others are not interested. Those who do undertake a search find that this can be criticised by others.

FAMILY RELATIONSHIPS

Consequences of secrecy for some donor-conceived people include feeling that their parents had been dishonest, which can lead to mistrust and hostility towards their parents (Kirkman 2003a). Consequences of this can include reduced self-esteem and difficulty in forming trusting relationships. Some recall sensing that something was wrong or inconsistent during childhood, before they knew of their donor status, which again impacted on parent–child relationships. A woman who was the surrogate (gestational) mother for her sister's child suggests that children are confused when they are aware of secrets and imagine the worst scenarios (Kirkman & Kirkman 2002b). Some feel forced to collude in non-disclosure to others to 'protect' the family. Donor-conceived people describe their need to know whether they have half siblings. Longer-term consequences of being unable to know the identity of their donor involve concern that they could inadvertently form an intimate relationship with a sibling or other close relative.

WHAT DONOR-CONCEIVED PEOPLE WANT TO KNOW

A very moving article appeared in the *British Medical Journal* in 2002, written anonymously by a female doctor who was a child of donor insemination (British Medical Journal 2002). She was told of her anonymous donor parentage at 11 years of age, and recalls feeling initially excited, but later angry, guilty, bereft and deprived of part of her genetic history. This is despite feelings of gratitude and love for her parents, confirming that a need to know genetic heritage can coexist with good relationships with parents (Kirkman 2004). She raises the potential to cause more damage if children are told only a certain amount, resulting in 'knowing yet not knowing', however, concludes that for her any information would be better than none.

Parents who do want to reveal their child's donor status struggle with how, when and what to tell. Yet, Grotevant suggests that children themselves influence the extent of disclosure as well as the level of contact attempted with donors (Grotevant et al 2000). First, it is clear that not all donor-conceived people are interested in knowing anything about the donor. In a Belgian study, 54% (22) of DI children preferred donor anonymity and 46% (19) wanted to know more about him (Vanfraussen et al 2001). These children all had lesbian mothers, were aged 7 to 17 years (mean age 9), all had anonymous donors and all had been told of their donor status when they were toddlers. Of the 19 children wanting to know more, 11 wanted to know about the donor's identity and various personal traits, and the other 8 wanted only non-identifying information (such as physical characteristics or medical information). These desires may change as the children become adults.

While the children in the Belgian study knew that they had no opportunity of identifying their donor, a Swedish study involved adolescents who knew that they were able to obtain their donor's identity from 18 years of age (Scheib, Riordan & Rubin 2003). They were overwhelmingly curious about their donor. Most commonly, they were interested to know what he was like as a person, whether their appearance was similar to his and whether they would be able to meet him. All but one adolescent wanted a photograph. Therefore, knowing the donor as a person was important to these children. However, while they reported that the donor could be important in their lives, none regarded him as a father.

Shenfield was a strong advocate in the United Kingdom for the need to protect the privacy of the parents and for their autonomy to decide whether to inform their children (Shenfield & Steele 1997). However, she has shifted her position considerably towards the child's right to know, crediting this to hearing the stories

of donor-conceived people (Shenfield 2002). Since then, the United Kingdom has changed policy to prospectively allow any donor-conceived person to seek information about their donor from the age of 18 (Hall 2004). In 1988, Victoria led the way in establishing a donor registry, enabling release of the donor's identity to the child on request from the age of 18, but only if the donor consented to the release of that information. The law has now been amended so that any child born as a result of a donor treatment procedure since 1998 will automatically be able to access identifying information about the donor when they turn 18. Before a child turns 18, his or her parents can apply for identifying information about the donor, which can be provided with his consent.

It seems clear the identity-release policy addresses some of the needs of the children. However, some children express a need to know more than the identity of their donor, particularly as they enter adulthood. More concerning is the large proportion of parents who are still not telling their children, perhaps unaware of the possible negative consequences that this could trigger when donor status is subsequently discovered. As Kirkman observes, it is 'paradoxical' that so many donor-conceived people do not know at least half of their genetic heritage when awareness of the importance of genes in health is increasing (Kirkman 2004). Parents need more information and assistance regarding why, when and how to inform their children of their donor status. Perhaps, most importantly, they need to understand that it is preferable to be honest with their children. This will lead to effective parent–child relationships, alongside knowledge of genetic heritage, and the potential for a future relationship with the donor if desired by child and donor.

Child Outcomes in Surrogacy

Surrogacy is another of the highly controversial areas of assisted reproduction, and generates polarised views in our society. This is evidenced in Australia by the extensive and ongoing media comment that accompanied the birth of Alice Kirkman, Australia's first child of gestational surrogacy, in 1988 (Kirkman & Kirkman 2002b). Moral arguments feature prominently, and there is no general agreement on its 'moral permissibility' (Gillam 2002). Issues in question include whether it is ethical for a woman to carry a pregnancy, with its potential for harm and little benefit to herself; how important gestational parenting is to the child (actually being carried during pregnancy by their mother); whether the surrogate mother or recipient parents will change their mind during the pregnancy; and whether commercial surrogacy is acceptable when dealing with a human life. I will not cover the moral discussion here, but will focus on what is known about the children's outcomes. This is the area of ART with the least empirical data to draw on (MacCallum et al 2003). Very little at all is known about the children's outcomes, particularly as there are very few children of ART-assisted surrogacy who have reached adulthood.

There are several forms of surrogacy, which fall into two categories:

1. Genetic (partial) surrogacy

The surrogate mother is biologically related to the child. The surrogate mother's egg and father's sperm is used, with donor insemination being the usual method of conception. This may be in situations where the non-biological mother does not have viable eggs, or cannot carry a pregnancy. It can also be used by men who want to parent and are not in a relationship with a woman.

2. Gestational (full or host) surrogacy

The surrogate mother is not biologically related to the child.

(a) Where no donor gamete is used

The parent's sperm and egg are used to create an embryo, which is implanted into the surrogate mother. This is used in situations where the non-biological mother is unable to carry a pregnancy.

(b) Where a donor egg is used (potentially with donated sperm)

A third woman's egg (neither the non-biological mother's nor the surrogate mother's) is donated and fertilised with the father's sperm, or donated sperm. This is often a choice to avoid creating a biological relationship with the surrogate mother, when the mother has no viable eggs. It is also a method used by men without a female partner.

(c) Where donated sperm is used

The mother's egg is fertilised with donated sperm (therefore the social mother is also the genetic mother). This is used where the mother cannot carry a pregnancy. It could be where the male partner is infertile, or the female partner of the genetic mother chooses to be the gestational mother.

FAMILY EXPERIENCES OF SURROGACY

Small studies have shown that the children of surrogacy arrangements are psycho-socially well adjusted, however, these studies to date have involved only preschool aged children (MacCallum et al 2003). We must rely then on the experiences and plans of the parents as a proxy for predicting child outcomes. MacCallum did a study in the United Kingdom involving 42 heterosexual families using surrogacy, interviewing the parents separately when their children were less than one year old (ibid). She found that these parents had a high socioeconomic status, and over three-quarters were in professional or managerial occupations. Many couples (43%) had turned to surrogacy after many unsuccessful IVF attempts, 38% of mothers had no uterus, and the rest had had multiple miscarriages, or were told pregnancy would be life threatening. Sixty two per cent used partial surrogacy and 38% used full, and one used a different oocyte donor. Most babies had been handed over to the parents within one day of the birth.

MacCallum explored the parents' relationship with the surrogate mother. Sixty-nine per cent of surrogate mothers were strangers to the couple before the arrangements and 31% were known; 14% were a sister/sister-in-law, 3% another family member and 14% were friends of the commissioning couple. All known surrogates were to continue to have a role with the child (such as aunt, family friend, godmother); and 76% of the previously unknown surrogates were to have a future role with the child. Many of the social mothers had formed a bond with the surrogate mother through attending antenatal visits with her, and two-thirds had maintained regular contact since the birth. Parents stated that they planned to maintain contact as they felt the child would benefit. There was minimal conflict between commissioning parents and the surrogate mothers, with only one mother and one surrogate mother expressing slight doubts during the handover period.

Ten per cent of parents expressed some dissatisfaction with the surrogate mother. Importantly, 93% of mothers and 97% of fathers would recommend surrogacy to other couples. Clearly then, lack of conflict and plans for ongoing contact with the surrogate are two important markers for child wellbeing which are well represented among these families.

A further marker of positive child outcomes is the degree of openness regarding surrogacy. All mothers and fathers planned to tell the child, at a mean age of three years for mothers and five years for fathers. All couples had already told both sets of grandparents, and only 7% had received a negative reaction. Finally, the quality of the relationship of the non-biological mother with her child was found to be no different to that of the related mother, indicating that the lack of genetic link did not affect her identity as a mother.

Regarding the oocyte donor's perspective, donating women do consider the child's welfare in their willingness to release their identity (Kirkman 2003). Compared with donating oocytes, donating embryos strengthens the donor's feeling of maternal connection to the child.

The child's perspective is needed in relation to surrogacy, including exploration of the psycho-social development and family relationships as they grow up. MacCallum's study is longitudinal and so will provide some of these answers over time. In the meantime, we must extrapolate from the findings of ART studies indicating that family functioning and child development are equal or better than comparative 'natural' and adoptive families, regardless of genetic relatedness to parents.

Outcomes for Children With Lesbian and Gay Parents

There is a large body of literature that has examined the family functioning, social relationships and outcomes for children growing up in lesbian families. There is much less work available relating to families with gay male parents, and almost none to families with single parents by choice, therefore my analysis for these families will be limited. Where possible, I will refer to Australian research in the area, to enable our local context to be taken into account. Some of this research is not yet published.

In Australia, the Australian Medical Association supports lesbian and gay parenting (Australian Medical Association 2002). Lesbian and gay parenting has also been recently endorsed as appropriate by the American Academy of Pediatrics through recommendations to enable co-parent adoption within same-sex families (American Academy of Pediatrics, 2002). This position was reached after a review of the literature, which showed that children fared just as well as those in heterosexual families (Perrin et al 2002). The American Academy's position was not shared by some members, who formed a new group called the American College of Pediatricians in 2002. This group has released a position statement on homosexual parenting, which states that it is potentially hazardous for children to grow up in lesbian or gay families based on a range of homosexual lifestyle risks (American College of Pediatricians 2002). Listed risks include violence among same-sex partners, unstable relationships, promiscuity, increased risk of mental illness and suicide. None of these factors has been found to be increased among lesbian mothers, as will be discussed below. The College has other conservative positions including a preference, where possible, for children who are adopted being 'placed into the optimal family structure of loving, stable, married, mother–father unit' (American College of Pediatricians 2002).

The lesbian and gay families literature has been subject to criticism about the methodology used (Lerner & Nagai 2001; Wardle 1997). Jacqueline Prichard, a Tasmanian psychologist, has also suggested that as a result of the flawed status of most of the existing research, there is insufficient evidence to draw conclusions or to be the basis of policy (Arndt 2003). I will discuss these criticisms and make a

case that the literature provides us with ample evidence, although I will also highlight some gaps that are yet to be addressed.

I will then summarise the literature from the three levels influencing child outcomes; the children themselves, family functioning and the wider social environment.

METHODOLOGY

There are some methodological challenges in this area of research. These particularly relate to researching a population that is stigmatised. Stigma makes sampling difficult as many individuals are hard to reach unless they are connected to lesbian or gay support and community groups, and these members may not represent the wider subgroup. They may regard the research with suspicion, particularly the purpose for which the research is being gathered, and therefore be less willing to participate. Fear about confidentiality is a major barrier to involvement, as many of the potential participants may not be open about their sexuality at work, with family or in the wider community. These challenges in sampling apply to other marginalised groups, and there are recognised and appropriate methods to overcome these barriers, including purposive sampling techniques such as snowballing (Lee 1993; Plumb 2001). Stigma also affects the researcher, in that funding and publication can be much more difficult to obtain in areas that are seen to be controversial.

A failure to take account of the influence of sexuality in health and wellbeing also creates a major barrier to the inclusion of sexuality questions in population-based studies, leading to the necessity for community-based or clinically-based samples, and reducing the generality of findings. Lesbian and gay families have rarely been specifically included in general family studies and have not yet appeared in any of the Australian Institute of Health and Welfare family reports. This is changing, with increasing recognition that minority sexuality status should be recognised as a contributor to health inequalities (McNair, Anderson & Mitchell 2001). For example, in Australia, the longitudinal women's health study first included sexuality questions in their 2000 survey (Hillier et al 2003), and the census included the opportunity to nominate a cohabiting same-sex relationship from 1996. The federally funded Australian Institute of Family Studies commenced its first study including lesbian and gay families in 2002 (Wise 2003).

QUALITY OF STUDIES

Lerner and Nagai produced a report for the Marriage Law Project in the USA in 2001, evaluating 49 studies on same-sex parenting conducted between the 1970s and 1990s, and concluded that each study had at least one 'fatal research flaw' (Lerner & Nagai 2001). The 'major problems' they identified were:

- unclear or missing hypotheses or research designs;
- missing or inadequate comparison groups;
- self-constructed or unreliable measurements;
- non-random samples, including participants who recruit other participants;
- small sample size; and
- missing or inadequate statistical analysis.

Some of their criticisms are appropriate, and I will outline these and others below. However, there are a number of issues that are not taken into account. First, the progressive maturity of studies in this area has not been noted, with many of the studies from the 1990s being much more rigorous, particularly as researchers were able to achieve greater support and legitimacy for their studies. For example, the majority of later studies used validated measures of child development. Twenty-six of the 49 studies reviewed by Lerner and Nagai were published before 1990, some from the 1970s and early 1980s. The review was undertaken from a positivist framework, with assumptions that only quantitative methodology is valid, even listing the use of qualitative methods (regardless of quality) as a flaw in itself. None of the studies was said to have an adequate sample size. This is a definite limitation in quantitative methods, particularly when there are less than 25 per study group. While smaller non-random samples used in qualitative studies cannot be generalised, they can identify important issues for the subgroup. This is particularly the case for descriptive and exploratory studies that set out, for example, to establish patterns of parenting style rather than to compare these styles with the wider population. The research question dictates whether the study requires a control group, and this is not a flaw in itself.

By contrast, two systematic reviews of outcomes for children in lesbian and gay families have been conducted that used similar standardised and validated criteria to evaluate the methodological strength (still restricted to quantitative, comparative studies) and identified 23 and 8 studies respectively (Anderssen, Amilie & Ytteroy 2002; Hunfeld, Fauser & Passchier 2002). All studies reviewed were found to be methodologically rigorous, and both reviews found that the children in lesbian families fared at least as well as those in heterosexual families

on all measures. Both found that there were insufficient studies involving gay men and single parents to be conclusive. A range of methodologically sound studies is presented in Table 3.

METHODOLOGICAL CHALLENGES

I have identified several ongoing methodological challenges.

SELECTION BIAS IN SAMPLING

The consistency of findings of positive outcomes for children across so many of the lesbian parent studies could be partly because samples are drawn from volunteer groups of lesbian mothers, who may not be representative of all lesbian mothers. Many of the studies have recruited predominantly Anglo-Saxon, middle class parents, and it is clear that studies are needed to sample a wider range of people (Demo & Allen 1996). It has been highlighted that volunteer mothers whose children are experiencing problems are less likely to take part (Golombok et al 1997). Exceptions are small studies that have recruited consecutive patients of DI services (Brewaeys et al 1997; Chan, Raboy & Patterson 1998).

Golombok and her team have addressed this issue in a recent study, by recruiting families from a population of 14 000 families in the Avon region of the United Kingdom (Golombok et al 2003). This study compared 39 lesbian families (19 coupled, 20 single) with 74 two-parent and 60 single-parent heterosexual families. The sample is population based, which minimised criticisms of selection bias. This study included a wide range of measures, all of which were standardised and validated:

Parental measures:

- parent–child relationships;
- children's socio-emotional development—mother's perspective; and
- parents' psychological state, including a scale for stress associated with parenting, and anxiety scale, and a depression scale.

Child measures:

- child perceived competence and social acceptance measures;
- gender role behaviour observation; and
- independent report from children's teachers on psycho-social development.

This study has confirmed the earlier positive findings for lesbian-parented families on all measures, indicating that reservations regarding representativeness might be laid to rest.

Comparative Versus Exploratory Studies

Many of the earlier lesbian family studies were designed to prove that children are not disadvantaged compared with their peers in heterosexual families. Many of these studies have been criticised for taking the view that heterosexual parenting is the standard (Stacey & Biblarz 2001). These studies have repeatedly shown no difference in outcomes for the children, despite different methodological approaches. As a result of this observation, Anderssen et al make the following recommendation from their systematic review:

> Due to the unambiguous results in the studies reviewed, we believe that large epidemiological studies with more fine-tuned instruments and tests are less needed than in-depth and process-orientated methods (2002, p 349).

More recent studies, including several current Australian studies, have elected to do just this, using qualitative methods to explore the experiences of these families in more depth. All of these studies will expand our understanding of the reality for these families. The Victorian researchers using qualitative methods include:

- Brown: interviews with whole lesbian families (including their children) to understand the perspective of the non-birth mother.
- Dempsey: interviews of lesbian and gay parents/prospective parents about kinship.
- Irenyi: interviews with lesbian mothers, exploring the meanings of mothering in the lesbian community.
- Perlesz, de Vaus, Lindsay, McNair and Pitts: interviews with whole lesbian families including their children to explore the public versus private worlds.
- Short: interviews with lesbian mothers exploring family experiences of mothers and children.

Bias in Reporting

It is possible that participants in lesbian and gay family studies tend to focus on positives and do not report negative consequences for their children. This again relates to the effect of stigma and 'the desire (by parents) to portray an overly positive picture' (Tasker & Golombok 1995, p 213). MacCallum has also suggested that surrogate commissioning parents may do the same (MacCallum et

al 2003). Vanfraussen suspected that the DI children in her study tended not to admit an interest in knowing their donor due to loyalty to their mothers (Vanfraussen et al 2001). This emphasises the importance of the inclusion of external observers of behaviour and psychological outcomes for children, although this has occurred in few studies to date (eg the systematic review by Anderssen et al 2002 found that only 2 of the 23 studies included an external observer). Stacey and Biblarz also showed that some researchers tend not to report differences (either positive or negative) between children in lesbian and heterosexual families in an effort to prove that children are 'no different' (Stacey & Biblarz 2001). However, Golombok criticises this analysis, warning against reporting differences that have very minimal impact on child development (Golombok et al 2003).

Lack of Longitudinal Data

There are few longitudinal studies that follow children's progress through adolescence to adulthood. Tasker and Golombok revisited 25 of their original 1976 sample of 37 children of post-divorce lesbian families (Golombok, Spencer & Rutter 1983) when they were adults in 1991 (Tasker & Golombok 1995). The National Lesbian Family Study in USA is following 84 lesbian families (all used donor insemination), and has just interviewed the children at age 10 (Gartrell et al 2003 unpublished). These studies provide some insight into the impact on children of growing up in lesbian families as they progress through various developmental stages.

Gaps in the Current Literature

Some subgroups within lesbian families are rarely represented, including separated lesbian families, and ethnically and culturally diverse families. Several of the following groups are also not well represented including: the children themselves, gay male-parented families, the non-birth mother in lesbian families, and single mothers by choice.

Children's Perspective

Older children and adults who have grown up in lesbian and gay families from conception have rarely been studied to date. There are a few studies that have interviewed the child or adult offspring mostly from divorced lesbian mothers. These include Tasker and Golombok mentioned above (1995), Green et al who interviewed 56 children of lesbians and 48 children of heterosexual mothers (1986), Saffron who interviewed 20 offspring aged 11–66 years (1996), and Vanfraussen who was one of the first to interview DI children aged 7 to 17, mean

age 10 (2001). In Australia, Ray and Gregory conducted a questionnaire study of 48 children of lesbian and gay parents aged 5 to 18 (2001), and Perlesz et al have conducted whole lesbian families interviews with 20 families, all but one of which allowed their children ranging from preschool to adult to participate (Perlesz et al unpublished). Sarantakos interviewed 58 primary-school aged children of lesbian (47) and gay (11) families, based in New South Wales (1996).

GAY MALE FAMILIES

Most gay men who are involved in parenting (apart from those who had children within previous heterosexual relationships) do so with lesbian couples, and tend to accept a role that is more akin to an uncle or family friend (McNair et al 2002b). It seems anecdotally that more gay men are now looking to have a primary parenting role, however, there are still very few in this position in Australia.

SINGLE MOTHERS BY CHOICE USING DONOR INSEMINATION

These women are rarely included, or only appear in very small numbers. Golombok included this group in her population-based study, and also included a single heterosexual control group (Golombok et al 2003). The total study included 39 lesbian mothers, 20 of whom were single, and she compared these with 74 two-parent heterosexual families and 60 families with single heterosexual mothers. Single lesbian and heterosexual mothers reported more negative relationships with their children than coupled mothers. Overall, the children in lesbian families had the same level of teacher-reported psychological problems as those in heterosexual families, however, children in single-parent families had higher levels, regardless of sexuality. Reasons for these differences for single parented families were not clear, however, reduced social support is one possibility.

LESBIAN FAMILIES

The following review of the literature will focus on outcomes for children who were conceived within lesbian families (I have termed these families 'de novo lesbian families') rather than children who were conceived in heterosexual families (most are step or blended families). I have used a number of reviews of this literature, all of which are comparative between lesbian and heterosexual families:

- Anderssen et al 2002: 23 studies from 1978 to 2000, 20 are lesbian and three are gay families, systematic review.
- Hunfield et al 2001: eight studies from 1978 to 2000, systematic review.
- Allen and Burrell 1996: 18 studies, meta-analysis.

- Stacey and Biblarz 2001: 21 studies from 1981 to 1998, 18 lesbian and three gay families, only with heterosexual comparison group.
- Millbank 2003: both quantitative and qualitative studies, including an Australian focus.

Key papers from these reviews are summarised in Table 3 which appears as Appendix 1 to this paper.

CHILD FACTORS

DONOR KNOWLEDGE AND CONCEPT

De novo lesbian families are almost universally open with their children from an early age regarding their children's method of conception. This has been discussed more fully in the section above.

GENDER IDENTITY AND BEHAVIOUR

It has been suggested that parents do not play a significant role in gender identity and role development, but that wider society is the major influence, and possibly biological influences play a part (Campion 1995). None of the adult offspring of lesbian families is reported to have gender identity problems. Most of the lesbian studies have found no difference in gender role behaviour, in that children tended to play gender-typical games and activities. Stacey and Biblarz's review did find subtle differences in gender development, with some male and female children of lesbian parents showing less traditionally ascribed traits (2001). Sarantakos also showed that the male primary school children of lesbian and gay families that he studied in NSW also tended to be more 'effeminate' (1996). In using this somewhat pejorative language, he suggests that this is a negative trait. By contrast, Stacey and Biblarz imply an advantage in that 'lesbian parenting may free daughters and sons from a broad but uneven range of traditional gender prescriptions' (2001, p 168).

COGNITIVE FUNCTION

No differences were found in school performance or on formal IQ testing in the systematically reviewed studies (including Flaks 1995 and Kirkpatrick 1981). Sarantakos, however, found that the children of gay and lesbian parents in his study performed less well at school than those from heterosexual families (1996). He attributes the difference to experiences of anti-gay prejudice. This is the only study that I have found that shows this difference. Golombok showed that

children in father-absent families perceived themselves to be less competent cognitively and physically than children in heterosexual two-parent families (children aged 3–9) (Golombok et al 1997). The actual ability was not measured in this study. The presence of a father may positively influence the child's self-esteem through male behaviour that tends to be reinforced through role modelling of competence.

Emotional Function

The emotional function of children was no different in any of the reviews, either as children or adults. In particular, the adult offspring in some studies were tested using validated measures for stress, anxiety and depression, and no differences were found. This is reassuring given the concern that lesbian parents themselves may be more at risk of depression and anxiety due to marginalisation, which might have influenced their child's mental health.

Psychological Development and Behaviour

Psychological development and behaviour patterns are mostly the same as those of children in heterosexual families. This was demonstrated in the reviewed studies using a range of measures, including parental report and teacher report using validated behaviour checklists. Some studies show higher self-esteem and psychological resources among children in lesbian and gay families (Stacey & Biblarz 2001).

Sexual Orientation

A true assessment of sexual orientation can only really occur in late adolescence and adulthood. The few studies that include these age groups indicate the prevalence of minority sexual orientations to be the same for offspring of lesbian and non-lesbian families. Tasker and Golombok showed that the adults were more likely to consider the possibility of not being heterosexual, and more had had same-sex behaviour. However, they were no more likely to identify as lesbian or gay (Tasker & Golombok 1995).

Family Factors

Quality of Mother–Child Relationship

Most studies have shown that lesbian mothers are just as nurturing and confident as heterosexual mothers. A few studies have shown that lesbian mothers show more warmth towards their child and have more interactions with their child than heterosexual mothers (Golombok et al 1997; Vanfraussen, Ponjaert-Kristoffersen

& Brewaeys 2003). This may relate to the method of conception, in that parents using ART in general show more warmth toward their child. Compared with heterosexual couples, lesbian couples consider the decision about donor insemination for longer (Jacob et al 1999), and many researchers have highlighted the positive influence of choice and planning in lesbian family formation (Perlesz & McNair in press; Weeks, Heaphy & Donovan 2001).

The child's gender does seem to lead to differences in the parent–child interactions (Vanfraussen et al 2003). Lesbian parents rated their emotional connection and degree of warmth with girls more highly than boys, and the female children did the same. Female children tended to identify more strongly with female parents. The second female parent present may accentuate this link, while boys develop a separate identity.

The Role of the Non-Birth Mother

The vast majority of partners of the birth mother in a lesbian relationship take on a parenting role with their child (McNair & Dempsey 2003). While her role is often ignored within studies, Vanfraussen had a particular interest in the 'social' mother, and found that despite not being biologically linked to the child, she took equal responsibility (Vanfraussen et al 2003). Several studies have shown that the quality of the relationship between the non-birth mother and child was better than that between the father and child when comparing DI families (Brewaeys et al 1997; Dunne 1998; Tasker & Golombok 1998). Sarantakos suggests that the children in lesbian families will have role confusion in 'having to accept the father as a she' (1996). However, it is clear that non-birth mothers do not regard themselves as filling a father role, and certainly that they identify as women (Lamb 1999). This does highlight, however, that the non-birth mother faces challenges about feeling out of place, being ignored and not being acknowledged as a 'real' mother (Tasker & Golombok 1997). This uncertainty could negatively impact on their child. For example, a lack of legal recognition of the non-birth mother can lead to loss of contact if the lesbian parents separate or a loss of inheritance rights if the non-birth mother dies without leaving a will.

The Mothers' Psychological Health

Lesbian women are found to be at greater risk of depression and anxiety, which is largely related to experiences of discrimination and abuse (Jorm et al 2002). This study did not distinguish between women who were parents or not. As discussed earlier, it is known that parental mental health problems can have a negative influence on their children's mental health. The fact that the emotional state of

children of lesbian mothers is shown to be equivalent to that of children in heterosexual families would suggest that their mothers do not have higher levels of mental illness. A study of consecutive attendees at a donor insemination clinic, who were all still prospective parents at the time of the study, showed that the lesbian women were no different to the heterosexual or single women on measures of self-esteem or depression (Jacob et al 1999). Golombok's population-based study directly measured mental health factors and showed no difference between lesbian, single or coupled heterosexual mothers in levels of parenting stress, anxiety or depression (Golombok et al 2003). There was also no difference in the proportion taking medications for anxiety or depression since the birth. The only difference was a higher proportion of lesbian and single mothers who had had medical consultations for psychological issues since the birth (55% coupled lesbian mothers, 43% single mothers and 23% coupled heterosexual mothers). The reason for this difference is unclear. Overall, it would seem that lesbian mothers do not show the higher risk of mental health problems exhibited by the broader lesbian community.

THE PARENTAL RELATIONSHIP AND STYLE

One of the key strengths noted by lesbian parents is the prevalence of supportive and egalitarian co-parenting and positive couple relationships (Dunne 2000). Dunne showed that two mothers take on the full range of parenting roles needed by their children, and do so in a flexible way. Patterson (1995b) showed that co-mothers share parenting tasks more equally than fathers in heterosexual families, and 75% of co-mothers in the US longitudinal lesbian families study considered they were equal co-parents (Gartrell et al 1999; Patterson 1995a). Shared and consistent parenting positively affects child outcomes. Lesbian parents show less gender stereotyping towards their children in the approval of games and dress (Green et al 1986). Lesbian couples accessing donor insemination are shown to have greater cohesion within their relationship than heterosexual couples (Jacob et al 1999), and Golombok's population study showed no differences in relationship satisfaction between the lesbian and heterosexual couples (Golombok et al 2003).

THE ROLE OF BIOLOGICAL FATHER/DONOR

There are two issues for the children of lesbian families in relation to biological fathers and donors. The first is the impact of the absence of a biological father and the second is what children understand about their donor father. First, as already demonstrated, children can and do thrive in families where the biological father is absent as a parent from the beginning. In most de novo lesbian parented families, the biological father does not have a primary parenting role. The majority of

lesbian parents choose this situation, as they desire their children to be parented solely within their own relationship (Donovan 2000). They do so either by using sperm through a clinic, or finding a man to be a known donor 'who will not want to disrupt their central basis of the family' (Donovan, p 153). Dempsey has highlighted the difference between parenthood and fatherhood as described by lesbian parents, in that the donor is often regarded as a father in the biological sense but not a parent in the social sense (2004).

Fatherhood advocates argue for the 'essential importance of fatherhood' and suggest that the absence of fathers in children's lives is at the root of various social problems, including child poverty, teenage pregnancy and poor school performance (Blankenhorn 1995). The studies from which these conclusions arise are about separated heterosexual families, with associated conflict, economic disadvantage and at times violence. This means they cannot be applied to lesbian families. Much of the argument revolves around assumptions that parenting roles are strongly gendered, mothers being nurturing, fathers being the disciplinarian and providing for families economically. Yet, parents of either gender have the same capacity for nurturing, division of labour and for achieving an authoritative style that creates positive child outcomes (Silverstein & Auerbach 1999).

The second issue is the meaning that the children apply to their donor father and the level of knowledge and contact that they desire. These children are not different to any donor child in that some will want to know his identity and others will not. They are in a much more positive position than that of many donor-conceived children in heterosexual families, however, in that most are told about their conception from an early age. The child's gender may play a role in the amount children want to know. Vanfraussen demonstrated that the majority of the boys in her study wanted to get to know their donor, while less than half of the girls identified this need (Vanfraussen et al 2001). Lesbian parents are increasingly recognising their children's potential need to know their father and to have a social relationship with him (Saffron 1996). The Victorian parenting study indicated that lesbian parents are more likely to choose known sperm donors over anonymous donors in order to enable such a relationship for their children (McNair et al 2002b). Defining the child's biological father as a 'donor' did not mean he was anonymous or unknown to the children. Forty per cent of donors were known to the parents and children and actively involved with the children in some way. Eighteen per cent of donors were known to the parents and children but not involved with them, and eight per cent known to the lesbian parents only. Importantly, the level of satisfaction with all of these arrangements was rated as high.

The challenge for lesbian parents is to strike a balance between their own need for integrity of their family unit, and the child's need to know their biological father (Donovan 2000). This becomes more challenging when a negotiated agreement between the mothers and father cannot be reached or a position changes. At the most extreme level this can result in the need to seek legal solutions. The recent *Re Patrick* case highlighted the invidious position of the judge in determining what was in the best interests of the child, and the need for legal support and guidance for parents throughout the process (Dempsey 2004). Many lesbian couples will continue to elect to use an unknown donor regardless of legal support or otherwise. The positive outcomes for children show that this remains a legitimate choice assuming the families have access to identity-release sperm and retain the high level of honesty with their children.

Contact with Grandparents and Other Adult Kinship Networks

Lesbian parents are shown to encourage supportive adult relationships with their children, deliberately including men (Allen 1997; McNair et al 2002b). Many lesbian families retain good contacts with grandparents and other family relatives (Laird 1998; Patterson, Hurt & Mason 1998). The USA national longitudinal study showed that most grandparents were involved and that 63% of them were open with others regarding their grandchildren's family structure (Gartrell et al 2000). However, this does indicate that some grandparents are not involved or not comfortable about their child's lesbian identity. This may have negative influences on the child through reduced contact with a grandparent. A study comparing 55 lesbian parent families with 25 heterosexual families all conceived by DI showed that most children had regular contact with grandparents (Fulcher et al 2002). However, they had more regular contact with the parents of their biological parent than their non-biological parent, regardless of sexuality. This reflects a finding in Kirkman's study of donor-conception families, in which some grandparents found it difficult to accept the non-genetically linked grandchild as their own (2004).

Societal Factors

Peer and Adult Relationships

Systematic reviews have found that children of lesbian families form effective peer relationships (Patterson 1992). Adolescent children can initially find it very difficult to be open about their mother/s' sexuality, but as they get older they are more likely to 'come out' about their family to their peers (Van Voorhis & McClain 1997). The Victorian lesbian parenting study asked parents to rate the

quality of their children's peer relationships (self-report only) (McNair et al 2002b). These findings suggest that children's peers, school and the broader community, and their extended family are generally accepting of a lesbian-headed family background, and that lesbian parenting does not have negative effects on children's relationships with peers and extended family members. Some studies show that children are perceived by parents and teachers to be more affectionate and sociable with peers and adults than their heterosexual peers (Patterson 1996).

Stigmatisation and School Experiences

One of the major areas of concern for lesbian parents is the degree to which their child will be identified as 'different' by their peers (Mercier & Harold 2003). Children are also concerned they will be ostracised by peers due to their parents' sexuality (Patterson 2000). On the more superficial level of research, it appears that these fears are not grounded. The systematic review by Anderssen concluded that in general children were not more stigmatised than other children (Anderssen et al 2002). Recollection of childhood experiences by adult offspring of lesbian mothers indicated that the young adults reported close friendships during adolescence, although they did recall being concerned about presenting their family background to peers (Tasker & Golombok 1995). Despite this, 'they were no more likely to remember general peer group hostility than the comparison group of young people from heterosexual single-parent families' (Golombok & Tasker 1994, p 1973).

However, research that seeks to specifically address homophobic bullying shows that most of the children do experience bullying at school about their parents' sexuality. In one USA study, even at the age of 6, 18% of children reported homophobic attitudes of peers and teachers (Gartrell et al 2000). A study of 48 Victorian children with gay fathers or lesbian mothers demonstrated different levels of bullying according to the child's developmental age (Ray & Gregory 2001). At early primary school, 90% of children were open about their family structure, and reported positive experiences. During grades 3 to 6, 39% had told only one person or no one about their family. Just under half (44%) of the grade 3–6 children had experienced teasing, bullying and homophobic language. In years 7–10, 36% had not disclosed to others and 45% had been bullied. By late adolescence, only 14% kept their parents' sexuality secret. Having a lesbian mother had become a positively distinguishing, 'cool' feature for the child. These experiences are borne out in interviews with children of lesbian mothers and their parents in Victoria, during which early adolescents repeatedly discussed the care they were obliged to exercise when deciding whether to reveal their parent's

sexuality to peers (Perlesz et al unpublished). It was clear from this study, however, that these children were able to develop close, albeit carefully selected, peer relationships.

Ray has outlined a range of methods that are used by lesbian and gay families to overcome a homophobic environment for their children (2003):

- emphasising children's pride in their family and feeling special;
- discussing each family member's level of comfort about being 'out';
- being sensitive to the changing needs of the child as they develop;
- advocating on behalf of their children to improve the inclusion of diversity at preschools and schools;
- participating in lesbian and gay parenting support groups so that children can meet others from similar families; and
- actively connecting with the lesbian and gay parenting community through participation in Pride marches and conferences.

The Impact of Stigmatisation and Bullying

Despite the significant level of bullying, children in lesbian and gay families develop effective peer relationships. It is also surprising that these children have the same levels of emotional functioning as other children and appear to be in some way resisting the common negative mental health consequences of being bullied and discriminated against. One possible explanation for this level of resilience is that the bullying is not directly about the children's own identity, but rather about their parents' identity. While this is true to some extent, many children say they are bullied because it is assumed that they too are lesbian or gay. A more global explanation is that lesbian and gay parents are very effectively assisting their children to deal with bullying at school (Perlesz & McNair in press).

Understanding Diversity

Children in lesbian families are shown to understand diversity and accept a range of diverse family types and individuals (Patterson 1992). Lesbian parents identify that this is a specific goal of their parenting, and deliberately teach children to be tolerant (Lorde 1988). Teachers report that these children are more broad-minded, tolerant and empathic (Patterson 1996), and that boys are more sensitive to others (Brewaeys & Van Hall 1997). So, parents are not only providing children with life skills in coping with discrimination, but also a non-discriminatory view of the world more broadly.

GAY MALE FAMILIES

Gay men are parents in a number of settings. They may have children within a heterosexual relationship, then divorce and come out as gay. Most of these men do not live with their children. Others adopt (very rare in Australia) or foster children after coming out as gay. Some share primary parenting with single women (lesbian or heterosexual) or lesbian couples, having conceived usually by insemination. Children often share time living with both their mother(s) and their father(s) in this situation (Patterson & Chan 1997). Rarely, gay men are the primary parents of their biological child conceived with a surrogate mother. This is one of the only methods by which gay male couples can have full-time responsibility for their child.

I will focus on the outcomes for children who have gay fathers in a primary parenting role. I have used a review (Patterson & Chan 1997) of early studies involving men who were divorced (these studies were by Miller 1979, Bozett 1987, Bigner & Bozett 1990), as well as one study that was located that studied gay men who had children after identifying as gay (McPherson 1993). Silverstein and Auerbach have also done important work comparing gay fathers within a group of over 200 ethnically diverse fathers (1999). This area of study has not yet reached the sophistication that has been possible in the lesbian families literature in being able to discern meaningful differences for children in these families. It is likely that over time, similar subtle differences will emerge indicating that gay parenting is distinctive (yet not negative) for children.

CHILD FACTORS

Child emotional, psychological and behavioural development appears to be no different within gay-parented families. Bozett found that children were no different in social activities, problem solving ability or levels of autonomy than children in heterosexual families (Bozett 1987). Children's sexual identity has been one of the most common measures included in many of the studies, reflecting concerns that having gay fathers may influence children to be gay or lesbian, or confuse their sexual identities (the research question itself being reflective of prevailing homophobic attitudes). The range of sexual orientation appears to be no different to that for children in heterosexual families, and the amount of time spent with their gay fathers does not influence sexuality.

FAMILY FACTORS

Parenting roles of gay fathers appear to encompass the full range required by children (Silverstein & Auerbach 1999). Some studies based on self-report showed gay fathers identified themselves to be more nurturing than the level identified by heterosexual fathers (Bigner & Bozett 1990). They also had greater control and limit setting, and therefore were more likely than heterosexual fathers to show authoritative patterns of parenting, which benefit children. McPherson (1993) showed that gay male couples had more egalitarian division of roles and responsibilities than heterosexual couples, mirroring the lesbian parenting findings.

SOCIAL FACTORS

It is important to put these men into the context of fathering in Australia to highlight the absolutely revolutionary role they are playing in re-defining fatherhood. While there is a social movement suggesting that fathers should take a more active parenting role, only 1–2% of fathers in two-parent heterosexual families share physical care of their children equally with their partner, and only 5–10% are involved in day-to-day care (Flood 2003). Flood finds that despite the father's rights movement that has successfully worked to change child custody and child support policies, there has been no increase in shared parenting by separated fathers. By contrast, gay men in a primary parenting role are choosing to take on a considerable proportion, if not all, of the day-to-day care of their children. Despite the social pressures for greater involvement of fathers, gay men face negative social reactions to being parents. Gay men describe great difficulty in finding support even within the gay community (McNair in press). This is similar to the double-stigmatisation that characterises lesbian parents' experience. Two Melbourne-based gay fathers of an infant conceived with a surrogate mum related various negative reactions from gay friends. These ranged from accusations that they were trying to live a heterosexual lifestyle, to regarding the child as merely another accessory.[17]

Children's peer relationships are affected by these negative attitudes. Adult offspring of gay men described the need to hide their father's sexuality from peers. They expressed fear that knowledge of their father's sexuality may influence peers to assume that they themselves are gay or lesbian (Bozett 1987). I was unable to locate any studies that have yet included independent measures of child

17 2003, 'Fathers and son', *The Age*, 16 August, p 3.

socialisation, peer relationships or academic achievement to ascertain any direct effects of such experiences.

Conclusions

This Paper has examined outcomes for children in families that have used ART for conception. This is a complex range of families, many of which do not fit the two-parent nuclear family model. It includes heterosexual couples using their own gametes or donated sperm or eggs, lesbian couples using donated sperm, single parents by choice and, rarely, gay couples using surrogacy. I have chosen to focus on the impact of factors that are central to these families, including the impact on children of non-biological parenting from birth, the use of technology to assist conception, disclosure of donor status to the child and the impact of growing up within a same-sex family.

There is good evidence of equal or more positive outcomes for children with non-biological parents, same-sex parents and surrogate arrangements, both in child emotional, social and psychological development; and in parenting styles and family functioning. These positive findings are attenuated to some extent for some ART and donor-conceived children by the adverse impacts of the technology itself and by children's experience of non-disclosure of donor status. In considering the impact of these findings on policy decisions, it seems clear that ART can be offered to any family type, regardless of the sexuality of parents, or the need for donated gametes. Two caveats apply. The first is that prospective users of ART services are fully informed of the risks of the technology to their child, and of methods to minimise such risks including restricting multiple pregnancy where possible. The second caveat is that parents of donor-conceived children are provided with a full range of information regarding the potential desire of their child for information about their donor, and with information about methods of discussing donor status from an early age, and encouragement to do so.

The impact of social factors, including stigmatisation, on children within these diverse families is considerable. The failure of social policy, legislation, and public systems, including schools, to keep pace with the social changes that harbour these children is a source of concern. Lack of clarity and inclusiveness in definitions of family and parent can create vulnerability for parents and children, particularly if the non-biological parent is not recognised as a parent legally or socially. Inadequate representation of diverse families in the public arena increases the already stigmatised nature of ART, infertility, surrogacy, lesbian and gay families.

This extends into research with a reluctance to gather data that represent their reality. The more stigmatised these families are, the more likely it is that children will be bullied at school, and will fear disclosure of their family structure. This is not making a case to suggest these children should not have been born into such families, rather suggesting that society has a responsibility to respond to their needs and provide a nurturing social environment. 'Parenting occurs in a social context, and the community and the state can either facilitate or impede parents in their task of raising the next generation' (Sanson & Wise 2001b, p 45).

I do not present a picture of victimised children. Rather the reverse. These children appear to be remarkably resilient, negotiating the stigma by developing strong peer relationships through careful choice. They are not only aware of their own family diversity, but develop a rich understanding of diversity more broadly. This does not happen by accident. Having made a deliberate choice to have children, these parents are providing an effective and loving environment and equipping their children with skills that build resilience. They are also imbuing their children with the value of acceptance. In this way, parents and their children are positively contributing to our pluralist society. This is beautifully depicted by Audre Lorde, a mother who was also a writer, social activist, lesbian and black woman:

> "I believe that raising children is one way of participating in the future, in social change…Unless we develop some cohesive vision of that world in which we hope these children will participate, and some sense in the shaping of that world, we will only raise new performers in the master's sorry drama. If there is any lesson we must teach our children, it is that difference is a creative force for change. I trust my children deeply, because they were raised to be their own woman, their own man, in the service of all of our futures (Lorde 1988, p 48).

TABLE 3: OVERVIEW OF STUDIES OF CHILDREN RAISED BY LESBIAN OR GAY PARENTS[18]

Abbreviations: s = sons; d = daughters; fa = fathers; mo = mothers; het=heterosexual; mar = married; sep = separated; div = divorced; DI = donor insemination; trad = traditionally conceived.

Author & Year	Sample size (children)	Family structure	Age of children (yrs)	Control Groups & Number	Sample Source	Sample Type	Method	Findings
Bailey *et al* 1995	43 all sons	Gay fa (all earlier mar, 91% sep or div today)	17–43	None	Convenience	Cross-sectional	Mailed questionnaires	*Sexual preference:* 37 reported to have heterosexual preferences
Bozett, 1988	19 s and d	Gay fa (various histories)	14–35	None	Convenience	Cross-sectional	Unstructured in-depth interviews (grounded theory)	*Sexual preference*: 16 reported to have heterosexual preferences
Brewaeys *et al.* 1997	30 s and d	Lesbian couples (from birth - DI)	4–8	52 s and d of het couples (from birth) (26 donor & 26 trad)	Register samples (DI) & convenience	Cross-sectional	Questionnaires to parents: Child Behaviour Checklist, Preschool Activities Inventory	*Behavioural adjustment* No group differences for sons. Fewer problems among daughters of lesbian and het (non donor) couples *Gender role behaviour:* No differences
Chan *et al.* 1998	55 s and d	Lesbian couples (DI) and lesbian single mo (some earlier mar)	(mean age 7)	25 s and d of het couples (from birth) and het single mo (All DI)	Register sample (clients of California sperm bank)	Cross-sectional	Mailed standardized questionnaires to parents and teachers, including: Child Behaviour Checklist, Teacher's Report Form	*Emotional functioning*: No differences *Behavioural adjustment*: No differences
Flaks *et al.*, 1995	15 s and d	Lesbian couples (from birth) (DI)	3–8	15 s and d of het couples (from birth) (trad)	Convenience	Cross-sectional	Standardized questionnaires to parents and teachers, including: Child Behaviour Checklist, Teacher's Report Form	*Emotional functioning*: No differences *Behavioural adjustment*: No differences *Cognitive functioning*: No differences

Author & Year	Sample size (children)	Family structure	Age of children (yrs)	Control Groups & Number	Sample Source	Sample Type	Method	Findings
Gartrell *et al*, 1996, 1998, 2000[19]	85 s and d (1 twin) 21 had known donor	Lesbian couples-86, (all DI), by 3rd phase 31% had separated	3rd phase 5 years old	None	Convenience	Longitudinal	Interviews of mothers separately: health , parenting experiences, rel issues, support, educational choices, discrimination	*Child health/devt:*88% not concerned *Peer rels:* 87% relating well *Grandparent rels*: 63% open about lesb *Male contact:* all 21 with known donor had contact *Homophobic experiences of kids:* 18%
Gershon *et al.*, 1999	76 s and d	Lesbian mo (67% of mo in het marriage at time of birth)	11–18	None	Convenience	Cross-sectional	Standardized questionnaires (by interview), including: Self Perception Profile for Adolescents	*Emotional functioning*: As expected for general population
Golombok *et al.*, 1983[20]	37 s and d	Lesbian single and coupled (23/27 mo earlier mar)	5–17	38 s and d of het single mo (23/27 mo earlier mar)	Convenience	Cross-sectional	Structured interviews with mo and with offspring (separately); sexual preference assessment only for the older group; standardized quest to mo and teachers about offspring	*Emotional functioning*: More children with het mo had psychiatric symptoms *Sexual preference*: No differences *Stigmatization*: No differences *Gender role behaviour*: No differences *Behavioural adjustment*: No differences *Gender identity*: No differences
Golombok *et al.*, 1997	30 s and d	lesbian mo (from birth) (15 single at time of data collection	3–9	42 s and d of het single mo (single since child's first year of life)	Convenience	Cross-sectional	Structured interviews and questionnaires for mo; ratings from school teachers; testing of offspring, including adaptation of Separation Anxiety Test	*Emotional functioning*: No group differences *Stigmatization*: No group differences *Behavioural adjustment*: No group differences
Golombok *et al.*, 2003	20 s 19 d	Lesbian mo –39, 20 single, 19 couple	Mean age 7yrs	72 s & 62 d of 74 couples 60 singles	Population-based + snowball	Cross-sectional	Standardized questionnaires and interviews	*Parent-child rels:* No differences , co-parent lesbians more warm *Social/emot development:* No diffs *Psych rating:* No differences **Psychol. state of Mo: No difference**

Author & Year	Sample size (child-ren)	Family structure	Age of child-ren (yrs)	Control Groups & Number	Sample Source	Sample Type	Method	Findings
Gottman, 1990	35 d	lesbian div mo (cohab with another women at least some time)	18–44	70 d of het div mo (35 single, 35 remarried)	Not reported	Cross-sectional	Standardized questionnaires (returned by mail), including: California Psychological Inventory (18 scales)	*Emotional functioning*: No differences on 17 of 18 scales. On well-being scale d of div single mo had more problems *Sexual preference*: No differences *Gender role behaviour*: No differences *Gender identity*: No differences
Green *et al.*, 1986	56 s and d	Lesbian single and couples (10% never mar)	3–11	48 s and d of non lesbian, single mo (10% never mar)	Convenience	Cross-sectional	Standardized questionnaires to mo (returned by mail). Interviews with offspring and with mo (separately). Testing of offspring, including: self-reported and mother-reported peer popularity	*Emotional functioning*: No differences *Stigmatization*: No differences *Gender role behaviour*: No differences for boys, more girls of lesbian mo preferring some boy-typical activities, clothes and future adult roles *Gender identity*: No differences *Cognitive functioning*: No differences
Kirkpatrick *et al.*, 1981	20 s and d	Lesbian div mo	5–12	20 s and d of het div, single mo	Convenience	Cross-sectional	Semi-structured interview with offspring and with mo (separately). Observ. & testing of offspring incl: Play-room observation, Human Figure Drawing	*Emotional functioning*: No differences *Gender identity*: No differences *Cognitive functioning*: No differences
Lewis, 1980	21 s and d	lesbian non single mo	9–26	None	Convenience	Cross-sectional	In-depth interviews with children	*Stigmatization*: Children at all ages worried about potential reactions from peers, no report of specific incidents
McNair et al 2002	115 s and d	136 lesb mo 74% couple, 15% single 10% non cohab couple 22% prev mar	1-17	None	Convenience	Cross-sectional	Mail-back questionnaire: completed by one of Mo's 55 items: health and medical issues, parental relationships, social acceptance and support, open-ended q's	*Health:* high level of knowledge, low access to information for conception *Social acceptance:* high level acceptance, disclosure higher for parents than prospective parents, *Peer rels:* high level positive relationships

Author & Year	Sample size (child-ren)	Family structure	Age of child-ren (yrs)	Control Groups & Number	Sample Source	Sample Type	Method	Findings
Miller, 1979	14 s and d	gay fa	14-33	None	Convenience	Cross-sectional	In-depth Interviews	*Sexual Preference:* 2 of 14 reported to be lesbian/gay *Stigmatization:* No specific incidents reported
Patterson, 1994[21]	37 s and d	lesbian mo (26 couples, 7 singles, 4 in joint custody between two mo) (from birth)	4–9	None	Convenience	Cross-sectional	Standardized questionnaires for mo, including Child Behaviour Checklist, and for children, including Children's Self-View Questionnaire. open-ended interview of children	*Emotional functioning*: No differences No differences aggression, social closeness, but more stress reactions and higher well-being *Gender role behaviour*: No pattern *Behavioural adjustment*: No differences (All comparisons with general population)
Sarantakos, 1996	58 s and d	11 gay fa 47 lesb mo	6-11	58 married and 58 defacto het couples	Convenience	Cross-sectional	Child interviews, Teacher reports	*Educational achievement:* G&L children <defacto, married *Social development:* G&L perform less well. *Gender behav:* boys 'effeminate'
Tasker & Golombok 1997	25 s and d	lesbian mo (22/25 by lesbian couples)	17-35	21 s and d of het mo 19/21 by het couples, these mo no longer single)	Convenience	Longi-tudinal (14 years)	Semi-structured interviews. Standardized questionnaires, including: Trait Anxiety Inventory, Beck Depression Inventory	*Emotional functioning*: No differences *Sexual preference*: No differences, but more variation in lesbian mo kids *Stigmatization*: No differences, but a tendency for children with lesbian mo to have been teased more about own sexuality
Totals 18 studies	785[22]	Gay fa studies: 3; Gay fa and lesbian mo study: 1; Lesbian mo studies: 14	1–44	581 11 studies included control groups	Convenience or not reported-15; register sample-2; pop based - 1	Cross-Sectional - 16; longitud-inal- 2	Interviews: 11 Questionnaires: 11 Observation: 2 Teacher reports: 4	Emotional functioning: 11 studies Sexual preference: 6 studies Stigmatization: 8 studies Gender role behaviour: 7 studies Behavioural adjustment: 6 studies Cognitive functioning: 4 studies

19 USA lesbian parenting longitudinal study. The first 3 phases have been published, with planned interviews when children are 10, 17 and 25 years old, including child interviews

20 British Longitudinal Study of Lesbian Mother Families – this is the first data collected, see Tasker and Golombok 1997 for follow up study when children were adults.

21 Bay Area Families Study.

22 Not included Tasker and Golombok (1997) since this is a follow-up of Golombok *et al* (1983).

Bibliography

American Academy of Pediatrics 2002, 'Policy Statement: Coparent or second-parent adoption by same-sex parents', *Pediatrics,* vol 109, no 2, pp 339–340.

American College of Pediatricians 2002. *Homosexual parenting: is it time for change?* American College of Pediatricians, Tennessee.

Australian Bureau of Statistics 2002, *Births,* cat no 3301.1, ABS, Canberra.

Australian Institute of Health and Welfare 2001, *Australia's mothers and babies 2000,* cat no PER 21, AIHW Perinatal Statistics Unit, Sydney.

Australian Institute of Health and Welfare 2002, *Australia's Children: their health and wellbeing,* cat no PHE-36, AIHS, Canberra.

Allan, J, Edirisnghe, R, Anderson, J, Jemmott, R, Nandini, A, & Gattas, M (2004), 'Dilemmas encountered with preimplantation diagnosis of aneuploidy in human embryos', *Australian and New Zealand J of Obstetrics and Gynaecology*, vol 44, pp 117–123.

Allen, KR 1997, 'Lesbian and gay families', in T Arendell (ed), *Contemporary Parenting: Challenges and Issues,* Sage, New York, pp 196–218.

Australian Medical Association 2002, *Position Statement on Sexual and Gender Diversity 2002,* AMA.

Amato, P 1993, Children's adjustment to divorce: theories, hypotheses and empirical support. *J of Marriage and the Family,* vol 55, pp 23–38.

Anderssen, N, Amilie, C, & Ytteroy, EA 2002, 'Outcomes for children with lesbian or gay parents. A review of studies from 1978–2000', *Scandinavian Journal of Psychology,* vol 43, no 4, pp 335–351.

Arndt, B 2003, 'Adopting the parenting trap', *Sydney Morning Herald*, 7 May.

Australian IVF Collaborative Group 1985, 'High incidence of preterm births and early losses in pregnancy after IVF', *British Medical Journal,* vol 291, pp 1160–1163.

Baker, GH 2002, 'Problems with the regulation of assisted reproductive technology: a clinician's perspective', *J of Law and Medicine,* vol 9, no 4, pp 457–469.

Basso, O & Baird, D 2003, 'Infertility and preterm delivery, birthweight, and Caesarean section: a study within the Danish National Birth Cohort', *Human Reproduction,* vol 18, no 11, pp 2478–2484.

Bennett, B 2000, 'Reproductive technology, public policy and single motherhood', *Sydney Law Review,* vol 22, pp 625–635.

Bigner, J & Bozett, FW 1990, 'Parenting by gay fathers', In FW Bozett & M Sussman (eds), *Homosexuality and family relationships*, Harrington Park Press, New York, pp 155-176.

Blankenhorn, D 1995, *Fatherless America: confronting our most urgent social problem,* Basic Books, New York.

Blood, J, Pitt, P, Baker, G & Foster, P 2001, *Parents decision to inform children of their donor (sperm) conception and the impact of a register which legislates to enable identification of donors.* Paper presented at the 17th World Congress on Fertility and Sterility, Melbourne.

British Medical Journal 2002, 'How it feels to be a child of donor insemination', *British Medical Journal,* vol 324, p 797.

Boers, P 2004, *Same sex parenting,* paper presented at the Law Conference, College of Law, Sydney.

Bozett, FW (ed) 1987, *Gay and Lesbian Parents,* Praeger Publishers, New York.

Bradley, N 2004, 'Push to curb multiple IVF births', *The Age,* 8 March, p 8.

Brewaeys, A 1996, 'Donor insemination, the impact on family and child development', *J Psychosom Obstet Gynecol,* vol 17, pp 1–13.

Brewaeys, A, Ponjaert, I, Van Hall, EV & Golombok, S 1997, 'Donor insemination: child development and family functioning in lesbian mother families', *Human Reproduction,* vol 12, no 6, pp 1349–1359.

Brewaeys, A & Van Hall, EV 1997, 'Lesbian motherhood: the impact on child development and family functioning', *Journal of Psychosomatic Obstetrics & Gynecology,* vol 18, no 1, pp 1–16.

Campion, M 1995, *Who's fit to be a parent?* Routledge, London.

Cannold, L & Gillam, L 2002, 'Regulation, consultation and divergent community views: the case of access to ART by lesbian and single women', *J Law and Medicine,* vol 9, pp 498–510.

Chan, RW, Raboy, B & Patterson, CJ 1998, 'Psychosocial adjustment among children conceived via donor insemination by lesbian and heterosexual mothers', *Child Development,* vol 69, no 2, pp 443–457.

Cherlin, A 1999, Going to extremes: family structure, children's wellbeing and social science, *Demography,* vol 36, pp 421–428.

Clarke, V 2001, 'What about the children? Arguments against lesbian and gay parenting', *Women's Studies International Forum,* vol 24, no 5, pp 555–570.

Coady, M 2002, 'Families and future children: the role of rights and interests in determining ethical policy for regulating families', *Journal of Law and Medicine*, vol 9, pp 449–456.

Daniels, KR & Burn, I 1997, 'Access to assisted human reproduction services by minority groups', *Australian New Zealand Journal of Obstetrics Gynaecology,* vol 37, no 1, pp 79–85.

Dean, JH & Sullivan, EA 2003, *Assisted conception Australia and New Zealand 2000 and 2001,* cat no PER 22, AIHW National Perinatal Statistics Unit, Sydney.

Demo, D, & Allen, KR 1996, 'Diversity within lesbian and gay families: challenges and implications for family theory and research', *J Social and Personal Relations,* vol 13, pp 415–434.

Dempsey, D 2004, 'Donor, father or parent? Conceiving paternity in the Australian Family Court', *International Journal of Law, Policy and the Family,* vol 18, no 1, pp 76–102.

Devroey, P & Van Steirteghem, A 2004, 'A review of ten years experience of ICSI', *Human Reproduction,* vol 10, no 1, pp 19–28.

Donor Conception Support Group, A 1997, *Let the offspring speak: discussions on donor conception,* Georges Hall, Sydney.

Donovan, C 2000, 'Who needs a father? Negotiating biological fatherhood in British lesbian families using self-insemination', *Sexualities,* vol 3, no 2, pp 149–164.

Dunlop, R & Burns, A 1989, *Adolescents in divorce: a three year follow up,* Australian Institute of Family Studies, Melbourne.

Dunne, GA 2000, 'Opting into motherhood lesbians blurring the boundaries and transforming the meaning of parenthood and kinship', *Gender and Society,* vol 14, no 1, pp 11–35.

Dunne, GA (ed) 1998, *Living Difference: Lesbian Perspectives on Work and Family Life,* Harrington Park Press, New York.

Edwards, J 1998, 'Donor insemination and "public opinion"', In KR Daniels et al (ed), *Donor insemination. International social science perspectives,* Cambridge University Press, Cambridge.

Fasouliotis, S J & Schenker, JG 1999, 'Social aspects in assisted reproduction', *Human Reproduction Update,* vol 5, no 1, pp 26–39.

Flood, M 2003, *Fatherhood and fatherlessness*, Discussion Paper no 59, The Australia Institute, Canberra.

Freeman, M 2000, 'The future of children's rights', *Children and Society,* vol 14, pp 277–293.

Fulcher, M, Chan, RW, Raboy, B & Patterson, CJ 2002, 'Contact with grandparents among children conceived via donor insemination by lesbian and heterosexual mothers', *Parenting: Science and Practice,* vol 2, no 1, pp 61–76.

Fuscaldo, G 2003, 'What makes a parent? It's not black or white', *Journal of Medical Ethics,* vol 29, no 2, p 66.

Gartrell, N, Banks, A, Hamilton, J, Reed, N, Bishop, H & Rodas, C 1999, 'The national lesbian family study: 2. Interviews with mothers of toddlers', American *Journal of American Orthopsychiatric Association,* vol 69, no 3, pp 362–369.

Gartrell, N, Banks, A, Reed, N, Hamilton, J, Rodas, C & Deck, A 2000, 'The national lesbian family study: 3. Interviews with mothers of 5-year-olds', *American J of Orthopsychiatry,* vol 70, no 4, pp 542–548.

Gartrell, N, Hamilton, J, Banks, A, Mosbacher, D, Reed, N, Sparks, CH et al 1996, 'The national lesbian family study: 1 Interviews with prospective mothers', *American Journal of American Orthopsychiatric Association,* vol 66, no 2, pp 272–281.

Gillam, L 2002, *Surrogacy, autonomy and promising,* working paper no 2002/2, Centre for Applied Philosophy and Public Ethics, University of Melbourne, Melbourne.

Goffman, E 1963, *Stigma: notes on the management of the spoiled identity,* Prentice Hall, New Jersey.

Golombok, S 2000, *Parenting: What Really Counts?* Routledge, London.

Golombok, S, Brewaeys, A, Cook, R, Giavazzi, M, Guerra, D, Mantovani, A et al 1996, 'The European study of assisted reproduction families', *Human Reproduction*, vol 11, pp 2324–2331.

Golombok, S, Brewaeys, A, Giavazzi, M, Guerra, D, MacCallum, F & Rust, J 2002, 'The European study of assisted reproduction families: the transition to adolescence', *Human Reproduction*, vol 17, no 3, pp 830–840.

Golombok, S, Cook, R, Bish, A & Murray, C 1995, 'Families created by the new reproductive technologies—quality of parenting and social and emotional development of the children', *Child Development*, vol 66, no 2, pp 285–298.

Golombok, S, Perry, B, Burston, A, Murray, C et al 2003, 'Children with lesbian parents: A community study', *Developmental Psychology*, vol 39, no 1, p 20.

Golombok, S, Spencer, A & Rutter, M 1983, 'Children in lesbian and single-parent households: psychosexual and psychiatric appraisal', *Journal of Child Psychology and Psychiatry*, vol 24, pp 551–572.

Golombok, S & Tasker, F 1994, 'Donor insemination for single heterosexual and lesbian women: issues concerning the welfare of the child', *Human Reproduction,* vol 9, no 11, pp 1972–1976.

Golombok, S, Tasker, F & Murray, C 1997, 'Children raised in fatherless families from infancy: family relationships and the socioemotional development of children of lesbian and single heterosexual mothers', *Journal Child Psychology and Psychiatry,* vol 38, no 7, pp 783–791.

Gottlieb, C, Lalos, O & Lindblad, F 2000, 'Disclosure of donor insemination to the child: the impact of Swedish legislation on couples' attitudes', *Human Reproduction,* vol 15, no 9, pp 2052–2056.

Green, R, Mandel, J, Hotvedt, M, Gray, J & Smith, L 1986, 'Lesbian mothers and their children: a comparison with solo parent heterosexual mothers and their children', *Archives of Sexual Behaviour,* vol 15, no 2, pp 167–185.

Grotevant, HD, Dunbar, N, Kohler, JK & Esau, AML 2000, 'Adoptive identity: How contexts within and beyond the family shape developmental pathways', *Family Relations,* vol 49, no 4, p 379.

Hall, C 2004, 'UK donors to lose anonymity', *The Age,* 23 January.

Hansen, M, Kurinczuk, J, Bower, C & Webb, S 2002, 'The risk of major birth defects after intracytoplasmic sperm injection and in vitro fertilisation', *New England Journal of Medicine,* vol 346, no 10, pp 725–730.

Hillier, L, de Visser, RO, Kavanagh, A & McNair, R 2003, 'The association between sexual orientation and licit and illicit drug use in young Australian women', *Medical Journal Australia*, vol 179, pp 326–327.

Hunfeld, J, Fauser, BC, de Beaufort, ID & Passchier, JP 2002, 'Child development and quality of parenting in lesbian families: no psychological indications for a-priori withholding of infertility treatment. A systematic review', *Human Reproduction Update,* vol 8, no 6, pp 579–590.

Hunter, P 2004, 'Pre-implantation Genetic Diagnosis', *New Scientist*, vol 18, no 12, pp 26–31.

Hurst, T & Lancaster, P 2001, *Assisted conception, Australia and New Zealand 1999 and 2000,* Assisted Conception Series no 6, Australian Institute of Health and Welfare, National Perinatal Statistics Unit, Sydney.

Jacob, MC, Klock, SC & Maier, D 1999, 'Lesbian couples as therapeutic donor insemination recipients: do they differ from other patients', *Journal of Psychosomatic Obstetrics and Gynaecology*, vol 20, pp 203–215.

Jorm, A, Korten, A, Rodgers, B, Jacomb, P & Christensen, H 2002, 'Sexual orientation and mental health: results from a community survey of young and middle-aged adults', *British Journal of Psychiatry*, vol 180, pp 423–427.

Kessler, R, Mickelson, K & Williams, D 1999, 'The prevalence, distribution and mental health correlates of perceived discrimination in the United States', *Journal Health and Social Behaviour,* vol 40, pp 208–230.

King, BR 2001, 'Ranking of stigmatization toward lesbians and their children and the influence of perceptions of controllability of homosexuality', *Journal of Homosexuality*, vol 41, no 2, pp 77–97.

Kirkman, M 2002a, 'Moving on, living in subjunctive mode: revising autobiographical narratives after infertility', *The Fertile Imagination: narratives of reproduction*, vol 18, pp 59–82.

Kirkman, M 2003a, 'Parents' contribution to the narrative identity of offspring of donor-assisted conception', *Social Science and Medicine,* vol 57, no 11, pp 2229–2242.

Kirkman, M 2003b, 'Egg and embryo donation and the meaning of motherhood', *Women Health*, vol 38, no 2, pp 1–18.

Kirkman, M 2004, 'Genetic connection and relationships in narratives of donor-assisted conception', *Australian Journal for Emerging Technologies and Society*, vol 2, no 1.

Kirkman, M & Kirkman, A 2002b, 'Sister-to-sister gestational surrogacy thirteen years on: A narrative of parenthood' *Journal of Reproductive and Infant Psychology*, vol 20, no 3, pp 135–147.

Koivurova, S, Hartikainen, A, Sovio, U, Gissler, M, Hemminki, E & Jarvelin, M 2003, 'Growth, psychomotor development and morbidity up to 3 years of age in children born after IVF', *Human Reproduction,* vol 18, no 11, pp 2328–2336.

Kovacs, GT, Morgan, G, Wood, CE, Forbes, C & Howlett, D 2003, 'Community attitudes to assisted reproductive technology: a 20 year trend', *Medical Journal Australia,* vol 179, pp 536–538.

Kovacs, GT, Mushin, D, Kane, H et al 1993, 'A controlled study of the psycho-social development of children conceived following insemination with donor semen', *Human Reproduction*, vol 8, pp 788–790.

Krieger, N, Rowley, D, Herman, A, Avery, B & Phillips, M 1993, 'Racism, sexism and social class: implications for studies of health, disease and well-being', *American Journal Preventive Medicine,* vol 9 (sup), pp 82–122.

Kurinczuk, J, Hansen, M & Bower, C 2004, 'The risk of birth defects in children born after assisted reproductive technologies', *Current Opinions in Obstetrics and Gynaecology*, vol 16, no 3, pp 201–209.

Laird, J 1998, 'Invisible ties: lesbian and their families of origin', in C Patterson & A D'Augelli (eds), *Lesbian, Gay and Bisexual Identities in Families*, Oxford University Press, New York.

Lamb, ME 1999, 'Parental behaviour, family process, and child development in nontraditional and traditional understudied families', in ME Lamb (ed), *Parenting and Child Development in 'Nontraditional' Families,* pp 1–13, Lawrence Erlbaum Associates, New Jersey.

Lee, R 1993, *Doing research on sensitive topics*. Sage, London.

Lerner, R & Nagai, AK 2001, *No Basis: What the Studies Don't Tell Us About Same-Sex Parenting,* Marriage Law Project, Washington DC.

Leslie, G, Gibson, F, McMahon, C, Cohen, J, Saunders, D & Tennant, C 2003, 'Children conceived using ICSI do not have an increased risk of delayed mental development at 5 years of age', *Human Reproduction*, vol 18, no 10, pp 2067–2072.

Lorde, A 1988, 'Turning the Beat Around: Lesbian Parenting 1986', in A Lorde (ed), *A Burst of Light,* Women's Press, Toronto.

MacCallum, F, Lycett, E, Murray, C, Jadva, V & Golombok, S 2003, 'Surrogacy: the experience of commissioning couples', *Human Reproduction*, vol 18, no 6, pp 1334–1342.

Maher, ER, Brueton, LA, Bowdin, SC, Luharia, A, Cooper, W, Cole, TR, Macdonald, F, Sampson, JR, Barratt, CL, Reik, W & Hawkins, MM 2003, 'Beckwith-Wiedemann syndrome and assisted reproduction technology', *Journal of Medical Genetics*, vol 40, no 1, pp 62–63.

McBain, J 2004, 'Chairman's Report', *Technique IVF,* Autumn, p 1.

McNair, R 2002a, 'Lesbian parenthood, an imaginative fertility', *The Fertile Imagination: narratives of reproduction*, vol 18, pp 267–287.

McNair, R (in press), 'From GP to political activist for the new family', in HG Jones & M Kirkman (eds), *Sperm Wars,* ABC, Melbourne.

McNair, R, Anderson, S & Mitchell, A 2001, 'Addressing health inequalities in Victorian lesbian, gay, bisexual and transgender communities', *Health Promotion Journal of Australia*, vol 11, no 1, pp 32–38.

McNair, R, Dempsey, D, Wise, S & Perlesz, A 2002b, 'Lesbian parenting: Issues, Strengths and Challenges', *Family Matters*, vol 63, pp 40–49.

McNair, RP & Dempsey, D 2003, *Family formation and women's roles,* paper presented at the Australian Institute of Family Studies 8th National Conference, Melbourne, February.

McPherson, D 1994 'Gay parenting couples: parenting arrangements, arrangement satisfaction and relationship satisfaction', *Dissertation Abstracts International: Section B: The Sciences and Engineering*, vol 54, p 3859.

Melbourne IVF 2003, *IVF Patient information,* Melbourne IVF.

Mercier, LR & Harold, RD 2003, 'At the interface: Lesbian-parent families and their children's schools', *Children & Schools*, vol 25, no 1, p 35.

Millbank, J 2003, 'From here to maternity: A review of the research on lesbian and gay families', *Australian Journal of Social Issues*, vol 38, no 4, pp 541–600.

Miller, B 1979, 'Gay fathers and their children', *The Family Coordinator*, vol 28, pp 544-552.

Moore, LJ 2003, '"Billy, the sad sperm with no tail": representations of sperm in children's books', *Sexualities*, vol 6, no 3-4, pp 277–300.

Murray, C & Golombok, S 2000, 'Oocyte and semen donation: a survey of UK licensed centres', *Human Reproduction*, vol 15, no 10, pp 2133–2139.

Niemitz, A & Feinberg, A 2004, 'Epigenetics and ART: a call for investigation', *American Journal of Human Genetics*, vol 74, pp 599–609.

O'Connor, V & Kovacs, GT 2003, 'Pre-pregnancy and antenatal care', in V O'Connor & GT Kovacs (eds), *Obstetrics, Gynaecology and Women's Health,* pp 209–251, Cambridge University Press.

Patterson, CJ 1995a, 'Families of the lesbian baby boom: Parents' division of labour and children's adjustment', *Developmental Psychology*, vol 31, pp 115–123.

Patterson, CJ 1995b, *A Resource for Psychologists Lesbian and Gay Parenting,* <www.apa.org/pi/parent.html> at 25 April 2000.

Patterson, CJ 1996, Lesbian Mothers and Their Children: Findings from the Bay Area Families Study', in J Laird & RJ Green (eds), *Lesbians and Gays in Couples and Families,* Jossey-Bass, San Francisco.

Patterson, CJ 2000, 'Family relationships of lesbians and gay men', *Journal of Marriage and the Family*, vol 62, pp 1052–1069.

Patterson, CJ & Chan, RW 1997, 'Gay Fathers', in M Lamb (ed), *The role of the father*, 3rd edn, Wiley, New York, pp 245–260.

Patterson, CJ, Hurt, S & Mason, C 1998, 'Families of the lesbian baby boom: children's contact with grandparents and other adults', *American Journal of Orthopsychiatry,* vol 68, no 3, pp 390–399.

Patterson, CJ 1992, 'Children of gay and lesbian parents', *Child Development*, vol 63, pp 1025–1042.

Perlesz, A & McNair, R (in press), 'Lesbian parenting: insider's voices', *Australian and New Zealand Journal of Family Therapy*.

Perrin, EC, Hagan JF jnr, Coleman, WL, Foy, JM et al 2002, 'Technical report: Co-parent adoption by same-sex parents', *American Academy of Pediatrics*, vol 109, no 2, pp 341-344.

Plumb, M 2001, 'Undercounts and overstatements: will the IOM report on lesbian health improve research?', *American Journal of Public Health,* vol 91, pp 873–875.

Popenoe, D 1993, 'The national family wars', *Journal; of Marriage and the Family,* vol 55, pp 553–555.

Ram, B & Hou, F 2003, 'Changes in family structure and child outcomes: roles of economic and familial resources', *Policy Studies Journal,* vol 31, no 3, pp 309–330.

Ray, V 2003, *Fostering resilience in children of lesbian and gay families,* fact sheet no 2.1, Australian Drug Foundation, Melbourne.

Ray, V & Gregory, R 2001, 'School experiences of the children of lesbian and gay parents', *Family Matters*, no 59, pp 28–34.

Rissel, CE, Richters, J, Grulich, AE, de Visser, RO & Smith, AM 2003, 'Attitudes towards sex in a representative sample of adults', *Australian and New Zealand Journal of Public Health*, vol 27, no 2, pp 118–123.

Saffron, L 1996, *What about the Children? Sons and Daughters of Lesbian and Gay Parents Talk About Their Lives*, Cassell, London.

Sanson, A & Lewis, V 2001a, 'Children and their family contexts', *Family Matters,* no 59, pp 4–9.

Sanson, A & Wise, S 2001b, 'Children and parenting: the past hundred years', *Family Matters*, no 60, 36–45.

Sants, H 1964, 'Genealogical bewilderment in children with substitute parents', British *Journal of Medical Psychology*, vol 37, pp 133–141.

Sarantakos, S 1996, 'Children in three contexts: family, education and social development', in S Sarantakos, *Modern families: an Australian text,* McMillan Education.

Savulescu, J 2002, 'Is there a "right not to be born?" Reproductive decision making, options and the right to information', *Journal of Medical Ethics,* vol 28, pp 65–67.

Sawyer, M, Arney, F, Baghurst, P, Clark, J, Graetz, B, Kosky, R et al 2000, *The mental health of young people in Australia.* Department of Health and Aged Care, Canberra.

Scheib, JE, Riordan, M & Rubin, S 2003, 'Choosing identity-release sperm donors: the parents' perspective 13–18 years later', *Human Reproduction,* vol 18, no 5, pp 1115–1127.

Shenfield, F 2002, 'To know or not to know the identity of one's genetic parent(s): a question of human rights?' in D Healy, G Kovacs, R McLachlan & O Rodrguez-Armas (eds), *Reproductive medicine in the twenty-first century,* Parthenon Publishing Group.

Shenfield, F & Steele, S 1997, 'What are the effects of anonymity and secrecy on the welfare of the child in gamete donation?' *Human Reproduction,* vol 12, pp 392–395.

Silburn, S, Zubrick, S, Garton, A, Gurrin, L, Burton, P & Dably, R 1996, *Western Australia child health survey: family and community health,* Australian Bureau of Statistics and Telethon Institute for Child Health Research, Perth.

Silverstein, L & Auerbach, C 1999, 'Deconstructing the essential father', *American Psychologist*, vol 54, pp 397–407.

Stacey, J 1996, *In the name of the family: rethinking family values in the postmodern age,* Beacon Press, Boston.

Stacey, J & Biblarz, TJ 2001, '(How) does the sexual orientation of parents matter?' *American Sociological Review,* vol 66, pp 159–183.

Stanley, F 2001, 'A unique way of working towards a national partnership for developmental health and wellbeing', *Family Matters*, vol 58, pp 62–67.

Stromberg, B et al 2002, 'Neurological sequelae in children born after ICF: A population-based study', *The Lancet,* vol 359, pp 461–465.

Symons, K 2004, 'Young-old rift on family value', *The Australian,* 14 April, p 3.

Tasker, F & Golombok, S 1995, 'Adults raised as children in lesbian families', *American Journal of Orthopsychiatry*, vol 65, pp 203–215.

Tasker, F & Golombok, S 1997, *Growing Up in a Lesbian Family,* The Guilford Press, New York.

Tasker, F & Golombok, S 1998, 'The role of co-mothers in planned lesbian-led families', in GA Dunne (ed), *Living 'difference': Lesbian perspectives on work and family life*, Haworth Press, New York, pp 49–68.

Tomlins, J 2002, 'Unravelling the fabric of society...again', *The Fertile Imagination: narratives of reproduction,* vol 18, pp 145–166.

Trainor, BT 1995, 'The forgotten children', *IPA Review*, vol 47, no 3, pp 40–42.

Turner, A & Coyle, A 2000, 'What does it mean to be a donor offspring? The identity experiences of adults conceived by donor insemination and the implications for counselling and therapy', *Human Reproduction,* vol 15, no 9, pp 2041–2051.

Van Voorhis, R & McClain, L 1997, 'Accepting a lesbian mother', *Families in Society: The Journal of Contemporary Human Services*, vol 78, no 6, pp 642–650.

Vanfraussen, K, Ponjaert-Kristoffersen, I & Brewaeys, A 2001, 'An attempt to reconstruct children's donor concept: a comparison between children's and lesbian parents' attitudes toward donor anonymity', *Human Reproduction,* vol 16, no 9, pp 2019–2025.

Vanfraussen, K, Ponjaert-Kristoffersen, I & Brewaeys, A 2003, 'Family functioning in lesbian families created by donor insemination', *American Journal of Orthopsychiatry*, vol 73, no 1, pp 78–90.

Wakeling, L 1995, 'Beyond blood: the lesbian and gay family', in L Wakeling & M Bradstock (eds), *Beyond blood: Writings on the lesbian and gay family,* Black Wattle Press, Sydney, pp 11–21.

Walker, KL 2000, '1950s family values vs human rights: in vitro fertilisation, donor insemination and sexuality in Victoria', *Public Law Review,* vol 11, no 4, pp 292–307.

Wardle, L 1997, 'The potential impact of homosexual parenting on children', University *of Illinois Law Review*, no 3, pp 833–866.

Weeks, J, Heaphy, B & Donovan, C 2001, *Same Sex Intimacies: Families of choice and other life experiments,* Routledge, London.

Weinraub, M & Gringlas, M 1995, 'Single Parenthood', in M Bornstein (ed), *Handbook of parenting,* Howe: Erlbaum Associates.

Wilton, L 2004, 'Genetic Diagnosis under the microscope', *Technique IVF news,* Autumn, p 1.

Wise, S 2003, *Family structure, child outcomes and environmental mediators. An overview of the Development in Diverse Families study,* no 30, Australian Institute of Family Studies, Commonwealth of Australia, Melbourne.

Other VLRC Publications

Disputes Between Co-owners: Discussion Paper (June 2001)

Privacy Law: Options for Reform—Information Paper (July 2001)

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