

THE REGULATION OF MEDICALLY ASSISTED PROCREATION  
IN EUROPE AND RELATED NATIONS  
AND THE INFLUENCE OF NATIONAL IDENTITY, SOCIAL CULTURAL,  
AND DEMOGRAPHIC DIFFERENCES

Beverly J. Wunderlin, B.A., M.S.W., M.A.

Dissertation Prepared for the Degree of  
DOCTOR OF PHILOSOPHY

UNIVERSITY OF NORTH TEXAS

APPROVED:

Rudy Ray Seward, Major Professor  
James Williams, Minor Professor  
Susan Brown Eve, Committee Member  
David A. Williamson, Committee Member  
Milan Zafirovski, Committee Member  
Dale E. Yeatts, Chairman, Department of Sociology  
David W. Hartman, Dean, School of Community Service  
C. Neal Tate, Dean, Robert B. Toulouse School of Graduate Studies

Wunderlin, Beverly J., The Regulation of Medically Assisted Procreation in Europe and Related Nations and the Influence of National Identity, Social Cultural, and Demographic Differences. Doctor of Philosophy. Sociology. August 2002. pp. 235, tables 7, illustrations 20, titles in reference list 126.

This study details the Medically Assisted Procreation regulations in thirty-five nation-states, and explores the influence of national identity, social cultural and demographic differences on these regulations.

Detailed data were gathered from ministries of health, offices of prime ministers, embassy staff, and others on regulations for each nation. These data were used to categorize the nations in regard to MAP legislation status and regulatory policy regarding marital or age restrictions; posthumous conception; sperm, ovum, or embryo donation, surrogacy; and policy on handling donors. Possible associations between national identity, social cultural, and demographic data for each nation and their regulations were explained. The thirty-five nations were treated as a population with common geographical and political ties. PRE methods, and eta coefficients were used to assess the associations.

Sixteen nations have adopted MAP legislation, eight nations have either alternative regulatory guidelines or partial structures, four nations have legislation pending and possibly some laws, and seven nations are unregulated. Based upon statistical analysis, language group emerges as an important indicator for differences in MAP regulations. For example knowing a nation's language group enabled a fifty-eight

percent improved prediction of that nation's regulatory handling of embryo donation.

The percent GDP spent on health care was found to have a substantial or moderate association with most regulations.

The findings of this study indicate that the cultural roots associated with national identity as well as economic circumstances such as health care budgets impact the policy making process responsible for the regulation of MAP in Europe. Among other mediating circumstances, MAP related family law cases brought to the European Court of Human Rights create an accumulation of judge-made law, which help create a common European standard. This study of the European region provides a baseline for further research and a reference for cross cultural comparisons.

## TABLE OF CONTENTS

LIST OF TABLES.....	vi
LIST OF FIGURES.....	vii
Chapter	
I. STUDY OBJECTIVES AND THEORETICAL BASIS.....	1
Introduction.....	1
First Study Objective.....	4
Socio-legal Theory.....	4
Second Study Objective.....	11
Issues of Nationalism or National Identity Theory.....	11
Social Cultural and Demographic Differences.....	18
II. CURRENT ISSUES IN MEDICALLY ASSISTED PROCREATION.....	22
Major Advances in Medically Assisted Procreation.....	23
Child-oriented versus Adult-oriented Perspective.....	26
Surrogate Motherhood.....	27
Post-Mortem Parenthood.....	30
Aspects of Human Rights in MAP Practice.....	36
Treatment of Postmenopausal Women.....	38
Donor Anonymity versus Right to Know One’s Genetic Origin.....	39
The Impact of the Abortion Issue.....	40

	The Status of the Human Embryo.....	42
	Some Examples of the Lack of MAP Regulatory Laws.....	43
	International Bio-ethics Law.....	46
III.	STUDY METHODS.....	51
	Data Collection.....	51
	Research Variables.....	53
	Dependent Variables.....	53
	Independent Variables.....	60
	Leading Ideas and Hypotheses.....	67
	Analysis.....	68
	Conclusion.....	68
IV.	FINDINGS: THE REGULATORY STATUS OF THE NATION-STATES.....	86
	Austria.....	87
	Belgium.....	88
	Bulgaria.....	89
	Czech Republic.....	89
	Denmark.....	90
	Estonia.....	92
	Finland.....	93
	France.....	93

Germany.....	95
Greece.....	97
Hungary.....	98
Iceland.....	99
Ireland.....	101
Italy.....	102
Latvia.....	104
Lithuania.....	104
Luxembourg.....	104
Malta.....	105
Netherlands.....	106
Norway.....	108
Poland.....	109
Portugal.....	110
Romania.....	110
Russia.....	111
Slovakia.....	112
Slovenia.....	113
Spain.....	114
Sweden.....	115
Switzerland.....	116

Turkey.....	117
Ukraine.....	118
United Kingdom.....	118
Australia.....	119
Canada.....	121
New Zealand.....	123
Conclusion.....	125
<b>V. FINDINGS: FACTORS ASSOCIATED WITH DIFFERENT REGULATIONS.....</b>	<b>127</b>
Impact of Language-Spoken and Religious Affiliation.....	127
Hypothesis #1.....	127
Hypothesis #2.....	138
The Impact of Education, Economy, and Health Care.....	143
Hypothesis #3.....	143
Hypothesis #4.....	147
Hypothesis #5.....	150
Health Care System Model.....	156
Demographic Indicators That Measure the Quality of Health.....	157
Interrelationship of the Quality of Health Care and the Demographic Indicators.....	164
Concluding Summary.....	164

VI. SUMMARY AND CONCLUSIONS.....	166
Overview of the Results of the Study’s First Objective.....	166
Actions Taken To Achieve A Common Standard.....	170
Theoretical Concepts Related to the Understanding of Regulation.....	173
Discussion of the Results of the Study’s Second Objective.....	174
Association Between Economy and MAP Regulatory Policy.....	174
Association Between Health Care Status and MAP Practice.....	178
Demographic Trends.....	183
National Identity Theory.....	184
Study Limitations.....	187
Future Study.....	188
Study Contributions.....	189
APPENDIXES.....	192
A. Twenty-One Principles by the Council of Europe’s CAHBI.....	193
B. List of Legislation Pertaining to Medically Assisted Procreation.....	202
C. Supplemental Statistical Analysis.....	206
REFERENCES CONSULTED.....	217



## LIST OF TABLES

### Table

1. Relationship Between Language Groups and Religious Affiliation and the MAP Legislation Status and Regulation.....	129
2. Relationship of Percent GNP Spent on Education to MAP Legislation and Practice.....	145
2. Relationship of Per Capita GNP to MAP Legislation and Practice Regulations.....	148
4. Relationship of Percent GDP Spent on Health Care to MAP Legislation and Practice.....	153
5. Relationship of Birth Rate to MAP Legislation and Practice.....	158
6. Relationship of Infant Mortality Rate to MAP Legislation and Practice.....	160
7. Relationship of Life Expectancy at Birth (years) to MAP Legislation and Practice.....	163

## LIST OF FIGURES

### Figure

1. Gross National Income Per Capita 1999 (US\$) Adjusted for Purchasing Power Parity.....	21
2. The Status of Legislative Action on Medically Assisted Procreation.....	69
3. Requirements for the Societal Relationship of Intended Parents or Marital Status, Practice Guidelines in Medically Assisted Procreation.....	70
4. Age Requirements for Individuals Seeking Infertility Treatment, Practice Guidelines in Medically Assisted Procreation.....	71
5. Regulation of the Practice of Posthumous Conception by Artificial Insemination of the Sperm of Deceased Spouse/Partner.....	72
6. The Practice of Artificial Insemination by Donor (DI) and its Regulation.....	73
7. The Regulation of the Practice of Ovum Donation in Medically Assisted Procreation.....	74
8. The Status of Embryo Donation Practices in Medically Assisted Procreation.....	75
9. Regulations Pertaining to Surrogate Motherhood, The Status of Surrogacy Practice in Medically Procreation.....	76
10. Regulations Pertaining to Handling Donors in Medically Assisted Procreation.....	77

Figure

11. Religious Affiliation Professed According To Nation.....	78
12. 35 Nations Rank Ordered According To Percentage of GNP Spent on Education.....	79
13. A Comparison of 35 Nations Based on the Per Capita GNP 1998 (US\$).....	80
14. 35 Nations Rank Ordered Based on the Per Capita Gross National Product (US\$).....	81
15. 35 Nations Rank Ordered Based Upon the Percentage of GDP Spent on Health Care.....	82
16. 35 Nations Rank Ordered Based Upon Birth Rate.....	83
17. 35 Nations Rank Ordered Based Upon Infant Mortality Rate.....	84
18. 35 Nations Rank Ordered Based On Life Expectancy at Birth (years).....	85
19. Association of MAP Practices and Nations Per Capita GNP.....	151

## CHAPTER I

### STUDY OBJECTIVES AND THEORETICAL BASIS

This study details the regulations of medically assisted procreation in thirty-five nation-states and explores the influence of national identity, social cultural and demographic differences on these regulations. The countries selected are the Council of Europe member states: Austria, Belgium, Bulgaria, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, the United Kingdom; and the non-member participant states: Australia, Canada, and New Zealand. The countries were chosen based upon their prior participation in the Council of Europe work groups or studies.

#### Introduction

The rationale for study is based upon the increasing use of new techniques of artificial procreation world wide. Along with this increase in artificial procreation practices has been a mounting concern expressed by the medical professionals, government officials, and the public. An important impetus for this study was the Council of Europe taking up this matter in response to this increasing use and mounting concerns. In response to concern expressed by government officials and in public opinion polls a committee was convened to deal with the issue. The result was the report, *Human*

*Artificial Procreation* (Council of Europe, 1989), published as an overview of work completed by CAHBI (Ad Hoc Committee of Experts on Progress in Biomedical Sciences) during the period of 1985 to 1987. The publication identified many of the areas to be addressed in this study. It reinforces “The Council of Europe’s conviction that the family is the basic unit of society and is as such entitled to full protection by the state; the techniques of human artificial procreation should never be used to distort the family” (p. 12). The report includes a list of recommendations. The twenty-one principles set forth by CAHBI are presented in Appendix A. The lack of agreement among nations was surprising and suggested the need for further study. The authors of the European report noted the lack of consensus on many points but failed to try and explain this. This study will provide current detailed descriptions for the nations and explore possible factors which may account for the lack of consensus. Even though the authors thought that harmonized regulations between nations was desirable, much national legislation and regulations would be necessary to enable resolutions based on these principles.

Several changes have led to this topic becoming an important issue. The declining birth rates in Europe and elsewhere, plus an increased number of infertile couples has produced a baby demand. The market demand has exceeded the supply. The scarcity of adoptable infants caused by increased acceptance of unwed mothers and available abortions has led many couples looking to reproductive medicine for a solution. The shortage of babies available for domestic adoption has also led to increased international adoptions. Motivation to pursue international trade channels for adoption and surrogate

services comes from the strong incentives created by the economic conditions of the "baby market".

The demand for surrogate services would exist even if babies were more available due to the human desire for genetic continuity. Individual identity is linked to the genetic ties from parents. Presently, the unregulated status of international surrogacy is reminiscent of earlier international adoption practices. The growing black market in the trafficking of children eventually prompted the United Nations to act. Regulation of international adoption did not exist until the crisis in Romania. The Romanian dictator Nicolae Ceausescu's fall from power, and the related lack of stability, caused large numbers of Romanian children to be placed in orphanages. A critical need to prevent child abduction and stop baby-selling was recognized. The United Nations accepted international adoption as an existent trade for the first time. The Hague Convention on Intercountry Adoption was ratified in 1993. The three objectives of the Convention could encompass surrogacy with minor modifications in interpretation. Since neither the surrogate mothers nor the children of surrogacy have a clear legal status, Leibowitz-Dori (1997) and McEwen (1999) suggest that the Hague Convention on Intercountry Adoption should include surrogacy.

The European and related nations vary in their response to the new technologies through the adoption of very different regulatory measures. The need, scope, and nature of government intervention is delineated in many ways. There is general agreement that an individual's potential offspring should not be born without the individual's knowledge

or against the will of the individual. Thus, the gamete provider (sperm or ovum) should control the ultimate disposition of the biological materials. Consequently, the need for consent to the procedures associated with assisted conception is widely accepted.

Collaborative reproduction involving donors and surrogates is problematic due to the intrusion of, at minimum, a third party into a traditionally two party setting. People in society must decide if or when regulation or restriction of medically assisted procreation should occur.

#### First Study Objective

The first objective of this study is the description of the regulatory practices adopted by the thirty-five nation-states under study. According to Lenoir (1995) the “laws of different countries reflect the traditions of each individual country” (p.17). For example the law of Anglo-Saxon cultures reflects individual autonomy.

#### Socio-legal Theory

One way to view regulatory influences is through socio-legal theory. Black (1976) identifies culture to be “the symbolic aspect of social life” including “conceptions of what ought to be, what is right and wrong, proper and improper”. Law has “a symbolic aspect of this kind” (p. 61). Black suggests “law varies directly with culture”. The richness or depth of culture varies from place to place and over time. Richness of culture is related to the number of languages, religions or customs. A sparse culture or homogeneous population is associated with sparse law and a rich culture or diverse heterogeneous population is linked to more law (p. 63). The European region includes numerous

languages, a variety of Christian denominations and other faiths, as well as a diversity of ethnic origins.

In theory the source of the law is the will of the people in a democracy. The Council of Europe (1995) Proceedings of the 3<sup>rd</sup> European Conference on Family Law introduces numerous MAP related problems impacting the rights of the child, the child's legal status, and special circumstances developing for unmarried couples. These issues highlight the impact of the new technologies. The situations reflect society's inability to keep pace with the advances in biotechnology. "The notion that law fails to adjust promptly to the call for change" is cited by Friedman and Ladinsky (1997) as due to the legal system's position as part of culture. Behavior change required for social or legal change involves the interaction of groups or individuals. The interaction process generally includes clarification or perhaps some opposition thus predicatively entails some progress time or lag time (p. 642).

Vago (1981) uses the concept legalization to describe the process whereby norms are advanced from a social to a legal status. The more complex societies characteristically move toward formal social controls due to differing sets of values or mores plus a larger division of labor. Normative consensus and situations of face-to-face interaction are conducive to less formal social control. Thus nations having a homogeneous population where people share a common language and a common religion are more likely to achieve a normative consensus in regard to medically assisted procreation. This set of circumstances has been suggested as the reason the nation of Greece has not passed MAP



regulatory legislation. The Council of Europe's (1989) CAHBI points out that the Irish Constitution is one of only two national legal texts which address the status of the embryo; thus indicating the level of importance granted to the subject area. The nation of Ireland has not passed regulatory legislation; instead a set of guidelines issued by the Medical Council is deemed sufficient to address the practice. The Irish Republic is populated by a very homogeneous people. In contrast Switzerland, known for its diversity in languages spoken, and fairly equal division between Catholic and Protestant faiths, passed federal MAP legislation in 1998.

Black (1976) suggests the style of social control varies across settings and includes law. The regulatory strategies nations use for MAP include both conciliatory control and penal control. The styles of social control are often used in combination. An example of conciliatory control is built into the United Kingdom's fertility clinics, i.e., the boards of the various clinics review requests for treatment that may involve disputes or controversy. Penal control prohibits specific conduct, and punishments result from prohibitions. In regard to MAP the specific nature of punishments is significant, both in severity of the punishment and the targeted person or persons. For example Germany punishes the physician who implants ova into a woman who was not the donor. Thus the medical professional who transfers the embryo or enables surrogacy risks criminal charges and imprisonment, not the childless couple. The response to prohibitions is quite punitive in Germany. Although other nations may respond with less severity, most legislation is framed to aim penalties toward service providers rather than the individuals experiencing

infertility (p. 5). Black (1998) stresses the social control style of conciliation involves a relationship whereas penal style social control focuses on an act. The conciliatory style looks at conflict resolution and restoration of harmony. The penal style identifies an offender and is concerned with punishment, deterrence, or both (pp. 7-8).

One way nations have chosen to regulate MAP practices is administrative law. For example the United Kingdom's HFEA issues licenses for research projects and infertility treatment. Administrative law generally entails licensing, monitoring or inspection, and the possible consequence of negative publicity. The powers of the regulatory body are spelled out by the law. The law specifies the conditions or requirements for license, procedures for revocation, and violation penalties. Vago (1981) suggests adverse publicity to be the most powerful aspect of administrative control (pp. 186-188). The United Kingdom example entails statutory law or legislated law followed by administrative law. This differs from the less formal process found in Ireland where guidelines issued by the Medical Council stand alone without statutory backup. The regulatory strategies of the 35 nation-states in this study includes all forms of law as found in figure 2. Case law enacted by judges is found in all nation-states. Case law may enable the re-interpretation of previously existing law or result from challenges to new law.

The use of law as a method of conflict resolution is illustrated by case law described under post-mortem parenthood in the next chapter. The French case of *Parpalaix v. CECOS* and Diane Blood's case against the United Kingdom's HFEA involve rights prior to gestation whereas the Australian case *Estate of K (Tasmania)* is a post

gestation case involving the right to inherit. Vago (1981) examines the relationship between society's increased litigation needs associated with increased social development. The increases in legally actionable rights and remedies that may be created by legislatures and courts are closely related. The French case entails a dispute between the deceased's parents and spouse and the sperm bank prior to creation of pertinent law. In the Diane Blood case the ruling of the legally created authority was challenged. Thus providing examples of how increased social development (technological advances) led to the need for litigation and how the existence of a law led to opposing litigation. The Tasmanian case involved the efforts of the estate executor to obtain assistance in handling a situation previously not encountered or even possible.

Black (1998) views someone subjecting someone else to social control or the expression of a grievance as "a clash of right and wrong", a matter of morality or justice. The application of morality varies with the social structure of the conflict. Britain's large collection of case law and statutory law pertaining to surrogacy stands as an example of the complexity of this issue. Surrogate motherhood is emerged in contradictory social truths, e.g., genetic mother versus gestational mother. Conflict management related to surrogacy depends on the social diversity among the parties involved and those who intervene. Many nation-states have opted to outlaw surrogacy. Black suggests the law is an expression of the larger culture, it is unique to every society, and the time. The local British authority first intervened in the surrogate birth of Kim Cotton in 1985. The infant was made a ward of the court. A surrogacy agency in the United States contracted with

Mrs. Cotton, a British woman, to deliver a baby for American “intentional parents”. Since the intervention preceded the filing of an adoption petition, possible violation of British adoption law due to a surrogacy payment was not considered. The judge awarded custody to the American couple using the “child’s best interest standard”. Garrity (2000) points out that the UK Surrogacy Arrangements Act was enacted the same year. The Act prohibits the recruitment of surrogates and outlaws commercial surrogacy agencies.

Sutton (2001) says: “law provides a context in which we struggle over moral issues” (p.6). The European Court of Human Rights (ECHR) has referred to the European Convention on Human Rights as “a constitutional instrument of European public order”. The member states of the Council of Europe have recognized the right of individuals to bring complaints to the ECHR and to abide by its compulsory jurisdiction (Lawson & Schermers, 1997, p. vii). Family life cases involving MAP practices have been introduced to ECHR. This process entails the accumulation of case-law or judge-made law. A “European standard” has the potential to develop as a result of this process thus yielding a professional consensus. Strasbourg case-law includes *Kerkhoven v. Netherlands* (Application No. 15666/89, decision of May 19, 1992) where the Court held that a state is not required to enable a non-biological parent in a lesbian relationship to have parental responsibility of a child born to the couple using artificial insemination. An earlier comparable finding in *X v. the UK* (Application No. 14753/89, decision of October 9, 1989) is consistent. As stated by Sutton (2001), jurisprudence is an element of the law, a self-generated activity that is a part of the social order (p. 7). The content or case law

consists of the ECHR rulings on the administration of rights, duties, or prohibitions to be allowed or not allowed. Thus over time after a sufficient number of cases are heard the ECHR will produce standards representative of the Council of Europe member states.

Posner (1996) stresses that the English legal system is in many important ways similar to the Continental legal system, although the American system is generally believed to be modeled after English common law. Changes in the English legal system have been produced by pressures from finances, caseloads, and accession to the European Union (p. ix). The widely discussed case dealing with posthumous conception, *R. v. Human Fertilisation and Embryology Authority, ex parte Diane Blood*, stands as an example of the impact of EU membership (see the following chapter for more details). Posner (1996) sees the diversity of the legal systems' character to be an effect of the same complex of causes associated with the national character attributable to European nation states (p. 109).

Another interpretation stresses the tension between law and custom, which occurs due to cultural lag (Kidder, 1983). Law responds to changes in moral standards in a reduced pace as compared to custom. Extra time is required for the makers of law and policy to recognize cultural change, and form agreements regarding content and appropriateness (p. 42).

## Second Study Objective

Explaining the basis for variation or the lack of national legislation or guidelines

in some nation-states is a second objective. A comparative legal analysis by Lorio (1999) recognizes that each national “regulatory system is contextually unique, combining culture, religion, history, and politics. What is effective in one environment may be anathema in another” (p.249). In many circumstances, the absence of regulatory laws may be interpreted as no objections to practices or any need for government intervention. The converse can also be true, as for example, in Malta the strong influence of the Catholic Church is believed to cause medically assisted procreation to be seen as a matter for church not government authority.

The exploration of national identity, also described as national character, is pursued as the major explanatory element in the variation in regulatory measures adopted by the nation-states. The parallel concept national character is defined by Inkeles (1997) as the “relatively enduring personality characteristics and patterns that are modal among the adult members of the society” (p. 17). At issue is “To what extent the patterned conditions of life in a particular society give rise to certain distinctive patterns in the personalities of its members?” (p. 3). The distinctive traits or qualities peculiar to each nation-state are descriptive of that society’s character and are much like describing an individual’s personality.

#### Issues of Nationalism or National Identity Theory

National identity theory, specifically the ethnonationalism perspective of Anthony D. Smith, facilitates an understanding of the differences between the perspectives held by the nation-states. Smith (1995) believes the two-way association for each nation between

its ethnic past and nationalism is continually renewed, holding the secret of a nation's energy and power over its members. In contemporary society humans retain a multiplicity of allegiances or identifications, which may either cross-cut or reinforce national identities. Widely shared religious sentiments can operate to reinforce a sense of national identity. For example, Catholicism is an important part of Ireland's identity. Further, the nature of Catholicism may contribute something unique to national identity. Triandis (1995) suggests that Catholicism will contribute to a more collectivist view than will be found in a nation which is primarily protestant (p. 169). On the other hand, lack of shared religious sentiments may function to diminish national identity, e.g., Switzerland. Smith (1995) makes a useful distinction between individual and collective identification. While individuals tend to identify themselves differently according to each situation, collective identities, particularly religious and ethnic, are more intense and durable. Therefore the latter are more resistant to change than individual identities (p.59). The continuation of the differing national identities between the nation-states is predictable due to the multiplicity of European language groups and ethnic heritages.

The theoretical perspective known as ethnonationalism identifies the nation-state as the site of political identity. Anthony Smith (1992) says: "A nation is a political community only in so far as it embodies a common culture and a common social will" (p. 62). Smith believes that mass level political change only occurs slowly on an incremental basis through cultural evolution. Smith (1995) argues that nationalism gathers its power from its historical embeddedness. It inspires specific groups and strata

through particularized cultural traditions and ethnic makeups. Although the trend is to equate national identity with the nation-state, the merger of sovereignties fails to blend cultures or unify identities. Thus an economic or political union or federation of European nations is not likely to erode the deeply ingrained cultures or identities of these diverse populations. Modern Europe would require a secular equivalent to medieval Europe's unity founded on a Christian culture and a Catholic identity. The common religious faith and system of values bound the medieval Europeans of this epoch. The collective bond which develops through communication and socialization is critical. The persistence of national identities has its foundation in ethnic heritages and European language groups. Smith views the Europeans as having a family of cultures composed of partially shared historical traditions and cultural heritages. The overlapping cultural and political traditions, values, symbols, and inter-European experiences result in varying affects through out the region. The partially shared traditions include Roman law, political democracy, parliamentary institutions, and Judeo-Christian ethics. The old issues of religious cleavages continue. The inter-Christian divides start with the Western Christendom (of Catholic and Protestant) and Eastern Orthodoxy.

The basis for the lack of consensus regarding the regulation of medically assisted procreation is found in the differing national identities which are based in national cultures. Schlesinger (2001) defines national culture as the "the body of values, practices, and identities deemed to make particular nations different from others. Culture in this sense may be thought of as thick, as dense, as exercising special demands on the



affects and loyalties of those who live within it” (p. 94). Cederman (2001) uses a process theory developed by Giesen that traces boundary-forming practices and mechanisms as a basis for the study of nationalism. The German sociologist Giesen proposes that national identity formation is interactive. National identities emerge as the result of communication processes between individuals in each society. Collective or national identity results from the social communication processes (p.7). In the process of identity formation, social structures including institutions and social group boundaries are established. These social structures, in turn, are supportive of the national identity. There is a continuing process by which nations are reconstructed or re-imagined. In many societies, formal schooling has become the tool of political socialization. The complexity of the modern nation-state merits specialized, educational institutions for the production of a national identity (Cederman, 2001).

Individualism versus Collectivism. The nation-states included in this study easily divide into smaller groups based upon the dominant language or religious affiliation. Thus supporting the idea of a family of cultural groups. Social cultural indicators or differences related to economic status such as the gross national product per capita offer another way to assess national identities. For example related research by Hofstede (1980) found a high GNP per capita to be strongly associated with individualism. Although others would argue contradictory viewpoints, Hofstede’s findings indicate that the better the economic circumstances the greater the individual freedom. Affluence fosters individualism and individualism provides more choices; thus representing a

circular relationship. Individualism is associated with societies where achievement is praised and equal treatment under the law is demanded. In individualistic cultures personal goals have priority whereas in collectivistic cultures group goals are granted priority (Triandis, 1995, p. 43). Anglo-Saxon cultures typically have laws which embody individual autonomy. The political systems of individualistic cultures are designed to meet individual needs. Individualism and limited state control are favored (Triandis, 1995, p. 139).

A measure of collectivism was developed by Pampel (1998) consisting of a scale of five variables which relate to the degree nation's public institutions provide collective social protection, and support collective decision-making in both the economy and polity. Pampel's research focus differed from this study but includes sixteen of the thirty-five nations. These nations are ranked as follows on the collectivism scale:

- |                       |                            |                         |
|-----------------------|----------------------------|-------------------------|
| 1. Norway (1.68)      | 7. Finland (.53)           | 13. New Zealand (- .83) |
| 2. Sweden (1.51)      | 8. Belgium (.23)           | 14. France (- .84)      |
| 3. Denmark (1.17)     | 9. Germany (.06)           | 15. Australia (- 1.00)  |
| 4. Netherlands (1.02) | 10. Ireland (- .55)        | 16. Canada (- 1.23)     |
| 5. Austria (.83)      | 11. Italy (- .65)          |                         |
| 6. Switzerland (.71)  | 12. United Kingdom (- .76) |                         |

Origin of Collective Identity. This study involves the nature of collective, cultural identities, expressly national identities, and their significance in the regulatory

actions taken with respect to assisted conception. Cerulo (1997) credits the work of Cooley and Mead, with its individual focus, as the basis for the sociological study of identity. This microsociological approach was dominant through the decade of the 1970s.

She notes a shift in the past two decades to collective and political implications involving collective definitions. Cerulo described collective identity as a concept grounded in classical sociology, specifically Durkheim's construct of collective conscience, Marx's class consciousness, Weber's *Verstehen*, and Tonnies' *Gemeinschaft*. This notion of collective identity stresses shared attributes, these qualities believed to be internalized thus becoming the foundation for the formation of a sense of self. Cerulo says at the collective level the current trend is for theorists or researchers to explore the perfunctory ways in which dissimilarities are generated, sustained, and altered. Smith (1995) says the older theorists, such as Charles Tilly, presumed that once a nation was forged, it exists as a community of culture and power, consolidating, vitalizing, constraining. In Durkheim's terminology they were social facts. The qualities of generality, exteriority, and constraint were ascribed to social facts by Durkheim. In addition they were social actors. Easily nations are the largest and most powerful actors in the political arena. Nations are comprised of distinct elements, their cultures vary.

According to Cerulo, social constructionism drives the diverse writings on national identity. Among the theorists questioning nationalism are Giddens and Tilly. Cerulo sees Anthony D. Smith as challenging constructionism. Smith views national

identity to be a combined consequence of pre-existing ethnic identity and community as well as conscious maneuvering through celebration, symbolism, or credo. Smith's work indicates national identity to be "the most fundamental and inclusive of collective identities", according to Cerulo (p. 391). Smith (1991) cites the sense of national identity to constitute a powerful way to define and locate individuals within the world. It provides for a collective personality, and a shared unique culture.

Cerulo points out the significance of technology to identity posed by the presence of new communication. This includes the impact on community makeup and associated collective identity.

Durkheim's Perspective on Social Constraint. When speaking of social constraint, Durkheim (1982) says "collective ways of acting and thinking possess a reality existing outside individuals, who, at every moment, conform to them" (pp. 44-45). Durkheim indicated that due to the way constraint is defined, this term may infuriate those who support individualism. For these people it appears that a person is diminished each time he or she is made aware they are not dependent on only their self. According to Durkheim a social fact is identified by the power of external coercion it either exerts or is capable to exert on people. The presence of constraint is readily discoverable if it is exhibited externally through society's direct reaction, as in the instance of law. Constraint is not so easily recognized when exerted by an economic organization. In the case of this study the health care budgets may be one source of indirect constraint.

Durkheim on the Law. Wherever social life becomes lasting, there is a tendency

to become organized and assume precise form. When the degree of regulation fails to attain the precision and consolidation associated with law, social relationships are regulated by custom. Durkheim (1983) asserts: “law mirrors only a part of social life and consequently furnishes us with only incomplete data with which to resolve the problem” (p. 34). Thus customs are oftentimes “out of step with the law” (p. 34). It is often thought that customs temper the severity of the law, and correct excesses stemming from the formal nature of law. Customs and law may sometimes be inspired with very dissimilar ethos. For this to happen the law must cease to correspond with the society’s present state, yet continuing perhaps due to habit. The normal circumstance is that customs do not oppose law, and are in fact the basis for law.

Durkheim says legal precepts are defined as rules of behavior to which sanctions are applied. These sanctions vary according to the degree of seriousness, level of public consciousness, and societal role occupied by the particular sanction. Legal rules are classified according to the attached sanctions. For Durkheim, law constitutes an undistorted reflection of society’s collective morality.

#### Social Cultural and Demographic Differences

The social cultural indicators selected to describe each nation are the study’s independent variables. They are the language, religion, education, and economic aspects of these nations. These indicators are commonly used as descriptive atlas or almanac categories as well as demographic variables. As described by Smith (1992), linguistic origins and collective religious sentiments have key roles in identity theory. The

predominant language-spoken is a way to group the nation-states in clusters having shared cultural foundations. As Malta indicates, religious beliefs are known to influence attitudes about infertility treatment. Education is another important ingredient. The level of sophistication regarding medical technology and bio-ethics is connected in part to the level of education. Cederman (2001) refers to public education as the central knowledge producer and creator of citizens in the nationalism literature on identity formation (p. 140).

Comparison of one aspect of the economic status of the 35 nation-states is presented in Figure 1. The data are the gross national income (GNI) per capita 1999 reported in United States dollars and adjusted for purchasing power parity (PPP) (Population Reference Bureau, 2001). The earnings levels of the European nation-states differ dramatically. The range almost reaches thirty-eight thousand dollars. The eastern European nation-states, who have the lowest figures, are experiencing economic instability and find it difficult to meet basic western economic standards. For some eastern European nation-states these circumstances preclude addressing the complexities of medically assisted procreation. The difficulties in the Ukraine are reflected in the lowest GNI PPP reported of \$3,360. Luxembourg is at the high end of the range with the GNI PPP of \$41,230.

The model most representative of each national health care system and the percentage of GDP spent on health care were also independent variables. Each nation-state's health care system was an important aspect of this study because of the focus on

medical practices. Professional practice guidelines are often forerunners of later legislation. The guidelines are influenced by the system model or the way the system is financed. The health care system model in each nation-state was viewed as an indicator of government support and resource availability. The health care budget was another indicator. Funding for health care is directly related to the provision of infertility services. For example, health authorities who do not consider infertility to be an illness, due to the lack of a cure, may be reluctant to purchase services. They argue that technologies used in medically assisted procreation (MAP) fail to permanently alter the infertile medical status of individuals. Couples who require infertility treatment to achieve a pregnancy generally need the same intervention to achieve a subsequent pregnancy. This study explored the significance of these two health care indicators. Three demographic indicators: birth rate, infant mortality, and life expectancy were included as independent variables as they were considered to be associated with the quality of national health care systems.

The next chapter is a review of the knowledge in the field. The third chapter describes the study's methodology. The fourth chapter is a review of the findings in regard to objective one. It provides a description of the regulatory status of each of the thirty-five nation-states. The fifth chapter sets forth the study findings in regard to objective two. The sixth and final chapter summarizes the study and the conclusions.

Figure 1: Gross National Income Per Capita 1999 (US\$)  
Adjusted for Purchasing Power Parity

Austria	\$24,600
Belgium	\$25,710
Bulgaria	\$ 5,070
Czech Republic	\$12,840
Denmark	\$25,600
Estonia	\$ 8,190
Finland	\$22,600
France	\$23,020
Germany	\$23,510
Greece	\$15,800
Hungary	\$11,050
Iceland	\$27,210
Ireland	\$22,460
Italy	\$22,000
Latvia	\$ 6,220
Lithuania	\$ 6,490
Luxembourg	\$41,230
Malta	\$-----*
Netherlands	\$24,410
Norway	\$28,140
Poland	\$ 8,390
Portugal	\$15,860
Romania	\$ 5,970
Russia	\$ 6,990
Slovakia	\$10,430
Slovenia	\$16,050
Spain	\$17,850
Sweden	\$22,150
Switzerland	\$28,760
Turkey	\$ 6,440
Ukraine	\$ 3,360
United Kingdom	\$22,220
Australia	\$23,850
Canada	\$25,440
New Zealand	\$17,630

\* Data for Malta not available.



## CHAPTER II

### CURRENT ISSUES IN MEDICALLY ASSISTED PROCREATION

This chapter is a review of the literature pertaining to infertility treatment and the impact of technological advances and their regulatory aspects in Europe and related nations. Due to the complex causes of infertility, not all of the couples seeking medical help for the treatment of involuntary childlessness will achieve pregnancy. Eriksson (2000) suggests infertility factors include socio-behavioral, heritable, pathological, environmental, and possibly a link to unsafe abortions. The incidence of infertility is significant, particularly in the industrialized countries. Between fifty and eighty million people or between eight percent and twelve percent of the couples of child-bearing age world-wide will experience infertility problems during their reproductive lifetime (p.192). The differences in national priorities reflected in legislation are based in part on the values supported by the population. The strong incentive to procreate may cause a clash between public and private concerns. Procreative liberty is seen by some as so vital to personal identity it merits priority in reproductive decisions. Any framework for the management of infertility treatment must be sensitive to the rights of participants, respect individual liberty, and protect progeny. Regardless of the circumstances of conception or gestation, the best interest of children is a common concern. But agreement about what constitutes the best interests of children does not exist.

A major survey of the fertility guidelines and legislation for thirty-eight nations from various parts of the globe is found in a special supplement to *Fertility and Sterility*

by Jones and Cohen (1999). Jones and Cohen report the status of the participating countries on December 31, 1997. Some of the European nations are included along with Argentina, Hong Kong, Korea, Saudi Arabia, Singapore, South Africa, Taiwan, and others. The survey findings reflect broad differences in opinion and action taken. Of the practices involving a third-party, the artificial insemination by a donor has the highest level of acceptance. However, the Muslim nations do not permit any donations of sperm, oocyte, or embryo.

The laws regulating medically assisted procreation mirror a clash in cultural values. A confusing patchwork of practices and laws exist in many places. These circumstances illustrate Ogburn's (1964) *cultural lag theory*. The cultural lag theory contends that advances in material culture, i.e., assisted reproductive technology, occur at a rate far beyond the capacity of the nonmaterial culture to change. As a result a society's law and public opinion, i.e., ideology and belief systems, often *lag* behind.

#### Major Advances in Medically Assisted Procreation

The field of medically assisted procreation is filled with controversy. This controversy starts with disagreement over the reasons for government intervention in such a private area of family life. The first baby conceived using the in vitro fertilization process was Louise Brown born July 25, 1978 in England. Pitrolo (1996) identifies this birth as prompting international anxiety regarding the unregulated nature of medically assisted procreation and its implications. A 1980 Australian birth resulting from in vitro fertilization took place in Melbourne, Victoria. In response to these early occurrences the

United Kingdom founded the Warnock Committee and the state of Victoria in Australia established the Waller Commission. These two groups were early initiatives taken to design regulatory frameworks. The sixty-four recommendations of the 1985 Warnock Committee report influenced the passage of the 1990 United Kingdom's Human Fertilisation and Embryology Act. The Act established the Human Fertilisation and Embryology Authority, which is responsible for the licensing and monitoring of reproductive technology programs (Pitrolo, 1996).

In Anglo-Saxon law the review of laws occurs following legislative enactment; whereas, under French law a constitutional review is held before promulgation of laws, regulations, or administrative orders (O'Brien, 1998, p. 528). Therefore a different process led to the enactment of France's comprehensive legislation as compared to the United Kingdom.

The French bioethics debates and legislation of 1994. Ball's (2000) discussion of the 1994 French bioethics debates identifies a reemergence of enlightenment ideas. France's 1789 Declaration of the Rights of Man and Citizen was used to assess the constitutionality of the proposed law. The philosophy of Rousseau was used to support the proposed restriction on access to medically assisted procreation. The close connection between the well-being of family and society is stressed. The 1994 legislation adopted by the French National Assembly limited access to artificial insemination and in vitro fertilization to sterile, heterosexual couples of procreative age residing together at least two years. Dreifuss-Netter (1996) compares the handling of adoption and medically

assisted procreation (MAP) under French law. Central to both is the requirement for a conventional family. If two people wish to adopt a child together, they must be husband and wife; whereas the MAP requirement is a stable relationship of two years. In some ways adoption regulations are less restrictive. The application of a single adult to adopt is accepted in many administrative courts (p. 96).

The United Kingdom's Human Fertilisation and Embryology Act (HFEA). Savas and Treece (1998) examined British fertility clinics to determine the way guidelines were being interpreted and if they need to be strengthened. A questionnaire was distributed to all United Kingdom licensed clinics. The survey findings revealed that individual clinics used broad discretion in their interpretations of the Code of Practice. It appears to be this lack of consistency which has contributed to many of the criticisms and complaints. The British system of regulating fertility treatment and embryo research is described by Brazier (1999) as founded on consensus. The strength is the positive working relationship of clinicians, scientists, and regulators. The price of this consensus is the lack of a coherent philosophy or conceptual depth. The balance between public policy and individual rights, and the problems of conflicting rights are never adequately addressed; thus continuous debate under various disguises goes on. The HFEA permits three different licenses of otherwise prohibited activities: 1.) provision of infertility treatment services, 2.) execution of embryo research, and 3.) storage of embryos and gametes. Section 13(5) is the only subsection of the Act which directly speaks to access to treatment. The quality of the patients is considered under this section but the content is

imprecise (pp.170, 174).

### Child-oriented versus Adult-oriented Perspective

The nation-states of the United Kingdom and France both have a comprehensive regulatory approach but they differ in perspective. Latham's (1998) comparative review identifies French law as slanted toward the interests of the child whereas the United Kingdom law bends toward parents. The Netherlands is described as a regulated but liberal perspective by TeBraake (2000). Reproduction is considered part of an individual's private life and the right to privacy is protected under the Dutch Constitution as well as by the European Convention for the Protection of Human Rights. The Netherlands operates under a collection of Acts or laws and regulations rather than striving to adopt a comprehensive law such as the British authority. The regulations are largely based on risk assessment factors, e.g., the age of females receiving treatment is restricted after the early forties due to the complications associated with increasing age (pp.96, 97, 106). Germany is widely viewed as the more stringent response. According to Pitrolo (1996) Germany's approach is inspired by the mandate of the German Constitution to protect human rights from violation by individuals. The identified rights are the special protection of the family, self determination, physical integrity, and human dignity. The restrictions, which have been instituted on the new technologies have been characterized as a backlash growing out of the second world war experience, particularly the atrocities committed by Nazi physicians (pp.192-193).

Eriksson (2000) identifies two perspectives, similar to Latham, applied to the

practice of reproductive technologies: child-oriented and parent-oriented. International law so far has failed to reconcile these opposing aspects. The child-oriented perspective stresses the danger of objectification of the child. Legislation from the child's viewpoint is designed to protect the interests of the child, such as the right to have a male and female parent or to know one's genetic origin. Eriksson believes legislative justification often comes from "the Kantian understanding of human dignity and the intrinsic value of human beings, i.e., that humanity ought to be considered as an end and never as a mere means" (p.191). The alternative view is influenced by the idea that all individuals should have an equal opportunity to become parents.

#### Surrogate Motherhood

CAHBI, the AD Hoc Committee of Experts on Progress in Biomedical Sciences, (Council of Europe, 1989) asserts "that procreation must not become the object of commercial transaction" but "permits states to allow surrogacy in exceptional cases defined by their national law" (p.30). Shuster (1992) stresses that of all the MAP procedures involving a third party, gestational surrogacy is the most genetically appealing because it enables the child to receive the genes of both intended parents. The surrogate is easily depersonalized as an incubator thus causing exploitation to become a concern. CAHBI (Council of Europe, 1989) states that determination of maternity should be based upon giving birth and not the origin of ova or genetics. Principle 15 says "the surrogate mother has the choice at birth of keeping the child" (p. 39). Rae's (1994) comment on the definition of motherhood in surrogate motherhood asserts that the

gestational relationship is not a service or a commodity. The fetus is a part of the woman's body thus establishing her motherhood irregardless of the source of egg or sperm. The bond between surrogate and infant is strong; therefore, the surrogate mother grieves over the loss in the same way a birth mother grieves when her child is placed for adoption or a mother mourns when miscarriage or stillbirth occurs.

The British Medical Association (BMA) (1996) "acknowledges surrogacy as a reproductive option of the last resort, in which the interests of the potential child must be paramount" (p. 2). The BMA's publication advises that many of the fertility clinics rely upon ethics committees to review ethical dilemmas such as the consideration of surrogacy services. The BMA sees the committees as helpful resources. The risk of postnatal depression is something the surrogate mother needs to be aware of plus a risk of relapse with any subsequent delivery. This vulnerability for mothers during the first year following a birth is between 10-20 percent (p. 46). The problems experienced by the family of the surrogate must be acknowledged. The heterosexual couples must refrain from unprotected sexual activity during the time the surrogate is attempting to conceive. The surrogate's spouse must deal with his feelings about his wife carrying another man's child. The intended parents must live with the possibility that the surrogate will not follow through with relinquishment. Breast feeding is most often problematic since it does have advantages for an infant's health. The intended mother may be able to establish breast feeding. A small number of women develop post-adoptive depression due to concerns about their own short comings (p. 49). The Health Ministers of the

United Kingdom requested a review of the current arrangements for payments and regulation of surrogacy in 1997. The review team was composed of Brazier, Campbell, and Golombok (1998). Their report presented to Parliament on October 1998 recommended that surrogacy arrangements be unenforceable in the courts, that only defined levels of expenses be paid surrogates, and that the welfare of the child be granted paramount consideration. It was further recommended that a Code of Practice be drawn up by the Department of Health in consultation with other departments (pp. 29-73).

Some exploratory research to facilitate understanding of the human experience tied to the provision of medically assisted procreation has been carried out. Thornton, McNamara, and Montague (1994) used field research to explore preferences for *genetic* versus *birth* mother in gestational surrogacy circumstances. The goal was to acquire a better idea regarding community opinion related to the issues faced by judges in UK courts. Researchers selected two convenience samples of fifty females and fifty males. The subjects were asked to imagine that they were infertile and they, or their spouse, had only one pregnancy. They were asked to choose whether they would rather be pregnant using donor ovum or have a surrogate give birth to their own genetic child? In either case the male in the couple would be the genetic father. Findings revealed both males and females held the role of genetic and birth mothers of almost equal importance.

Krim's (1996) analysis of laws regulating surrogacy indicate the restrictions and bans have opened a global market for surrogacy services and a developing need for an international code of ethics. For example, Krim suggests a surrogacy program for



couples around the world is operated by the Infertility Center of America in Indianapolis, Indiana. International issues are expected to arise when genetic parents in one nation are in conflict with surrogates in another nation. Germany and Sweden were identified by Krim and others to have generally restrictive codes. Hundreds of Swedish women seek treatment in Britain and Denmark each year due to strict laws. Australia was an early developer of in vitro fertilization programs in 1984, and the first to legislate regulations. Australia's state of Victoria placed a ban on surrogacy including criminal penalties, and prohibited gays from gaining access to in vitro fertilization. In 1991 Israel appointed a committee of experts to reevaluate its fertility laws. A final report released in July 1994 recommended legalization of surrogate motherhood; but restricting payment to pregnancy-related expenses. Legislation followed and Israel became the first nation to pass legislation adopting surrogacy (Krim, 1996). Eriksson (2000) points out that although most nations have not passed legislation regarding surrogacy, the practice exists. Traditional surrogate motherhood is mentioned as far back as the story of Sara, Abraham, and Hagar in the Old Testament in the Bible.

#### Post-Mortem Parenthood

Possibly the most controversial aspect of medically assisted procreation is post-mortem parenthood. Private sperm banks were set up in the 1970s to enable men who anticipated either a vasectomy or cancer treatment to cryopreserve their sperm with the intention of using it later. Shuster (1999, Spring) defines posthumous reproduction as a "deliberate decision to produce a child after one, or both, would-be parents die"(p. 402).

The practice generally making it possible for a deceased man to parent posthumously conceived children is artificial insemination. Post-mortem parenthood may entail a man with the help of a surrogate using a frozen embryo. A number of procedures may be used along with cryopreservation to produce a posthumously conceived child. The fate of disputed embryos includes control or custody of embryos, rights to initiate a pregnancy, and intestate, inheritance, and succession issues.

The number of legal battles increased in relationship to the technological advances. Sutton (1999) divides issues arising from posthumously conceived children into two categories: rights prior to gestation, i.e., rights to the reproductive genetic material, and rights post gestation, e.g., right to inherit, custody, and similar issues. Property rights in the human body is the center of the controversy. The question of whether or not gametes can be sold or bequeathed relates to their status as property. The underlying questions recognized by Sutton include: "Is (Was) there a property right?, What are the implications for recognizing a right?, and if there are multiple conflicting rights, Who has the superior right?" (p. 860). One perspective views treating gametes as property as demeaning human life. These individuals believe this is oppressive for people in poor financial circumstances. The opposite perspective says free human beings possess dominion over their own bodies and can do as they desire. The middle perspective believes gametes are never utterly property, the intent must be clear and the circumstances appropriate.

The posthumously conceived child's legitimacy status is a central problem.

Complex inheritance problems involve: can the posthumously conceived child be the decedent's heir; the ability of other children or heirs to contest the birth or status of a posthumously conceived child because it delays distribution of the estate or reduces their portion; whether the status of posthumously conceived child prevents inheritance rights from other members of the decedent's family; and do the decedent's family members inherit from the posthumously conceived child. Shuster (1999), Sutton (1999), Lorio (1996), and others point to the 1984 French case of *Parpalaix v. CECOS*, a government-run sperm bank as the first significant judicial review pertaining to the posthumously conceived child. Twenty-six year old Alain Parpalaix who was dying of testicular cancer deposited sperm in CECOS. He was living with Corinne, whom he later married, two days prior to his death. Following Alain's death, Corinne requested the sperm deposit from CECOS. Her request was denied due their policy not to release sperm to a widow for the purpose of posthumous conception, absent express instructions. No instructions had been left by Alain. The wife and parents of Alain contested CECOS' action in court. Their claim for the right to his sperm was based on their status as Alain's sole living heirs. The Parpalaixs' argued that the sperm was a "movable object" under French Civil Code Article 1939; therefore, it was being held in trust in the sperm bank and could be retrieved, if the heirs were in agreement. The court awarded the sperm to Corinne; however the basis for the decision was intent not property theory. The court finding was based on the theory that "Alain's unequivocal intention for Corinne to be artificially inseminated with his sperm was proven by the testimony of his parents and widow"

(Sutton, 1999, p. 895).

Shuster (1999) argues that although posthumous conception cannot harm children, it can wrong them by making genetic parent-child relationships impossible. Further, it denies children the right to be born with two living parents. Shuster asserts that the gift of sperm places undue pressure on women due to the psychological, cultural, and societal pressure to be mothers that women experience. As a result of the opinion in *Parpalaix v. CECOS*, the French sperm bank adopted gamete policy guidelines. Later another cancer patient, Michel G., deposited his sperm with CECOS. Michel G.'s signature was added to an agreement indicating that his sperm would be used only with his consent and in his presence. Following Michel's death, his wife Claire requested release of the sperm and was denied. When they denied her the use of Michel's sperm, Claire argued that CECOS deprived her of her fundamental right to procreate. The Tribunal de Grande Instance de Toulouse found that an obligation to do everything technologically feasible to create a pregnancy is not a requirement. The right to procreate does not indicate an individual's right to a child. CECOS had no obligation to honor the request due the advance notice found in the signed agreement. The French court in *Claire G.* identified the social and moral issues raised by posthumous conception to extend beyond the interests of progenitors to considerations of the interests and welfare of children that result from the practice. The court did not support the making of what has been referred to as souvenir babies (pp. 405-407).

Current French law requires both members of the couple be living. Meteteau

(1997) refers to the Code of Public Health for the procedure followed for frozen embryos upon the death of one spouse. The surviving member is contacted in writing on whether the conserved embryos may be received by another couple. If permission is refused or no other couple wants the embryo and the embryo has been in storage five years, “destruction is the only solution” (p. 202).

Bennett’s (1999) review of Australian cases examines the rights and property based conceptualization of autonomy as pertains to medically assisted procreation. Bennett concludes that an understanding of autonomy interests acquires increased clarity when considered in a relational context. The Atherton (1999) comment on inheritance law uses the 1996 Australian case *Estate of K* (Tasmania) to illustrate the struggle between issues of equality for offspring born outside of marriage and the practicalities of estate administration. In April 1995 “Mr. K” died intestate leaving his wife, three children from a former marriage, a child born through in vitro fertilization followed by implantation of the frozen embryo and two additional embryos still frozen. All three embryos, including the child born during the father’s lifetime, resulted from the fertilization of his wife’s ova and his sperm. The widow planned to proceed with the implantation of the remaining two embryos. In *Estate of K* the Public Trustee requested court assistance to resolve the legal question of whether the frozen embryos should be considered as issue of the deceased and therefore his children when born; thus requiring a portion of the estate to be held in trust. The policy decision in Tasmania was in favor of the frozen embryos. Atherton points out that the case decision was open for appeal but

no appeal was sought (pp. 155-161).

The interpretation of United Kingdom law is impacted by the overarching authority of European law. McLean (1999) points out that this fact was highlighted when the United Kingdom's Court of Appeal heard the case, *R. v. Human Fertilisation and Embryology Authority, ex parte Diane Blood*. In 1995, Mr. Blood contracted meningitis, slipped into a coma, and subsequently died. Mrs. Blood had the physicians remove sperm samples from her moribund husband and placed the sperm in a sperm bank. Mr. Blood's required written consent could not be obtained. Mrs. Blood moved to Belgium after her husband's death. Diane Blood later requested that the sperm be exported to Belgium where she planned to be artificially inseminated. The Human Fertilisation and Embryology Authority (HFEA) denied the request based upon the lack of written approval by Mr. Blood. The Court of Appeal authorized Mrs. Blood to attempt insemination in another European nation. Belgium does not require written consent for sperm storage and use. The Court of Appeal ruled that HFEA failed to give proper consideration to European law, and it considered the case to be a one-of-a-kind case that would never arise again. Articles 59 and 60 of the Treaty establishing the European Community provide for free movement within Europe to receive services (pp. 325-336). Hervey (1998) cites the Court of Appeal confirmation of the unlawful nature of the action taken by the Infertility Research Trust to take and store Mr. Blood's sperm. The European Court of Justice has ruled in other related cases that privately remunerated medical services fall within treaty provisions. Douglas (1997) notes the Court of Appeal

ruled that the HFE Authority must reconsider Mrs. Blood's case thus prompting the government to appoint Professor Sheila McLean, an expert in medical law and ethics, to conduct a review. The government requested advice on how to support the HFEA position for "patient autonomy and informed consent" and its place as the cornerstone of the law (p. 196). McLean's (1998, July) review states under *Consent and the Common Law*: "The necessity doctrine permits clinicians to act without consent where the patient is unable to give it for the procedure but only within certain constraints" (p. 4).

Warberg (1997) points to Section 2-3 of Norway's Biotechnology Act as stating: "Before commencement of treatment the woman and her husband or partner must have given their consent in writing" (pp. 197-8). Since the physician is required to check the written statement at the time of treatment this establishes both parties are alive. The requirement of marriage would further be dissolved if one spouse was deceased.

Warberg concluded based upon these facts that the Norwegian Supreme Court had a basis to deny any requests for post mortem insemination (pp. 197-8).

#### Aspects of Human Rights in MAP Practice

McLean's (1999) perspective on the UK identifies human rights language to be used extensively for the justification of assisted conception technologies, specifically "a common theme ... is a liberty right...a right to be free from pressure, duress or control - not a right to require action." (p. 323) This is referred to as a "a right not to be interfered with" (p.323). McLean stresses that the law protects individuals able to reproduce from loss of this ability, but, it falls short of requiring positive assistance to reproduce

irregardless of whether assistance is competently requested. The Human Fertilisation and Embryology Act 1990 provides thorough regulation to ensure the handling of embryos and gametes comply with “best practice” procedures.

The simple procedure of artificial insemination constitutes a human rights issue if denied, asserts Eriksson (2000). Due to wide spread practice, Eriksson interprets the denial of homologous insemination services (spouse or cohabitant’s sperm) to be an “infringement of Article 12 of the European Convention on Human Rights” (p. 196). Nations with populations having Roman Catholic majorities tend to approach heterologous insemination (use of a sperm donor) conservatively. The practice becomes controversial when single women or lesbian couples are to be considered. Eriksson points out that the legislation on registered or domestic partnerships which has been enacted in several European nations does not use the term marriage. The same or equal benefits are not given to homosexuals as is given to heterosexual married couples. Denmark, considered liberal, does not permit joint adoption from a third party or step-parent adoption by homosexual couples. The 1994 Norwegian Act Relating to the Application of Biotechnology in Medicine excludes women in registered lesbian partnerships from treatment for assisted reproduction. Iceland has comparable regulation. Sweden’s *Registered Partnership Act*, January 1995, corresponds to marriage except no adoptions are permitted either individually or as a couple not even next-of-kin adoption, and access to artificial insemination or other assisted conception practices are prohibited (pp. 230-1). The single women and lesbians who are excluded from medically



assisted procreation services in most European Union nations may travel to Spain or the private clinics of Denmark for services. Differences between jurisdictions are found in Australia and New Zealand. Skene's (2000) review of these two nations reveals differing regulatory practices exist in the Australian states, e.g., single and gay individuals are not excluded from receiving treatment in medically assisted procreation programs in New South Wales but they are barred in other Australian states where regulatory laws are enacted (p. 32).

#### Treatment of Postmenopausal Women

Godoy (1998) points to cryopreservation to increase the number of older, postmenopausal women able to not only give birth but possibly use their own eggs. The question is whether to recognize a biological limit or to view procreation as an indefinite, fundamental right. Cryopreservation is a procedure by which eggs, sperm, or embryos are frozen in liquid nitrogen at a temperature of negative 195 degrees centigrade. The Australian, Zoe Leyland, born in 1984 was the first birth resulting from a cryopreserved embryo. Germany and Spain prohibit the freezing of embryos thus avoiding the many complex problems that result. In contrast the UK's HFEA mandates the destruction of unclaimed embryos after ten years.

The post-menopausal female or couple is a population clearly excluded by many European nation-states, but not all. This will probably become an even greater issue in societies where improved health care and quality of living has extended the life expectancy. Purviance (1995) advocates for the rights of the older childless couple. The

basis for the claim of postmenopausal women to infertility services is the formal principle of justice, which says similar treatment for similar cases is appropriate. It is argued that an age-based criteria for denial of services is less appropriate than decisions based on the health of the patient. The extension of treatment to postmenopausal women is no different than many younger patients when all are childless. Purviance argues that ethical justification exists for any couple where at least one person has no offspring.

#### Donor Anonymity versus Right to Know One's Genetic Origin

A basic area of disagreement or controversy is the donation of gametes or embryos and the child's right to personal identity. The dilemma is confidentiality and secrecy versus the right to know one's genetic or biological origin. Sweden, Germany, and Austria stress the child's right to know his origin; whereas, donor anonymity is practiced in several nations, e.g., Norway and Spain. The German Constitutional Court had adopted children in mind when the right to know one's own origins was recognized as a guaranteed right by Article 2, paragraph 1 of the Basic Law (Seibert, 1994). Seibert asserts that an adopted child's identity is significantly linked to biological parents and this finding is supported by the German law. This same law is interpreted as upholding the significance of the genetic relationship between a child and a donor. This law makes the anonymous donation of sperm, eggs, or embryos unconstitutional (pp. 27-28). A need for a medical history is another fact in support of maintaining donor records. The CAHBI recognized the lack of consensus pertaining to donor disclosure. The majority saw donor anonymity to be necessary to ensure integration of the child and family. A

minority opposed the child being deprived of knowledge about his/her genetic parents. *Human Artificial Procreation* (Council of Europe, 1989) contains a recommendation for the anonymous handling of donor information by the physicians and staff. CAHBI included the option for nations to adopt legislation that provides for offspring to receive information about their origin and/or the donor when they come of age (pp. 28, 38).

Griffith (1997) identifies the New Zealand lawmakers as failing to provide for adequate gamete donor records in their haste to install consenting husbands as legal fathers (p. 209A). Both Australia and New Zealand (Skene, 2000) are regulated by non-legislative guidelines and applicable principles of common law in all jurisdictions. Legislation to clarify the legal status of children born as the result of practices involving third party donors is found in all jurisdictions. More recent legislation in Victoria provides for children born from donor gametes to obtain identifying information on the donor when they become age eighteen. Skene identifies Victoria's legislation as moving ahead of other areas (pp. 44-45).

#### The Impact of the Abortion Issue

Russia and related countries. Yakovlevitch (1996) identifies the re-legalization of abortion for non-medical reasons, in 1955 in the Soviet Union, to be the start of an abortion industry. Abortion was anchored in the Russian law in 1993. The Basic Law of the Russian Federation on the Health Care of Citizens permits abortion up to 22 weeks gestation according to the mother's decision, and thereafter as the mother desires for medical indications. Abortion became an everyday matter. Sociologists report that a

Russian woman undergoes an average of four or five abortions and some women have eight to twelve abortions. One third of an average Russian gynaecologist's work time involves performing abortions. Yakovlevitch suggests the high abortion rate is directly related to Russia's high percentage of tubal infertility (31.4%). The first decree regulating artificial human procreation issued by the Ministry of Health of the former USSR was Order No. 669 of May 13, 1987. The act began the service in seven cities in Russia, Ukraine, Georgia, and Moldova. The first Russian test-tube baby was born in Moscow in 1986 (pp. 267- 270). In July 1993 the Russian Federation adopted legislation on the protection of the health of citizens. The Section dealing with artificial insemination and embryo implantation states that all women of the age of majority and of child-bearing age are entitled to the services (Fluss, 1995). Extensive use of artificial insemination and in vitro fertilization was permitted by Order No. 301 adopted December of 1993. Yakovlevitch (1996) reports 45 centers using artificial insemination procedures were active in Russia in 1996 (pp. 270-271).

Poland's anti-abortion law and MAP practices. Gunning (1999) identified Poland's 1993 anti-abortion law to make a significant difference in the legal status of the embryo. Article 1 of this Act establishes the right to life as inherent for every human being at the point of conception. Poland's Penal Code was amended to prohibit any procedures other than those invented to protect the life of the conceived child or its mothers life and health. In Poland there is prohibition of all non-therapeutic experimentation on human fetuses. In addition, Polish citizens, who participate in

research in another nation where it is lawful, may be subject to criminal responsibility if death or injury of the conceived child results (Penal Code articles 114 and 116). The legislation has resulted in withdrawal of national insurance coverage for fertility related procedures, a smaller number of hospitals providing in vitro fertilization services, and the reduced availability of assisted procreation services (p. 166). Nielsen (1996) classifies Poland as unregulated either in regard to the medical practice of medically assisted procreation or through family code provisions regulating problems of affiliation or child's legal status (pp. 309-310). There are no specific laws to address medically assisted conception but closely related prohibitions on research plus strict abortion law function to repress activity in this area.

### The Status of the Human Embryo

Irregardless of the circumstances of conception, Merchant (1996) says the Council of Europe and UNESCO are both working towards the formulation of a European judicial framework inspired by French law. The development of an international legal framework is much more difficult to accomplish due to economic parameters and differing national perspectives (p. 12). McCormick (1999) focuses on ethical issues, of which the status or philosophical definition of embryo is central. There are three moral perspectives. One is belief that the embryo is a person. The opposite view is the non-personhood of the embryo; thus opening up a full range of scientific or therapeutic protocols to be appropriately applied. The middle and most widely supported perspective sees great respect due the embryo because of its potential and symbolic

meaning but not the full respect given to human beings (p. 275). Gunning (1999) reports the Vatican's position to be that human embryos are human beings with a personal individuality from the point when they are formed. The creation of embryos for research or artificial fertilization techniques such as in vitro fertilization is considered exploitation or possibly elimination of human individuals (p. 166). CAHBI (Council of Europe, 1989) acknowledges the widely divided opinions on the legal status of the embryo. The Irish Constitution and a German Federal Court decision were found to be the only national legal texts that dealt with the issue. It was agreed that human embryos must in all circumstances be treated "with the respect due to human dignity" (p. 11).

#### Some Examples of the Lack of MAP Regulatory Laws

The Italian controversy. The lack of statutory regulation in Italy, the only European Union nation with a Catholic political party, has been attributed to conflict with traditional church authority in matters of this subject area. According to Lorio (1999) the religious circumstances prompted the medical profession in Italy to take actions to achieve self-regulation. The Italian Medical Association approved a new Code of Medical Deontology (Federazione Italiana degli Ordini Dei Medici) in 1995 prohibiting the following specific procedures: 1.) artificial insemination outside of a stable heterosexual relationship; 2.) artificial insemination on a woman over the age of fifty; 3.) artificial insemination after the death of a partner; 4.) surrogacy; and 5.) commercial or industrial exploitation of gametes and embryos (p. 251). Ferrando (1996) suggests the Medical Association took these measures in hopes of stimulating the Italian Parliament to

legislate on this issue. The Italian National Committee for Bioethics recognizes the existence of an ethical plurality. The members wish to confirm a pluralistic methodology respectful of a variety of moral positions (pp. 255-266). CAHBI (Council of Europe, 1989) includes support for the right of independent (or non-government) physicians to “refuse to administer such techniques on the grounds of conscience. A physician in private practice may refuse to give such treatment at any time” (p. 21).

Greece: A nation without regulatory MAP legislation. Dalla-Vorgia (1996) says insemination by spouse or donor has been performed for over twenty years in Greece. The first sperm bank was created in Athens in 1973. In vitro fertilization has been practiced since the 1980s. The pertinent legislation passed in Greece includes Law 2071/1992 on modernization of the health system. This law authorizes the establishment of artificial fertilization units. Presidential Decree No. 456/1984, Section 1463, Subsection 2 of the Civil Law states: “the relationship of the person with his mother and her relatives is established by birth” and “the relationship of the person with his father is established by marriage or affiliation of father to the mother either voluntarily or judicial” (pp. 279-286). Insemination of the mother by donated sperm does not alter this relationship. Surrogacy is considered against good mores. Sex selection is not permitted as per the Central Council for Health unless a serious hereditary disease is involved. The Greeks are a homogeneous population. The common religion of Greek Orthodoxy is widely shared by the population. In addition the Greek Orthodox Church leaves most decisions up to individuals (pp. 279-286).

The Canadian experience. In Canada the Royal Commission on New Reproductive Technologies was created in 1989 to recommend solutions to the controversy surrounding assisted conception. Young and Wasunna's (1998) critique identifies the 1993 two-volume report *Proceed With Care* to continue to be the heart of the government's response. Recommendations for legislating criminal sanctions and the establishment of a regulatory and licensing body are included. An interim voluntary moratorium was called for in July 1995 concerning nine technologies. Bill C-47 was introduced and hearings held; however, the calling of a federal election caused the bill to die in process on April 28, 1997 (pp. 239-240). Healy's (1995) review of the pending Canadian law addresses the difficulty associated with amending the federal criminal code to prohibit specific practices. The matter of criminal investigation may require special knowledge and skills. Some believe restraint should be practiced when reliance upon criminal sanction is considered (p. 944). The Canadian regulatory framework is not yet finalized after more than a decade of debate. Young's (1998) essay describes the national character of Canada as collectivist or communitarian in comparison to its individualistic or rights-centered neighbor, the United States. The U.S. is a classic liberal democracy whereas Canada is a social democracy. Canadians tend to be amenable to state intervention but the enthusiasm for the market common in the U.S. is gaining in its influence (pp. 45-46, 82-83).



## International Bio-ethics Law

Council of Europe activities. Lenoir's (1999) review of legislation related to bioethical issues pointed to an increase over the past twenty years, particularly in Europe. The signing of the Council of Europe's Convention for the Protection of Human Rights and Dignity of the Human Being with Regard to the Application of Biology and Medicine (Treaty 164) on April 4, 1997 is a major accomplishment in international bio-ethics law (Lenoir, 1999). The bioethical principles reflect the essence of the general principles of the European Convention on Human Rights (ECHR). Some of the difficulties include the fact Germany has concerns that the provisions on research involving persons with mental disorders fail to be protective enough. Also neither Belgium nor the United Kingdom are satisfied with the provisions prohibiting any creation of embryos for the purpose of research. In the UK the creation of embryos for research by cell nucleus replacement could be permitted if the research project was licensed by the UK Human Fertilisation and Embryology Authority (pp. 540-543). Abbing (1998) refers to the Treaty 164 as a health law convention. The need for an enforcement mechanism to accompany international legislation is pointed out. The European Court of Human Rights is called upon to hear complaints related to health. Abbing suggests that a "European standard" will develop through the ECHR case law. The work of this Convention, i.e., Treaty 164, and others like it promote an international professional consensus for standards of safe and good quality practice. Although its impact is limited to one region, it serves as a model for other areas of the globe (pp. 377-

385). Among other issues Treaty 164 prohibits medically assisted sex selection unless the procedure is relied upon to avoid hereditary disease linked to the sex of the offspring. Faust's (2000) review of laws regulating sex selection points out that twenty-two countries had signed off on the Convention as of July 1997.

Human cloning. CAHBI (Council of Europe, 1989) includes a recommendation against the creation of identical human being either by cloning or other methods (p. 40).

Rose (1999) points out that cloning is more than an option for infertile couples. Through cloning procedures a genetically related child could be created for new groups in our society not previously possible, i.e., non-heterosexual couples. Lesbian couples could through cloning conceive an offspring to whom both shared a genetic bond. Single women could through cloning conceive a child without donor insemination. More than assisted reproductive technologies, cloning would be a destabilizing factor for families and introduce complex parentage questions (pp. 1142, 1155).

Bell's (1999) review of national reports related to cloning points to influence from the genetic determinism perspective, i.e., the idea that genetic identity is equated with personal identity. Scientific consensus recognizes that genes contribute to behaviors and traits but in interaction with the environmental and social affects. The French Committee argued that cloned individuals would know they were clones and that other people would know they were clones and for this reason cloned individuals would have a lower status. Cloning was believed to possibly result in new types of discrimination (p.214). Warren (1998) suggests cloning is incapable of being an instrument for

immortality because memory is not replicated. Since cloning does not produce carbon copies, it is misguided to pursue cloning as a way to recreate loved-ones or people admired, or engage in self-cloning (p. 451). Cloning is believed by others to pose a threat to the individual sense of uniqueness. The concept human dignity is central to the discussion on human cloning. Cantrell (1998) identifies the Vatican as one of the first to publicly condemn cloning. Other opposition to cloning came from the World Health Organization, and the World Medical Association. It also generated discussion at the 1997 Summit of the Eight (world leaders) in Denver. Cloning was the subject of emergency debate at the European Parliament on March 11, 1997 (p. 73).

The Council of Europe's Convention on Human Rights and Biomedicine added another Protocol to address cloning techniques on human beings on January 12, 1999 (Lenoir, 1999). The Protocol on reproductive cloning states: "any intervention seeking to create a human being genetically identical to another human being, whether living or dead, is prohibited" (Article 1 #1). This statement is contained within Order No. 534 (1997) of the Council of Europe and Treaty No. 168. The issue of whether this is applicable to embryo research or is limited to cloning carried out for other purposes, e.g., procreation within families, is left to the state governments. It is indicated in the explanatory report to the Protocol that domestic law is to "define the scope of the expression *human being*" (Lenoir, 1999, pp. 543-545).

The Human Genome Declaration of the United Nations. United Nations Educational, Scientific, and Cultural Organization (UNESCO), a specialized agency of

the United Nations, that had a key role in the elaboration and approval of the Human Genome Declaration. UNESCO's Constitution requires the agency to promote collaboration among the nations through education, science and culture. The genome declaration was developed over a four year period by an independent body within UNESCO known as the International Bioethics Committee. The document was first approved by the UNESCO General Conference, and later by the U.N. General Assembly. The Human Genome Declaration follows a different approach from the new European rules on bioethics. The objective of the Human Genome Declaration is not to govern specific practices; but instead to identify universally accepted ethical principles. The goal is provision of guiding principles for medical practitioners, researchers, and both public and private decision-makers in the human genetics fields. The central principle of the Human Genome Declaration is human dignity, a dignity which is inherent to all members of the human family. Human dignity transcends the individual and serves as the source of individuals' rights and freedoms. The Human Genome Declaration's (UNESCO, 1997) Article 11 repudiates the "reproductive cloning of human beings" as "contrary to human dignity" (p. 5). There is now general recognition that everything scientific is not necessarily ethical. The need for external control of research has been acknowledged.

Lenoir (1999) stresses that the social, economic, and political implications of research which reveal scientific activity not to be completely neutral; therefore, control must not be left to science or medicine. Bioethics involves not just human rights, but

significant economic interests. The pluralist, multi-disciplinary composition of the bioethics committee model facilitates open problem solving and planning. Article 24 of the Human Genome Declaration identifies the International Bioethics Committee as a forum to facilitate the on-going study and review of pertinent technologies.

This chapter reviewed the literature in the field, including the theoretical issues. The next chapter, the third chapter, is a review of the study methods and variables.

## CHAPTER III.

### STUDY METHODS

This chapter describes the data process to meet objective one and defines the study variables to meet objective two. Clarification is supplied to support the placement of the variables into categories. The rationale for this process is set forth as well as the basis for the measures. Figures were constructed to facilitate description of data details. The secondary purpose of the chapter is to identify the approach used to analyze the data and the reason for its selection.

#### Data Collection

To meet the first objective copies of legislation and information on regulatory policy were acquired through contacts with the embassy, the minister of health, or the office of the prime minister or president in each country. In general the Ministry of Health in the various nations provided the most assistance. In some countries, such as Denmark and Russia, English translations were provided. Other nations such as Austria, Germany, and Spain sent copies of their legislation in their native language, which required translation.

In some circumstances where no response to inquiries was received, the American embassy often provided the name of a suitable contact. The American Embassy in Budapest was especially helpful. Officials at that embassy translated and summarized the content of a recent amendment on surrogacy. The American Embassy in Luxembourg obtained an essay on current legal opinion from the Duchy. Since Luxembourg conducts legal affairs in French it had to be translated. The World Health Organization's International Digest of Health

Legislation was a source of some partial translations. Translation services were obtained through the assistance of the University of North Texas Foreign Language Department.

Many of the nations such as the Netherlands, Australia, and New Zealand supplied copies of government reports, ethical guidelines, and other material. New Zealand furnished copies of two drafts of competing legislation proposals. Other nations were less responsive. This was due to various reasons such as the cost of handling correspondence, the controversial nature of the issue, or language limitations. In these situations the American Embassy staff, and other knowledgeable sources, recommended physicians heading programs, legal consultants, and university professors known to be experts on the subject matter. All sources of information have contributed to a full understanding of current practice. Some important issues were clarified through a field trip by the researcher to the U.S. Library of Congress in Washington D.C., which included consultations with the Library of Congress Foreign Law Specialists. This involved contacts with the staff handling Italy, Turkey, and Greece.

Another field research trip to the United Kingdom, specifically Scotland, uncovered extensive information in the Law and Europa Library at Edinburgh University and the Taylor Law Library at Aberdeen University. Copies of all pertinent United Kingdom legislation including amendments and a variety of special reports were obtained. The Edinburgh University site was the source of the significant overview of work completed by CAHBI (Ad Hoc Committee of Experts on Progress in Biomedical Sciences) during the period of 1985 to 1987. This work *Human Artificial Procreation* (Council of Europe, 1989) established the lack of a harmonized regulatory consensus.

Another field research trip to France to the Council of Europe in Strasbourg and the UNESCO Library in Paris uncovered more information. These included treaty documents of the Council of Europe (1997, 1998), UNESCO documents, and United Nations declarations. Among the many documents from the Council of Europe is an earlier study on legislative status. Council of Europe's (1998, June) study document was supplied by the Directorate General of Legal Affairs. Using all these sources a complete description of each nation-state's MAP regulatory status was possible and is presented in the next or fourth chapter.

## Research Variables

### Dependent Variables

Legislative status. The first measure of the dependent variable placed all the nation-states in the category that most accurately describes their present status as either: 0.) unregulated; 1.) legislative action pending, partial regulatory structure; 2.) alternative regulatory structure; ordinances/guidelines or law addresses some aspects not all; or 3.) federal legislation on MAP passed. The category for each nation is presented in Figure 2.

The basis for this categorization is as follows: The "group 0" nation-states do not have regulatory law or ordinances in place. Seven nations are in this group. Some small measures may have been accomplished, and most of these nations are acting in some way to address this issue. For example, Greece and Romania have signed, ratified, and placed into force treaty no.164 of the Council of Europe pertaining to human rights and biomedicine.

The "group 1" nation-states have bills or draft legislation pending. Four nations are in this group. In Canada, Bill C-47 failed to finish the legislative process due to the call of a



federal election. However Canada's 1995 moratorium is still in effect as well as support for the legislation. The nations in this group also have partial laws in place.

The "group 2" nation-states have alternative regulatory schemes that vary a great deal. Eight nations are in this group. This diversity includes Ireland which has national guidelines and Australia which has federal regulation of research and ethical guidelines but only states have enacted legislation so far. Belgium law only addresses treatment standards and quality of care only. Lithuania's health minister has signed an administrative order restricting MAP practices. Bulgarian law is limited to artificial insemination. Slovakia also has an old law limited to artificial insemination. The Czech Republic has an old law on insemination, some public health standards, and a medical society code for regulating centers. Luxembourg law protects the legitimacy of offspring when conceived using insemination, and an official opinion on the ethics of MAP is written. The "group 3" nation-states have adopted specific regulatory laws. This is the largest group with sixteen nations. Each nation's federal MAP legislation is listed in Figure 2.

The regulation of the practice of medically assisted procreation (MAP) in each country was also measured a part from the classification of the legislative status. This approach was influenced by the format of the Jones and Cohen (1999) survey reported in a special supplement of the journal *Fertility and Sterility*. The guidelines and legislation on December 31, 1997 of thirty-eight nations, some European, is described for the medical/health professions. The set of eight dependent variables selected for this study entail access to treatment, practices allowed or prohibited, and the handling of donors. The issue of access to

treatment pertains to couples who use their own gametes as well as couples in need of a donor. A restriction such as maximum age is sometimes set for everyone seeking treatment. The complexity of the practice increases when a third-party is necessary. Donor insemination (DI) is the more simple procedure and longest practiced. Ovum donation is a more recent practice, and it involves a more difficult procedure for the donor. Embryo donation is controversial and complex. Surrogacy goes beyond donation, becoming truly a matter of collaborative conception. Most references to surrogacy pertain to gestational surrogacy, which is used to surmount the inability to carry a pregnancy to term. Both “intended” parents are able to be genetic parents when their fertilized embryo is implanted in the womb of a surrogate. Traditional surrogacy refers to the insemination of the surrogate with the sperm of the “intended” father.

Each nation-state is measured by selecting the most appropriate response for each of the eight variables. The variables and response categories were developed following review of all the laws, ordinances, medical association guidelines, ethics committee guidelines, and all alternative regulatory measures practiced in the thirty-five countries under study. This represents a composite of alternative practices. The distributions of nations for each dependent variable are presented in Figures 3 through 10.

Below is a list of these eight variables and their attributes or categories:

- a.) Marital status requirements for individuals seeking infertility treatment: 0.) no requirements; 1.) married or cohabiting male and female; or 2.) married couples only
- b.) Age status requirements for individuals seeking infertility treatment: 0.) no

restrictions on age; 1.) maximum age for female only; or 2.) maximum age for female and male.

c.) Posthumous conception by the artificial insemination of the sperm of a deceased man classified as: 0.) prohibited; 1.) not specified; or 2.) limited by length of time after death; or 3.) allowed.

d.) Donor insemination: 0.) prohibited; 1.) exception: allowed but prohibited when done in connection with in vitro fertilization; or 2.) allowed;

e.) Ovum or oocyte donation: 0.) prohibited; or 1.) allowed.

f.) Embryo donation: 0.) prohibited; or 1.) allowed

g.) Surrogate motherhood: 0.) prohibited; 1.) no legislation or guidelines; 2.) allowed when not commercialized for profit; or 3.) allowed without restriction.

h.) Policy on handling donors: 0.) no donations practiced; 1.) anonymous donation or total secrecy; 2.) record kept of donor's medical history and other important data; 3.) record kept of donor's identity and other facts, offspring's right to know origin is the focus; and information released when the offspring reaches maturity; or 4.) donor decides if anonymous or information released. Each of these variables will now be discussed in detail.

Marital Restrictions. Access to infertility treatment is often limited according to the conjugal circumstances of the person. Forty percent of the nation-states have no requirements for individuals seeking infertility treatment. This circumstance leaves the door open for single females to receive treatment. The lack of regulation or limits placed on access may enable gay and lesbian couples to receive services in some countries, but in others physicians do not

provide services to this population regardless of the government policy. Forty-three percent of the nation-states require couples seeking medically assisted procreation to be a heterosexual cohabiting male and female who may or may not be married. Another seventeen percent of the nation-states limit medically assisted procreation to married couples only. See Figure 3 for the distribution of nations on this dependent variable.

Age Restrictions. Access to infertility treatment may be limited by age maximums. Fifty-seven percent of the nation-states do not have restrictions on age. Twenty-nine percent of the nation-states limit access to medically assisted procreation through a maximum age for females. An additional fourteen nation-states limit access to treatment by age restrictions, which include maximum ages for both males and females. The nations' distribution on this dependent variable is in Figure 4.

Posthumous Conception. Seventeen out of the thirty-five countries or forty-nine percent of the nation-states nations prohibit posthumous conception by artificial insemination of the spouse. Seven percent (three nations) do not specify either allowed or not allowed. One country, Estonia, allows artificial insemination of the widow using the deceased spouse's sperm within thirty days of the date of death. This was the result of a compromise and has been justified as adding flexibility in situations where fertility treatment was in process when the death took place. Forty percent of the nations allow posthumous conception. Figure 5 displays the data on this dependent variable.

Insemination by Donor. The most frequent use of a third-party donor is the practice of sperm donation. Only nine percent of the nation-states prohibit donor insemination. Another

nine percent of the nations allow donor insemination as long as it is not done with in vitro fertilization. The remaining eighty-three percent of the nations allow donor insemination. The data for this dependent variable are in Figure 6.

Ovum or Oocyte Donation. The third-party donation of ovum or oocyte is a more recent practice as compared to sperm donation. The nation-states are divided according to the handling of ovum donation as twenty-three percent prohibit donation and seventy-seven percent allow ovum donation. Figure 7 displays the data for this dependent variable.

Embryo Donation. The third-party donation of embryo is a recent and highly controversial practice. Thirty-four percent of the nation-states have prohibited the donation of embryo. Sixty-six percent of the nation-states allow embryo donation. The data for this dependent variable are exhibited in Figure 8.

Surrogate Motherhood. The controversial practice of gestational surrogate mother is the modern day form of surrogacy used when a woman has difficulty carrying a baby to term. Generally the mother's ovum is fertilized with the father's sperm using in vitro fertilization. The fertilized ovum or embryo is then implanted in the surrogate mother's womb. This practice enables the "intended parents" to have a child that is genetically related to both. The practice of surrogate motherhood is prohibited in fifty-seven per cent of the nation-states. There is no legislation or guidelines regulating surrogate motherhood in thirty-one percent of the nation-states. Surrogate motherhood is allowed when not commercialized for profit in nine percent of the nation-states. Not only are surrogate mothers and others facilitating these services prevented from financially profiting from

surrogacy, added restrictions prevent the advertisement and recruitment aspects of commercial surrogacy programs. Surrogate motherhood is allowed without restriction in only one nation, Spain; however, the woman who gives birth is the legal mother. Figure 9 displays the data on this dependent variable.

Policy on Handling Donors. The handling of third-party donors is an area of disagreement and strong opinions. Eleven percent of the nation-states do not allow donations. Another forty per cent of the nation-states practice anonymous donation. Twenty-nine percent of the nation-states retain records of the donor's medical history and other important data. Eleven percent of the nation-states record the identity of the donor, and focus on the offspring's right to know his or her identity. The identifying information is released when the offspring reaches maturity. Nine percent of the nation-states empower the donor with the decision to either remain anonymous or permit identifying information to be released. The data on this dependent variable are displayed in Figure 10.

#### Independent variables

The data for the independent variables are indicators of national character. The influence of national identity is explored through the dominant language-spoken and religious affiliation.

Language group. Each nation-state was identified with a predominant language. The official language is designated by the government. If there was more than one official language, the language spoken by the population majority was selected. *The Europa Year Book 2000* was the source for this information. The breakdown of the languages into

groups/families was based on Dalby's (1998) *Dictionary of Languages*. The language groups and the nations included in each group are as follows:

a.) Uralic and Baltic: The Uralic language family includes the Balto-Finnic languages: Estonian and Finnish, and Hungarian. The Baltic group includes Lithuanian and Latvian. This includes five nations or fourteen percent of the total of 35 countries.

b.) Norse: The Norse group (roots are "Old Norse") includes Norwegian, Icelandic, Danish, and Swedish. Four nation-states out the total of 35, which constitutes eleven percent, fall in the Norse language group.

c.) Germanic: Dutch spoken in the Netherlands and Flemish spoken in Belgium are very close to one another and originate from the Germanic language group. The dialect spoken in Luxembourg, called Luxembourgish, is identified as a combination German-Moselle-Frankish. Further Belgium and Luxembourg have close political ties. On the other hand, a mixture of languages occurs in these countries. For example, French is the legal language of the justice system in Luxembourg and the language spoken in part of Belgium. Three nations or nine percent of the thirty-five countries are in the Germanic language group.

d.) English: English originated in the Germanic group but the Norman French influence after the 1066 Norman Conquest made English very different from the Germanic group. The English speaking nations are the United Kingdom, Ireland, Malta, Canada, Australia, and New Zealand. Six out of 35 nation-states are in the English group, which is seventeen percent.

e.) Northern Romance: French changed more rapidly than other Romance language.

France alone constitutes three percent of the total 35 nation-states.

f.) Romance: The romance languages include Romanian, Italian, Spanish, and Portuguese. Eleven percent of the countries, four out of 35, are included in the Romance language group.

g.) German: German language group includes Austria, Germany, Switzerland. The three German-speaking nations constitute nine percent of the total 35 countries.

h.) Slavonic: Slavonic includes Polish, Czech, Slovak, Bulgarian, Ukrainian, Russian, and Slovene. The seven nations in the Slavonic language group make up twenty percent of the 35 nations.

i.) Turkic: Turkish is in the Turkic language group. Turkey is three percent of the total 35.

j.) Greek: Greek is an early Indo-European language. Greece makes up another three percent of the 35 countries. For analysis purposes an Other category was used and included Turkic and Greek since both are alone.

Religious affiliation. Each nation-state has a representative religious category.

The data were reported in *The Europa Year Book 2000* and is generally taken from census figures. The categories were: a). Christianity- no majority denomination, b). Roman Catholic majority, c). Evangelical Lutheran majority, d). Russian Orthodox majority, e). Greek Orthodox majority, and f). Muslim. The distribution of religious affiliation among the nations is shown in Figure 11.

A compressed religious categories version retains the Roman Catholic and Muslim



categories while creating a Protestant category to collapse the other Christianity categories. When religious affiliation is collapsed, twenty-two nations or sixty-three percent are in the Protestant category, twelve nations or thirty-four percent in the Roman Catholic category, and one nation or three percent in the Muslim category.

Education. The relationship between the emphasis on education in nation-states to the regulatory structures adopted by the nation-states was explored. Public education has been theorized to be a link with identity formation in the production of citizens. It is assumed that education is related to knowledge of and skills in the development of MAP practices. Educational emphasis was measured by the percentage of gross national product (GNP) each nation spends on education. The sources for the data were the *UNESCO 1999 Statistical Yearbook* and the U.N. *Statistical Yearbook 1995*. The UNESCO publication *World Data on Education, A guide to the structure of national education systems* (2000) was a second consultation source. Based upon an average calculated from available data from 1992 through 1996, the thirty-five nations were ranked. The ranks were categorized as high, medium, or low. The rank ordered outcomes or the data are listed in Figure 12.

The data represented in Figure 12 has a range of 5.47. It ranges from the minimum of 2.76, which is the percentage Greece spends on education to the maximum for the range is 8.23, which is the percentage Sweden spends on education. The mode of 6.77 is the percentage spent on education for both Hungary and the Ukraine. Based upon the mean of 5.57 and median of 5.42, the nation-state which best represents the middle score of the data is Austria. The percentage of GNP Austria spends on education as an average over the period is

5.56.

Economy. An aspect of the economy measured was the per capita GNP of each nation. It is assumed that greater availability of funds is associated with the ability of a nation to broaden the scope of infertility treatment. The nation-states were compared based on the GNP per capita, for 1998 in United States dollars (US\$). The data source for this variable was the *2000 World Population Data Sheet of the Population Reference Bureau (2000)*. The data recorded in Figure 13 ranges from the Ukraine's low of \$ 980. to Luxembourg's high of \$45,100. Figure 14 displays the rank ordered nations based upon per capita GNP.

Health Care. The nation-states were compared in regard to health care system model and expenditures for health care. The health care systems of the 35 nation-states are varied. The three basic models are national health services funded by general taxation, social health insurance funded largely by payroll contributions, and the classical market-based model relying upon private insurance. The prototypes are found in various combinations among the nations rather than as ideal types.

The 35 nations are identified based upon the funding model most representative of their health care system. They are divided as follows:

1.) National Health Service Model: (funded by general taxation) This model best represents the following twenty-six nations: Bulgaria, Czech Republic, Denmark, Estonia, Finland, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Malta, Norway, Poland, Portugal, Romania, Russia, Slovakia, Spain, Sweden, Turkey, Ukraine, United Kingdom, Canada, New Zealand

2.) Social Health Insurance Model: (compulsory payroll contributions) This model best represents the following eight nations: Austria, Belgium, France, Germany, Luxembourg, Netherlands, Slovenia, Australia

3.) Market-Based: (voluntary private insurance) The model best represents the one nation of Switzerland.

The relationship of interest in national health care to the regulatory structures adopted by the nation-states is explored further. Available funding of healthcare has been linked with the quality of care and the emphasis granted to infertility treatment. It is assumed that the health care funding is related to the development of MAP practices. Health care emphasis was measured by the percentage of GDP each nation spends on health care. The comparison of expenditures on health is based on the percentage of GDP reported for European countries in “Comparative economy of health systems in Europe” presented to the European Standing Conference of National Ethics Committees by Dr. Reinhard Busse (1998, January) of the Department of Epidemiology and Social Medicine, Medizinische Hochschule in Hannover, Germany. The data are exhibited in Figure 16.

The thirty-five nation-states display a range of 7.4 in the percentages of GDP spent on health care. The data ranges from the minimum of 2.3, which is the percentage of GDP spent on health care in Russia. The maximum percentage of GDP spent on health care was 9.7 found in both Austria and France. The mode of 4.7 reflects Bulgaria, Latvia, and the Ukraine. The United Kingdom and New Zealand represent the median of 7.1 of the group of nations and Denmark comes closest to the mean (6.6).

Demographic indicators. Cross comparisons of the nation-states were also made using the three basic demographic indicators: birth rate, infant mortality rate, and life expectancy at birth (years). All three indicators have been associated with the status of the health care systems. The data source is the *2001 World Population Data Sheet of the Population Reference Bureau* (2001). The data are displayed in Figures 16, 17, and 18.

The relationship of the birth rate to the regulatory structures adopted by the nation-states was explored. The national birth rate is assumed to influence the interest and attention granted infertility treatment. The national rates ranged from eight to twenty-two (births per 1,000 population). Latvia and Ukraine have a birth rate of eight, whereas, Turkey has a birth rate of twenty-two. Iceland and New Zealand are the closest to Turkey with birth rates of fifteen. The mean of this group is eleven births per 1,000 population. The median is ten births per 1,000 population and eight countries had this rate. The data on birth rate are displayed in Figure 16.

The relationship of infant mortality rate to the regulatory structures adopted by the nation-states is explored. The infant mortality rate has been closely tied to the quality of health care. Lack of good health disproportionately impacts infants. The statistic represents the annual number of infant deaths under age one year per 1,000 live births. The broad range of data starts with Iceland having the lowest rate of 2.4 to Turkey having the highest rate of 35. The figures are widely dispersed as shown by the multiples modes of which 4.2 is the smallest. The data has a mean of 7.8 and a medium of 5.5. Infant mortality rates for the thirty-five nations are displayed in Figure 17.

The relationship of life expectancy at birth (years) to the regulatory structures adopted by the nation-states was explored. Greater life expectancy at birth (years) has been tied to higher quality of health care. The data ranges from Russia's low of 66 years to the high of 80 years for both Switzerland and Sweden. The range is fourteen years. The mean was 75.57 years, the medium was 77 years, and the mode was 78 years. The life expectancy at birth (years) for the thirty-five nations are listed in Figure 18. The analysis is based upon the combined data for men and women. To facilitate additional discussion, the separate data for males and females is also displayed. This reveals the low of age 59 for Russian males as compared to age 78 for Icelandic males. In comparison the range for women goes from the low of 71 years for a women in Turkey to a high of 83 years for a women in Switzerland.

#### Leading Ideas and Hypotheses

Based upon previous research and related theories, the regulatory structure adopted by the nation was expected to be influenced by national identity and demographic factors. In particular the ethnonationalism of Anthony Smith views the persistence of national identities to be founded in ethnic heritages and European language groups. This inquiry focused on the following contentions related to these expectations.

- 1.) Nations sharing the same dominant language-spoken will have MAP regulations with a similar level of restrictiveness.
- 2.) Nations who are predominantly Roman Catholic are less likely to have MAP legislation than nations who are not predominantly Roman Catholic.
- 3.) The percentage of GNP spent on education is positively associated with the passage of

MAP legislation.

4.) The per capita gross national product is positively associated with the passage of MAP legislation.

5.) The expenditure on health care is positively associated with the passage of MAP legislation.

### Analysis

Although not all nations were included, this group of thirty-five were not treated as a sample but as a sub-group with common geographical and political ties. For analysis purposes they were treated as a population and not as a sample. The proportionate reduction of error (PRE) methodology was selected due to the nominal nature of the dependent variables. Lambda statistics were used to examine the relationship between the dependent and several independent variables. Eta and eta-squared statistics were used when one measure was nominal and one was interval.

### Conclusion

This chapter presented and described in detail the data collection process plus the dependent and independent variables. The following chapter will report the results of the review of the legislation and policy regulating the technologies and practice of medically assisted procreation (MAP). The overall objective is to provide a comprehensive description of the regulatory status of each nation-state.

Figure 2: The Status of Legislative Action on Medically Assisted Procreation

Group 3: Federal legislation on MAP passed; includes 46% or 16 of 35 nation-states.

Austria	1992 Reproductive Medicine Law
Denmark	1997 Artificial Fertilization
Estonia	1997 Artificial Fertilization & Embryo Protection
France	1994 No. 548; No. 653; No. 654
Germany	1990 Protection of Human Embryo
Hungary	1997 Act 154; 1999 Surrogacy amendment
Iceland	1996 Medically-Assisted Procreation
Netherlands	1989 IVF Planning Decree
Norway	1994 Application of Biotechnology in Medicine
Russia	1996 Act on Artificial Fertilization
Slovenia	2000 Infertility Treatment & Biomedically Assisted Procreation Procedures Act (No. 70/2000)
Spain	1988 Artificial Procreation
Sweden	1988 In Vitro Fertilization; 1984 Artificial Insemination
Switzerland	1998 Medically Assisted Reproduction
Turkey	1996 Official Gazette, No. 22822
United Kingdom	1990 Human Fertilisation & Embryology Act

Group 2: Alternative regulatory structure; ordinances/guidelines or law addresses some aspects not all; includes 23% or 8 of 35 nation-states.

Belgium	Czech Republic	Lithuania	Slovakia
Bulgaria	Ireland	Luxembourg	Australia

Group 1: Federal legislative action pending; partial regulatory structure; includes 11% or 4 of 35 nation-states.

Italy	Latvia	Canada	New Zealand
-------	--------	--------	-------------

Group 0: Unregulated; 20% or 7 of 35 nation-states.

Finland	Malta	Portugal	Ukraine
Greece	Poland	Romania	

.....  
Totals: 46 + 23 + 11 + 20 = 100%

Figure 3: Requirements for the Societal Relationship of Intended Parents or Marital Status

Practice Guidelines in Medically Assisted Procreation

Group 0: No requirements - includes services open to single females; constitutes 40% or 14 of 35 nation-states.

Belgium	Bulgaria	Estonia
Latvia	Luxembourg	Netherlands
Portugal	Romania	Russia
Spain	Ukraine	United Kingdom
Canada	New Zealand	

---

Group 1: Heterosexual couples either married or cohabiting male & female; constitutes 43% or 15 of 35 nation-states.

Austria	Czech Republic	Denmark
Finland	France	Germany
Greece	Hungary	Iceland
Norway	Slovakia	Slovenia
Sweden	Switzerland	Australia

---

Group 2: Married heterosexual couples only; constitutes 17% or 6 of 35 nation-states.

Ireland	Italy	Lithuania
Malta	Poland	Turkey

---

Total: 40 + 43 + 17 = 100%



Figure 4: Age Requirements for Individuals Seeking Infertility Treatment

Practice Guidelines in Medically Assisted Procreation

Group 0: No restrictions on age; constitutes 57 % or 20 of 35 nation-states.

Austria	Belgium	Bulgaria
Finland	Greece	Ireland
Latvia	Luxembourg	Malta
Norway	Poland	Portugal
Romania	Slovakia	Spain
Sweden	Ukraine	United Kingdom
Canada	New Zealand	

---

Group 1: Maximum age for females only; constitutes 29% or 10 of 35 nation-states.

Czech Republic	Denmark	Estonia
Germany	Hungary	Iceland
Lithuania	Netherlands	Slovenia
Turkey		

---

Group 2: Maximum age for females and males; constitutes 14% or 5 of 35 nation-states.

France	Italy	Russia
Switzerland	Australia	

---

Total: 57 + 29 + 14 = 100%

Figure 5: Regulation of the Practice of Posthumous Conception by Artificial Insemination of the Sperm of Deceased Spouse/Partner

Group 0: Prohibited; 49% or 17 of 35 nation-states.

Austria	Bulgaria	Czech Republic	Denmark
Finland	France	Germany	Iceland
Ireland	Italy	Lithuania	Malta
Norway	Slovakia	Slovenia	Sweden
Switzerland			

---

Group 1: Not specified; 9% or 3 of 35 nation-states.

Hungary	Russia	Turkey
---------	--------	--------

---

Group 2: Limited by length of time after death (30 days from date of death); 3 % or 1 nation of 35 nations.

Estonia
---------

---

Group 3: Allowed; 40% or 14 nation-states.

Belgium	Greece	Latvia
Luxembourg	Netherlands	Poland
Portugal	Romania	Spain
Ukraine	United Kingdom	Australia
Canada	New Zealand	

---

Totals: 49 + 9 + 3 + 40 = 101%

Figure 6: The Practice of Artificial Insemination by Donor (DI) and its Regulation In Medically Assisted Procreation

Group 0: Prohibited; constitutes 9% or 3 of 35 nation-states.

Ireland	Lithuania	Turkey
---------	-----------	--------

Group 1: Exception: allowed but prohibited if done in connection with in vitro fertilization; constitutes 9 % or 3 of 35 nation-states.

Austria	Norway	Sweden
---------	--------	--------

Group 2: Allowed; constitutes 83% or 29 of 35 nation-states.

Belgium	Bulgaria	Czech Republic
Denmark	Estonia	Finland
France	Germany	Greece
Hungary	Iceland	Italy
Latvia	Luxembourg	Malta
Netherlands	Poland	Portugal
Romania	Russia	Slovakia
Slovenia	Spain	Switzerland
Ukraine	United Kingdom	Australia
Canada	New Zealand	

.....  
Total: 9 + 9 + 83 = 101%

Figure 7: The Regulation of the Practice of Ovum Donation in Medically Assisted Procreation

Group 0: Prohibited; constitutes 23% or 8 of 35 nation-states.

Austria	Estonia	Germany
Ireland	Lithuania	Norway
Sweden	Turkey	

Group 1: Allowed; constitutes 77% or 27 of 35 nation-states.

Belgium	Bulgaria	Czech Republic
Denmark	Finland	France
Greece	Hungary	Iceland
Italy	Latvia	Luxembourg
Malta *	Netherlands	Poland
Portugal *	Romania	Russia
Slovakia *	Slovenia	Spain
Switzerland	Ukraine	United Kingdom
Australia	Canada	New Zealand

\* Although the technology is legally allowed it is rarely practiced in several nations and not at all in others. These nations are an example of allowed but not practiced.

.....  
Totals: 23% + 77% = 100%

Figure 8: The Status of Embryo Donation Practices in Medically Assisted Procreation

Group 0: Prohibited; constitutes 34% or 12 of 35 nation-states.

Austria	Denmark	Estonia *
Germany *	Iceland	Ireland
Lithuania	Norway	Slovenia
Sweden	Switzerland	Turkey

\* Exceptions made when a “spare embryo” must be destroyed unless donated.

Group 1: Allowed; constitutes 66% or 23 of 35 nation-states.

Belgium	Bulgaria	Czech Republic
Finland *	France	Greece
Hungary	Italy	Latvia
Luxembourg	Malta *	Netherlands
Poland	Portugal	Romania
Russia	Slovakia	Spain
Ukraine	United Kingdom	Australia
Canada	New Zealand	

\* Lawful because no law addresses this issue. The technology is not practiced.

.....  
Totals: 34% + 66% = 100%

Figure 9: Regulations Pertaining to Surrogate Motherhood

The Status of Surrogacy Practice in Medically Assisted Procreation

Group 0: Prohibited; constitutes 57% or 20 of 35 nation-states.

Austria	Bulgaria	Czech Republic
Denmark	Estonia	France
Germany	Hungary	Iceland
Ireland	Italy	Lithuania
Norway	Poland	Russia
Slovakia	Slovenia	Sweden
Switzerland	Turkey	

Group 1: No legislation or guidelines; constitutes 31% or 11 of 35 nation-states.

Belgium	Finland	Greece
Latvia	Luxembourg	Malta
Portugal	Romania	Ukraine
Canada	New Zealand	

Group 2: Allowed when not commercialized for profit; constitutes 9% or 3 of 35 nation-states.

Netherlands	United Kingdom	Australia
-------------	----------------	-----------

Group 3: Allowed without restriction; constitutes 3% or 1 nation-state of 35 nation-states.  
Spain \*

\* Delivery determines motherhood, i.e., woman who gives birth to the child is the legal mother.

.....  
Total: 57 + 31 + 9 + 3 = 100

Figure 10: Regulations Pertaining to Handling Donors in Medically Assisted Procreation

Group 0: No donations practiced; constitutes 11% or 4 of 35 nation-states.

Ireland	Lithuania	Malta	Turkey
---------	-----------	-------	--------

Group 1: Anonymous donation/ total secrecy; constitutes 40% or 14 of 35 nation-states.

Belgium	Bulgaria	Denmark
Finland	France	Greece
Hungary	Italy	Luxembourg
Norway	Poland	Portugal
Romania	Ukraine	

Group 2: Record kept of donor's medical history/ important facts; 29% or 10 of 35 nation-states.

Czech Republic	Estonia	Latvia	Netherlands
Slovakia	Slovenia	Spain	United Kingdom
Canada	New Zealand		

Group 3: Record kept of donor's identity in recognition of offspring's right to know his/her origin; information is available to offspring in adulthood; constitutes 11% or 4 of 35 nation-states.

Austria	Germany	Sweden	Australia
---------	---------	--------	-----------

Group 4: Donor declares if donation is anonymous or information is released; constitutes 9% or 3 of 35 nation-states.

Iceland	Russia	Switzerland
---------	--------	-------------

.....  
Total: 11 + 40 + 29 + 11 + 9 = 100%

Figure 11: Religious Affiliation Professed According To Nation

Christianity - no majority denomination; 15 of 35 nation-states or 43%

Bulgaria	Czech Republic	Estonia	Germany
Latvia	Lithuania	Netherlands	Romania
Slovenia	Switzerland	United Kingdom	Ukraine
Australia	Canada	New Zealand	

Roman Catholic majority; 12 of 35 nation-states or 34%

Austria	Belgium	France	Hungary
Ireland	Italy	Luxembourg	Malta
Poland	Portugal	Slovakia	Spain

Evangelical Lutheran majority; 5 of 35 nation-states or 14%

Denmark	Finland	Iceland
Norway	Sweden	

Russian Orthodox majority; 1 of 35 nation-states or 3%

Russia

Greek Orthodox majority; 1 of 35 nation-states or 3%

Greece

Muslim; 1 of 35 nation-states or 3%

Turkey

Total: 43 + 34 + 14 + 3 + 3 + 3 = 100%



Figure 12: 35 Nations Rank Ordered According to the Percentage of the Gross National Product Spent on Education

Calculated from average of 1992-1996 data

<u>high</u>	<u>medium</u>	<u>low</u>
1. Sweden (8.23)	11. Poland ((5.95)	26. Bulgaria (4.85)
2. Denmark (8.00)	12. France (5.85)	27. Spain (4.82)
3. Norway (7.87)	13. Latvia (5.72)	28. Belgium (4.80)
4. Finland (7.65)	14. Slovenia (5.62)	29. Germany (4.76)
5. Canada (7.60)	15. Austria (5.56)	30. Russia (3.76)
6. New Zealand (7.30)	16. Switzerland (5.43)	31. Romania (3.35)
7. Estonia (6.77)	17. Portugal (5.42)	32. Luxembourg (3.25)
7. Ukraine (6.77)	18. United Kingdom (5.37)	33. Turkey (3.05)
8. Hungary (6.17)	19. Czech Republic (5.32)	34. Greece (2.76)
9. Ireland (6.12)	20. Iceland (5.26)	
10. Australia (6.00)	21. Lithuania (5.25)	
	22. Netherlands (5.23)	
	23. Slovakia (5.20)	
	24. Malta (5.02)	
	25. Italy (5.00)	

Figure 13: A Comparison of 35 Nations Based on the Per Capita GNP 1998 (US\$)

Nation-State	GNP per capita
Austria	\$26,830
Belgium	\$25,380
Bulgaria	\$ 1,220
Czech Republic	\$ 5,150
Denmark	\$33,040
Estonia	\$ 3,360
Finland	\$24,280
France	\$24,210
Germany	\$26,570
Greece	\$11,740
Hungary	\$ 4,510
Iceland	\$27,830
Ireland	\$18,710
Italy	\$20,090
Latvia	\$ 2,420
Lithuania	\$ 2,540
Luxembourg	\$45,100
Malta	\$10,100
Netherlands	\$24,780
Norway	\$34,310
Poland	\$ 3,910
Portugal	\$10,670
Romania	\$ 1,360
Russia	\$ 2,260
Slovakia	\$ 3,700
Slovenia	\$ 9,780
Spain	\$14,100
Sweden	\$25,580
Switzerland	\$39,980
Turkey	\$ 3,160
Ukraine	\$ 980
United Kingdom	\$21,410
Australia	\$20,640
Canada	\$19,170
New Zealand	\$14,600

Figure 14: 35 Nations Rank Ordered Based on the Per Capita Gross National Product  
(1998, US\$)

1. Luxembourg	13. United Kingdom	25. Hungary
2. Switzerland	14. Australia	26. Poland
3. Norway	15. Italy	27. Slovakia
4. Denmark	16. Canada	28. Estonia
5. Iceland	17. Ireland	29. Turkey
6. Austria	18. New Zealand	30. Lithuania
7. Germany	19. Spain	31. Latvia
8. Sweden	20. Greece	32. Russia
9. Belgium	21. Portugal	33. Romania
10. Netherlands	22. Malta	34. Bulgaria
11. Finland	23. Slovenia	35. Ukraine
12. France	24. Czech Republic	

Figure 15: 35 Nations Rank Ordered Based Upon the Percentage of GDP Spent on Health Care

National Expenditures on Health Care Calculated As Percentage of Gross Domestic Product

1. Austria (9.7)	13. Australia (7.4)	25. Lithuania (4.8)
2. France (9.7)	14. Portugal (7.4)	26. Bulgaria (4.7)
3. Switzerland (9.5)	15. Ireland (7.3)	27. Latvia (4.7)
4. Germany (9.4)	16. Norway (7.3)	28. Ukraine (4.7)
5. Netherlands (8.8)	17. Spain (7.2)	29. Greece (4.6)
6. Italy (8.5)	18. United Kingdom (7.1)	30. Poland (4.6)
7. Finland (8.2)	19. New Zealand (7.1)	31. Canada (4.4)
8. Belgium (8.1)	20. Slovakia (7.0)	32. Malta (4.3)
9. Iceland (8.1)	21. Hungary (6.9)	33. Turkey (4.2)
10. Slovenia (7.9)	22. Denmark (6.5)	34. Romania (3.6)
11. Sweden (7.7)	23. Estonia (6.2)	35. Russia (2.3)
12. Czech Republic (7.5)	24. Luxembourg (5.7)	

\* Presented by Dr. Reinhard Busse at European Standing Conference of National Ethic Committees, January 1998.

Figure 16: 35 Nations Rank Ordered Based Upon Birth Rate

Birth Rate: Measured by the Number of Births per 1,000 Population, 1999 Figures

1. Latvia	8
2. Ukraine	8
3. Bulgaria	9
4. Czech Republic	9
5. Estonia	9
6. Germany	9
7. Italy	9
8. Lithuania	9
9. Russia	9
10. Slovenia	9
11. Austria	10
12. Greece	10
13. Hungary	10
14. Poland	10
15. Romania	10
16. Slovakia	10
17. Spain	10
18. Sweden	10
19. Belgium	11
20. Finland	11
21. Malta	11
22. Switzerland	11
23. Canada	11
24. Portugal	12
25. United Kingdom	12
26. Denmark	13
27. France	13
28. Luxembourg	13
29. Netherlands	13
30. Norway	13
31. Australia	13
32. Ireland	14
33. Iceland	15
34. New Zealand	15
35. Turkey	22

Figure 17: 35 Nations Rank Ordered Based Upon Infant Mortality Rate

Annual number of deaths of infants under age one year per 1,000 live births in 1999

1. Iceland	2.4	19. Portugal	5.6
2. Sweden	3.4	20. United Kingdom	5.7
3. Finland	3.6	21. Australia	5.7
4. Norway	3.9	22. Greece	5.9
5. Czech Republic	4.1	23. New Zealand	6.1
6. Denmark	4.2	24. Malta	7.2
7. Slovenia	4.2	25. Slovakia	8.6
8. France	4.4	26. Lithuania	9.0
9. Germany	4.4	27. Hungary	9.2
10. Switzerland	4.6	28. Poland	9.2
11. Luxembourg	4.7	29. Estonia	10.0
12. Austria	4.8	30. Latvia	11.0
13. Spain	4.9	31. Bulgaria	14.9
14. Italy	5.2	32. Ukraine	15.0
15. Netherlands	5.2	33. Russia	16.0
16. Belgium	5.3	34. Romania	18.6
17. Ireland	5.5	35. Turkey	35.0
18. Canada	5.5		

Figure 18: 35 Nations Rank Ordered Based On Life Expectancy at Birth (years), 1999  
Figures

<u>Males/Females</u>	<u>Males only</u>	<u>Females only</u>
1. Russia (66)	1. Russia (59)	1. Turkey (71)
2. Ukraine (68)	2. Ukraine (63)	2. Russia (72)
3. Turkey (69)	3. Estonia (65)	3. Romania (74)
4. Estonia (71)	4. Latvia (65)	4. Ukraine (74)
5. Hungary (71)	5. Hungary (66)	5. Bulgaria (75)
6. Latvia (71)	6. Lithuania (67)	6. Hungary (75)
7. Romania (71)	7. Romania (67)	7. Estonia (76)
8. Bulgaria (72)	8. Turkey (67)	8. Latvia (76)
9. Lithuania (73)	9. Bulgaria (68)	9. Lithuania (77)
10. Poland (73)	10. Poland (68)	10. Poland (77)
11. Slovakia (73)	11. Slovakia (69)	11. Slovakia (77)
12. Czech Republic (75)	12. Czech Republic (71)	12. Czech Republic (78)
13. Denmark (76)	13. Portugal (71)	13. Denmark (79)
14. Portugal (76)	14. Slovenia (72)	14. Ireland (79)
15. Slovenia (76)	15. Denmark (74)	15. Portugal (79)
16. Finland (77)	16. Finland (74)	16. Slovenia (79)
17. Ireland (77)	17. Germany (74)	17. United Kingdom (80)
18. Malta (77)	18. Ireland (74)	18. New Zealand (80)
19. United Kingdom (77)	19. Malta (74)	19. Malta (80)
20. New Zealand (77)	20. Spain (74)	20. Austria (81)
21. Austria (78)	21. New Zealand (74)	21. Belgium (81)
22. Belgium (78)	22. Austria (75)	22. Finland (81)
23. Germany (78)	23. Belgium (75)	23. Germany (81)
24. Greece (78)	24. France (75)	24. Greece (81)
25. Luxembourg (78)	25. Luxembourg (75)	25. Iceland (81)
26. Netherlands (78)	26. Netherlands (75)	26. Luxembourg (81)
27. Norway (78)	27. United Kingdom (75)	27. Netherlands (81)
28. Spain (78)	28. Greece (76)	28. Norway (81)
29. France (79)	29. Italy (76)	29. Canada (81)
30. Iceland (79)	30. Norway (76)	30. Italy (82)
31. Italy (79)	31. Australia (76)	31. Spain (82)
32. Australia (79)	32. Canada (76)	32. Australia (82)
33. Canada (79)	33. Sweden (77)	33. Sweden (82)
34. Sweden (80)	34. Switzerland (77)	34. France (83)
35. Switzerland (80)	35. Iceland (78)	35. Switzerland (83)

## CHAPTER IV.

### FINDINGS: THE REGULATORY STATUS OF THE NATION-STATES

The foremost objective of this study was to complete a detailed description of the regulatory actions taken in thirty-five nation-states to regulate medically assisted procreation. This chapter contains the information to meet the study's first objective. The study focus is the Council of Europe member states. The countries are Austria, Belgium, Bulgaria, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, and the United Kingdom. The non-member participant states: Australia, Canada, and New Zealand have been included due to their participation in the Council of Europe work groups. As British Commonwealth nations, Australia, Canada, and New Zealand are closely tied to the United Kingdom. Including Australia is important because it held an early leadership role in the development of the new technology, and its regulation. The primary data sources were copies of pertinent legislation or policy regulations and other information on the handling of medically assisted procreation by the nations. In the description of each nation-state the emphasis upon regulatory strategies related to access to MAP practice, controls or restrictions on various technologies or practices, and standards for quality assurance.



## Austria

The regulation of MAP in Austria is through the 1992 Reproductive Medicine Law (BGB1. Nr. 275/1992) and the 1998 Ordinance on reports about activities and experiences with medically assisted reproduction (BGB1. II, Nr. 362/1998). Effective January 1, 2000 a fund for the financing of in vitro fertilizations was established through passage of legislation: *IVF-Fonds-Gesetz* (BGB1. I Nr. 180/1999).

The 1992 Reproductive Medicine Law amended the General Civil Code, the Marriage Law, and the Rules of Jurisdiction. The filiation of children born is covered in Section 156(a): “If the mother’s husband has consented, in the form of a court protocol or act authenticated by a notary, to MAP using the sperm of a third person, the legitimacy of the child born as the result of the use of the sperm of a third person may not be contested.” Section 163(1) establishes paternity in the case of a child born out of wedlock in MAP practice, i.e., “the man whose sperm has been used shall be presumed to be the father of the child.” The Marriage Law was amended to state: “A marriage partner shall not have grounds for divorce if the other partner refuses MAP”.

The Federal Law of 1992 states under Section 2.(1): “MAP shall only be permissible within the context of marriage or a relationship that approximates to matrimony.” It further stresses the need to explore all alternatives before relying on MAP practice. Although the sperm of a third party may be used when necessary, the “oocytes and viable cells may only be used in the woman from whom they are obtained”. Under Section 9 (3) “The use of a mixture of sperm from different persons shall not be

permitted for the purposes of MAP.”

Austrian law places high regard on the right of the offspring to information on their biological origin. Section 20 (2) states: “A child born as the result of the use of sperm from a third person shall have the right, if he requests it and when he has reached the age of 14 years, to consult the data referred to in subsection 1 of Section 15, and to obtain information in this respect”. Data to be collected by the health care establishment includes the donor’s full name, hereditary title where appropriate, date and place of birth, nationality, domicile, and exam reports.

### Belgium

The focus of Belgium law is the professional provision of infertility treatment services and quality of care. Individual access to treatment is not a concern addressed through legislative action. Crown Order of February 15, 1999 (Moniteur Belge; *Publie`le*: 1999-03-25) addresses the diagnosis and treatment of sterility, and determines the standards of compliance for reproductive medicine care programs, including required infrastructure, the expertise of personnel, and supervision. The program care is referred to as category A and category B. Basic MAP practices are covered under category A. Category B reproductive medicine entails the addition of the treatment of gametes using current technology such as *in vitro* fertilization; reimplantation of embryos; and the freezing and storage of gametes and embryos.

Belgium does not have an upper age limit, which restricts access to treatment, nor does it require involvement in a heterosexual relationship. No relevant law exists

pertaining to donor insemination, ovum donation, and embryo donation but the techniques are practiced. The principle of secrecy of procreation is practiced when donations occur. Donors are anonymous. Knowledge of practices was acquired by reviewing the Council of Europe's (1998, June) study and review of legislation.

### Bulgaria

The regulation of MAP in Bulgaria is limited to artificial insemination. The July 17, 1990 order of the Ministry of Health and Social Welfare (Durzhaven Vestnik, No. 57, 17 July 1990) amends Order No. 12 of May 30, 1987 on artificial insemination of women. The order mandates the testing of donor sperm and limits the number of fertilizations. Additional donated sperm may be stored in the sperm bank to be used for insemination of foreign citizens or for research purposes. Bulgarian law limits sperm donation to "persons of Bulgarian nationality between 18 and 40 years of age." Posthumous conception, i.e., the insemination of widows with the sperm of deceased spouses is not done. Bulgaria does not specify an upper age limit for people seeking infertility treatment. Access to infertility treatment is not limited according to the marital status of the couples seeking assistance. Although most MAP practices are not against the law, the quality of reproductive medicine is impacted by funding limitations.

### Czech Republic

The only legislative text is the 1982 Order of the Health Ministry pertaining to homologous and heterologous artificial insemination. The Czech Gynecological and Obstetrics Society's assisted procreation section is responsible for the founding of MAP

principles. A Code of Ethics has been prepared by the Association of Medically Assisted Procreation Centers. The Ministry of Health of the Czech Republic and others suggested contacting Dr. Mardesic because he administers the largest infertility treatment center in the Czech Republic.

The practice of sperm and egg donation is legal and practiced, according to Dr. Mardesic (T. Mardesic, MD, Sanatorium Pronatal, personal communication, February 6, 2000). The use of donated gametes is restricted to married couples. Surrogate motherhood is not possible. The donation of gametes is anonymous. Dr. Mardesic says the National Health System will pay for three embryo transfers to each couple, as stated by law. A stable relationship is required for a standard in vitro fertilization procedure. The Czech Republic has fourteen licensed MAP treatment centers, of which six are state clinics and eight are private centers. Data are reported to a National Register. Centers must achieve and maintain a specific level of skills, proper equipment, a minimum of two hundred documented in vitro fertilization cycles, at least a ten per cent baby take-home rate, and mandatory reporting to the National Register. The Czech Society for Assisted Reproduction and Sterility is responsible for updating and evaluating the minimum standards.

### Denmark

The regulation of MAP in Denmark is through Law No. 460 of June 1997 on artificial fertilization in connection with medical treatment, diagnosis, and research. MAP legislation was adopted by the Danish Folketing at the third hearing on May 27, 1997,

according to Maja-Lisa Axen (personal communication, December 16, 1999). MAP practices are required to have the objective of uniting a genetically unchanged oocyte with a genetically unchanged spermatozoon. Artificial fertilization is only made available to couples within the context of marriage or a conjugal relationship that approximates heterosexual marriage. MAP practice is prohibited where the proposed birth mother is over 45 years of age.

Order No. 728 of September 17, 1997 on artificial insemination and Order No.758 of September 30, 1997 on the reporting of in vitro fertilization treatments and pre-implantation diagnosis were made in pursuance of Law No.460. Among other things the destruction of sperm stored for the purpose of causing the donor's partner to become pregnant is mandated in the event of the donor's death.

It is also prohibited to contribute in any manner to the sale of unfertilized or fertilized oocyte. Fertilized oocyte may be kept alive no longer than fourteen days outside a woman's uterus. The transplantation of ovaries for the purpose of remedying sterility or infertility is prohibited. Human oocytes (fertilized or unfertilized) may be frozen for up to two years. Upon the death of the woman or man, or in the event of their separation or divorce, or at the end of the two year period the frozen oocytes must be destroyed. Danish law prohibits surrogate motherhood and prenatal sex selection.

Denmark signed the Council of Europe's Convention on Human Rights and Biomedicine on April 4, 1997. Treaty No.164 was ratified August 10, 1999 and entered into force December 1, 1999. Treaty No. 164 includes the prohibition: "The use of

techniques of medically assisted procreation shall not be allowed for the purpose of choosing a future child's sex, except where serious hereditary sex-related disease is to be avoided.”

Act No. 503 on a Scientific Ethical Committee System and the Handling of Biomedical Research Projects (1992) addresses cloning. Research on cloning, i.e., production of genetical identical individuals, is forbidden as is nuclear substitution. Research bans are further supported in Act No. 460/1997.

### Estonia

The regulation of MAP in the Republic of Estonia is through the Law on Artificial Insemination and Embryo Protection of June 11, 1997. Artificial insemination is only done when the woman is under age fifty years. This procedure requires consent and is never forced. The practice of artificial insemination is not restricted by marital status or sexual preference under the law; the practice is open to single women. Post mortem insemination of a woman may be done within thirty days of the death of her spouse but no later. The transference of the ovum or embryo of one woman to another is allowed only if it is impossible to implant it in the first woman and it is the only way in which the second woman can conceive. The donation of oocytes or embryos is prohibited with one exception. The exception may be made when a “spare embryo” cannot be implanted in the womb of the woman to whom the embryo originated, i.e. unintentionally surplus embryo. In this situation the woman who gives birth is considered the mother. Surrogate motherhood is prohibited in Estonia. Estonian law requires the

medical institution to retain a list of the donor's biological and social particulars. The offspring may obtain this data from the family registry office upon achieving adulthood. The anonymity of donors is protected.

### Finland

At this writing, the Republic of Finland has not adopted legislation to regulate either MAP treatment practices or access to assisted procreation medicine. The lack of legislation translates to a lack of prohibitions against most MAP practices. Sperm, oocyte, and embryo donation are lawful. The circumstances related to surrogacy are indicated to be unspecified; thus the practice appears to be discouraged but not outlawed.

According to Harri Sintonen (personal communication, August 30, 2001) of the Finish Ministry of Health a government bill is under development and will be given in parliament. The preparation of the legislation is the responsibility of the Ministry of Justice. Information has been requested from Desiree Soderlund of the Ministry of Justice but not yet received.

### France

In France medically assisted procreation (MAP) entails "clinical and biological procedures enabling *in vitro* conception, embryo transfer, and artificial insemination, as well as any technique having an equivalent effect enabling procreation outside the natural process." The regulation of MAP in France is through the comprehensive set of laws: No. 94-548 of July 1, 1994 on personal data processing for health research purposes; No. 94-653 of July 29, 1994 on respect for the human body; No. 94-654 of July 29, 1994 on

donation and use of human body parts and derivatives, MAP and antenatal diagnosis. The three laws are incorporated into the Civil Code, the Public Health Code, and the Penal Code. For example Decree No. 95-560 of May 6, 1995 amends the Public Health Code in regard to MAP activities. Additionally Decree No. 95-558 of May 6, 1995 on the National Commission on Medicine, Reproductive Biology and Prenatal Diagnosis amends the Public Health Code. A more current Order of January 12, 1999 pertains to the rules of good clinical and biological practice in the field of medically assisted procreation.

French bioethics law restricts access to MAP to heterosexual couples of child-bearing age, both of whom are alive at the time of insemination or embryo transfer, and are either married or in a relationship that approximates to matrimony for a minimum of two years. If one member of the couple dies, frozen gametes or embryos must be donated to an infertile couple by the surviving person or destroyed. Gamete donation includes the provision by a third party of spermatozoa and oocytes for the purpose of MAP. An embryo may not be conceived with gametes that are not derived from at least one of the two members of the couple. Donors must be members of a couple that has procreated. Written consent must be obtained from the donor and his or her spouse. The French view this relationship to be a fertile couple donating to an infertile couple in support of family life. In France the donation is anonymous and secrecy is maintained. Medical history and other particulars are recorded on the donor. Emergency physician access is authorized under Article L 152-5/L 673-6 Public Health Code. French law prohibits surrogate



motherhood. Intervention is lawful for the purpose of sex selection in regard to the foetus or the embryo if the circumstances entail disease linked to the sex chromosomes.

### Germany

MAP practices are strictly regulated in Germany. The basis for MAP regulation in Germany is *Embryonenschutzgesetz*: the Embryo Protection Law of December 1990, which took effect January 1, 1991. The thirteen sections of this law are part of the criminal law. The purpose of the law is to prevent the misuse of reproductive technologies, according to R. Ulrich, German Consulate General (personal communication, October 13, 1999).

The improper use of reproductive technologies holds a penalty of up to three years imprisonment or a fine. This includes the transfer of an unfertilized egg cell from one woman to a different woman or carrying out actions to enable either surrogacy or embryo donation. Sex selection is also prohibited unless circumstances such as sex-linked hereditary disease exist. A physician who violates the sex selection prohibition may receive up to one year in prison or a fine.

In Germany MAP is only permissible within the context of a heterosexual relationship that is either a marriage or approximates matrimony. Sperm donation is allowed but oocyte or embryo donation is prohibited. The only exception is the “spare embryo” or unplanned incident whereby the unintentional surplus embryo cannot be implanted in the womb of the woman to whom the embryo originated. In this situation the “spare embryo” may be implanted in another woman, and this woman will be

considered the mother of the offspring. The donation is considered preferable to the destruction of the embryo. The handling of donors in Germany is influenced by adoption experience. Adopted children are advised of their biological parents. Similarly the children born as the result of MAP practices involving third-party donors are believed to have a right to information about their origins. Records are kept of the donor's identity and particulars. The information on the donor is made available to the offspring when they reach adulthood.

Ulrich, German Consulate General, says the legal questions arising about surrogate motherhood resulted in Article 1591 of the *Bürgerliches Gesetzbuch* (BGB or Civil Code) being reformed to define the mother of a child as the woman who gave birth to it. This was done to prevent the biological mother who donated an egg or embryo from being considered the mother. Article 1591 BGB determines the consequences in civil law by depriving the egg donor of the possibility to claim motherhood in an action for declaratory judgement. It was also meant to discourage surrogacy (R. Ulrich, personal communication, October 13, 1999). The Adoption Arrangements Act of November 27, 1989 renamed the Act on the Arrangements for the Adoption of Children and on the Prohibition of Surrogate Motherhood is an amendment created to regulate surrogate-motherhood, which is prohibited.

The 1990 law prohibits cloning. The creation of an embryo genetically identical to another embryo, foetus or individual living or dead is an offense. Implantation of an embryo created in this way is a crime.

## Greece

At this writing, Greece has not adopted specific legislation to regulate MAP treatment or to limit access to MAP practices. The lack of legislation translates to a lack of prohibitions against most MAP practices. There are no restrictions in regard to marital status or upper age limits. Donation of sperm, oocytes, and embryos are permissible since the practices are not specified under Greek law. Postmortem conception is unregulated. Surrogate motherhood is unregulated.

A member of the Prime Minister's Office has pointed to other influences, than specific MAP legislation, over MAP practices. Takis Vidalis (personal communication, March 31, 2000) states: "Nevertheless in 1997, Greece was one of the Council of Europe's countries who signed the Convention on Human Rights and Biomedicine. The Convention (ratified by the law 2619/1998, and being, therefore, part of the Greek legal order) includes some provisions relevant with the matter in question (see, for example, article 14). There is also one specific provision on this matter in the Greek Family Law, according to which in cases of assisted reproduction with the husband's consent there is a presumption of the child's paternity (article 1471 C.C.)." At the institutional level, an independent National Bioethics Committee has been formed, with the law 2667/1998, in order to examine, among others, problems of assisted reproductive technology. This committee has not yet produced a document on the matter in the form of guidelines or recommendations.

## Hungary

The regulation of MAP in Hungary is through the Hungarian Act on Health Care (Act 154/1997). This Act was amended by the parliament in December 1999. The amendment repealed Art.166(1)/e and the Articles 183 and 184, which are the provisions regulating surrogate motherhood. Effective January 1, 2000 surrogate motherhood is illegal in any form in Hungary. Prior to this amendment Hungarian law allowed gestational surrogacy if the surrogate was closely related to the mother or father, was between ages 25 and 40, and had at least one child. Written consents were required from all parties, and financial compensation for the surrogate was prohibited. Information on the amendment was provided by the American Embassy in Budapest (N. M. Fite, personal communication, February 25, 2000).

Ordinance No.7 of March 22, 1989 issued by the Minister of Health and Social Affairs on artificial insemination specifies an upper age limit for women of age 45. It further requires the woman to be in full possession of her physical and intellectual capacities, reside permanently in Hungary, and to be judged medically to be unable to conceive a healthy child by natural means.

Hungarian law permits MAP practices within the context of a relationship that approximates matrimony. The issue of whether it has to be a heterosexual relationship or not is not specified under the law. Sperm, oocyte, and embryo donation is allowed. The principle of secrecy of procreation is respected, and was specified in 1981 legislation. The issue of posthumous conception by artificial insemination is not addressed in the

legislation.

On March 10, 1998 parliament passed Act 22 of 1998 which was an amendment dealing with criminal laws. The Act makes it a crime to use gametes from a cadaver or a deceased fetus for the purpose of human reproduction, to alter the gender of an unborn child, to perform a medical experiment of an embryo or gamete without a license, to create several human embryos, or to illegally acquire or sell for pecuniary gain genes, cells, gametes, embryos, organs, or tissues. Specific punishments are prescribed within the law. For example Section 173/C (1) “Any person who performs a procedure for the purpose of altering the gender of unborn child commits a felony offense and shall be punishable with imprisonment of up to five years.” (Hungarian Rules of Law in Force, 1998)

### Iceland

The regulation of MAP in Iceland is through the Law on Medically-Assisted Procreation (No. 55/1996) of June 1, 1996. The availability of MAP is subject to conditions related to infertility and the risk of transmitting a disease. The need to explore all alternatives before relying on MAP practice is stressed. All general infertility methods should have failed prior to the use of MAP technologies. MAP is not available to a woman who is not in a heterosexual relationship. MAP techniques are not available to a widow. Treatment is available within the context of a heterosexual relationship that is either a marriage or approximates matrimony. The unmarried couples must have cohabited three years or more. Icelandic law has an upper age limit of 42 years, with a

possibility of an extension to 45 years.

The concept of “the well-being of the unborn child” is explicitly provided for either in legislation or codes of practice governing the conditions for accessing MAP techniques. The authority responsible for assessing whether that condition is satisfied is the medical team. If the physician refuses to give treatment, the couple can appeal his decision to a committee appointed by Minister of Health. The committee consists of three persons, a lawyer, a physician, and a social worker. The committee’s decision is final.

The lawful MAP practices are: artificial insemination within a couple, in vitro fertilization within a couple, artificial insemination by donor, ovum donation, ovum and sperm donation, and intracytoplasmic sperm injection. Embryo donation is prohibited. Surrogate motherhood is not lawful. Gametes can only be stored if the purpose is for the person’s own personal use in the future, donation for research or donation in connection with MAP. The donor shall give a written consent for the storage in accordance with the storage’s purpose following receiving information on the effect of the storage on the gametes and the general conditions of storage of gametes.

A husband who has consented to MAP with a donor is considered the father of the child unless he can prove the child was not conceived as the result of MAP. The principle of secrecy of procreation is stipulated and respected. Iceland’s handling of the donor’s anonymity varies according to the wishes of the donor. If the donor wishes to keep his identity a secret, the staff of the health institution is obliged to respect the

request. If the donor does not ask for secrecy on his identity the health institution shall keep information on him in a special file. If a child results from the treatment with the gametes from this donor, information on the couple and the child shall be kept in the same file. The offspring may ask for access to this file and the name of the donor upon reaching age 18. Should the child request such information on the donor, the institution is obliged to inform the donor of this as soon as possible.

MAP is reimbursed by the State's social security system but the couple pays the costs in a ratio determined by the Minister. Authorization to practice MAP is granted by the Minister for Health. Authorization for embryo research is given by the Ministry of Health. Icelandic law prohibits the following genetic interventions: the creation of identical twins, sex selection, race selection, the creation of a chimera, ectogenesis, and the genetic intervention on viable or on non-viable human embryos. The creation of human clones is also prohibited.

### Ireland

The Republic of Ireland has not adopted specific legislation to address MAP practices. "General Medical Council Guidelines" issued by the Irish Medical Council (1999) is a guide to ethical conduct, procedures, and fitness to practice. The guidelines stand as the basis for the regulation of treatment. Infertility treatment is provided to married couples. The guidelines state: "There is no objection to the preservation of sperm or ova to be used subsequently on behalf of those from whom they were originally taken" (p. 39). Physicians are advised to provide extensive counseling to couples and

donors when considering third-party donation. Failure to provide such counseling could result in disciplinary proceedings. Techniques such as in vitro fertilization should only be used after thorough investigation has ruled out alternatives. “Any fertilised ovum must be used for normal implantation and must not be deliberately destroyed” (p. 39). Guidelines further state: “The deliberate and intentional destruction of the unborn child is professional misconduct” (p. 39). Physicians are also advised to assist pregnant women who wish to place babies for adoption to contact registered adoption agencies. The guidelines came into effect in November 1999, according to Niall O. Cleirigh of the Department of Health and Children (personal communication, February 15, 2000).

Although physicians are able to provide reproductive medicine services including MAP technologies, third-party involvement is clearly discouraged. Professional sanctions focused on the physicians are used to limit MAP practices in Ireland. A review of Ireland’s responses to the Council of Europe’s (1998, June) study indicates sperm, oocyte, and embryo donation is not allowed nor is surrogate motherhood.

### Italy

Legislation on the regulation of MAP in Italy has been delayed due to its controversial subject matter. On May 26, 1999 a proposed law: *Disciplina della procreazione medicalmente assistita* was approved by the Chamber of Deputies (House of Representatives). The proposed law is listed as No. 4048 in the Senate of the Italian Republic, 13<sup>th</sup> Legislature. Giovanni Salvo (personal communication, May 31, 2001), U.S. Library of Congress legal specialist, checked the progress of the bill in the Italian



Senate. According to Salvo, the Catholic lobby has been against the bill from the beginning. The problems were worked out in committee and the bill made it through the other legislative body. Later a renewed resistance developed in the Senate. The bill remains pending.

The Council of Europe's (1998, June) earlier study indicates Italy has regulations constituted through a 1985 circular issued by the Italian Health Ministry designed to regulate MAP practices carried out in public health structures. When carried out in a facility within Servizio Sanitario, the public health system, MAP is partially reimbursed by health insurance. The most restrictive regulatory process is identified as the Italian Medical Association's 1995 Code of Medical Deontology (Federazione Italiana degli Ordini Dei Medici) prohibiting specific procedures. The earlier 1994 Opinion of the Italian National Bioethics Committee includes concerns regarding unmarried women and couples with unstable relationships.

The performance of MAP on women undergoing menopause, unless premature, is prohibited by Article 41 of the Code of Medical Ethics. Infertility treatment is not available to women who are not involved in heterosexual relationships. MAP practices undergone in the public health structure are limited to stable married couples. Posthumous conception is not allowed. The donation of sperm, ovum, and embryos is not unlawful but surrogate motherhood is prohibited. Although the medical practices carried out in public health facilities are conservative, the private medical practices have not been limited due to the lack of federal legislation. This has resulted in the delivery of

controversial services such as treatment of postmenopausal women.

### Latvia

According to government sources, MAP has been practiced in Latvia since 1996. T. Talents, Vice Secretary of the Ministry, (personal communication, April 25, 2000) reports his ministry has developed draft law on reproductive and sexual health containing a chapter on sperm, ovum, and embryo donation and surrogacy. V. Mekone, Third Secretary, (personal communication, May 12, 2000) also says Latvia is still working on this problem; therefore there are no laws in effect which address MAP practice issues. Until legislation is passed there is no regulation of MAP in Latvia.

### Lithuania

Martynas Pukas (personal communication, December 4, 2001), Ministry of Health identified the only regulatory act pertaining to MAP to be Number 248 signed by the Minister of Health on May 24, 1999. Lithuanian women who receive MAP treatment must be in a civil marriage, and not less than age 18 and not more than age 45 years old. No sperm banks allowed in Lithuania. If insemination is done, the sperm is obtained from the husband using a masturbation method. No third party involvement is allowed. No more than three embryos may be implanted in a woman's uterus. Surrogate motherhood is prohibited. Pukas anticipates changes in legislative acts pertaining to MAP in 2002.

### Luxembourg

No specific legislation to regulate MAP exist. MAP techniques are practiced and

funding is available through health insurance. The fact that an opinion had been issued by the National Advisory Committee on Ethics indicates interest in the quality of practices. The Council of Europe's (1998, June) earlier study recognized the provision in the Civil Code, Article 312/ 1979 which makes it unlawful for a child conceived using artificial insemination to be disowned by the husband.

A detailed essay covering assisted medical reproduction in Luxembourg including pertinent comments on the laws of neighboring nations was written by Doris Woltz, Teaching Judge at Luxembourg. It is entitled "New Reproductive Methods" II and is published in Francois Laurent Circle's Bulletin II, (1999). The companion publication is "Attorney's Position on the Legal System" prepared by Roger Everling, President of the Chamber of the Court Appeals. This material was provided by the Grand Duchy of Luxembourg to the American Embassy as representing current legal opinion, according to Monica Kwiecinski, Political-Economic Affairs, USA Embassy (personal communication, November 24, 1999). Woltz indicates that the laws of Luxembourg as well as France and Belgium deal with the problems of MAP. Woltz views Spain and Great Britain as having instituted legislation which tends to be liberal. The various MAP practices are reviewed in regard to existing codes, and for some practices the ways France or Belgium handles the matter. The access to MAP treatment is not limited through specific legislation.

### Malta

At this writing no legislation on MAP exist in Malta. A Bioethics Committee

meets monthly to discuss issues. It is an ad hoc committee that is not established by statute; therefore, its function is advisory. This group does not have the power to impose parameters or regulate private clinics (B. Gafa, personal communication, April 17, 2000). Professor Maurice Cauchi, chairman of the Bioethics Committee (personal communication, April 18, 2000) says there is “a definite bias against MAP legislation”. The Bioethics Committee has finalized recommendations for third party donors and surrogate motherhood. Cauchi says the controversy surrounding these issues which exist in Malta will make it unlikely these issues will ever appear in law. According to Brigitte Gafa, legal advisor to the Health Department, the Maltese Catholic Church does not accept these practices. The Church has strong control in Malta, and couples, who do receive treatment, go to private clinics where things are handled discretely. No statistics are kept. Surrogacy and ovum or embryo donation are not done (B. Gafa, personal communication, April 17, 2000). The Church appears to see this as not a matter for governmental intervention. Presently MAP appears to be allowed and unrestricted.

#### Netherlands

Reports compiled by the Health Council: Assisted Fertilization, ICSI, In Vitro Fertilization (1997), and IVF related Research (1998) from Dr. Bootsma, Counselor for Health and Welfare are the source of extensive data (personal correspondence, March 9, 2000). Dr. Oudendijk (personal communication, April 11, 2000) says the Special Medical Services Act “regulates the supply of high tech services in Dutch health care.” Dr. Oudendijk provided a copy of the special decree 1998 *Planningsbesluit IVF* which

contains provisions for IVF-centers.

The initial focus of the Netherlands was the professional provision of infertility treatment services through an August 11, 1988 decree amending general regulations at hospital medical installations. Quality of care is addressed through new sections added to regulate laboratories for the generation of embryos in connection with in vitro fertilization, and the storage of embryos. All centers that engage in the in vitro fertilization procedures to produce human embryos must have a license. The 1989 IVF Planning Decree was developed out of the earlier work, and sets forth a framework for the licensing of in vitro fertilization centers. The Medical Treatments Act of October 24, 1997 replaced and updated the earlier Hospitals Act. The Human Subjects Act of February 26, 1998 pertains to medical research.

Procreation is an element of private life and the right to privacy is protected. Both the Dutch Constitution and the European Court of Human Rights provide privacy protections. The provision of infertility treatment and the involvement of a third party are respected as privacy issues. The Netherlands does not limit access to MAP treatment based upon marital status. There is an upper age limit of either 40 or 42 depending upon circumstance. The age limit is tied to the increasing complications that are associated with age, and declining success rates.

Sperm, ovum, and embryo donation are allowed. Surrogate motherhood is allowed when not commercialized. It is illegal for profit to be made from surrogacy. The medical history and other important data are recorded for each donor. The principle

of secrecy is respected in regard to the donor's identity. The majority of treatment requests come from heterosexual couples, but single women and lesbian couples request services. Dutch law does not prohibit services for non-heterosexual females, but the physicians and staff of the various infertility treatment centers often exclude persons other than heterosexual couples.

A supplement to the Penal Code was brought by the September 16, 1993 Law through several provisions dealing with the prohibition of commercial surrogate motherhood (Staatsblad van het Koninkrijk der Nederlanden, No.486, 1993). The performance of assisted reproduction procedures for the purpose of sex-selection for non-medical reasons is prohibited by Order of May 26, 1998 (Staatsblad, No.336, 1998).

#### Norway

The regulation of MAP in Norway is through the Act Relating to the Application of Biotechnology in Medicine: Act No. 56 of August 5, 1994. Both Norwegian and English versions of the Act were provided by the Health and Social Affairs Ministry. K. Sonderland, Department Head, The Royal Ministry of Health and Social Affairs (personal communication, January 10, 2000) advised that administration of the Act is delegated to the Norwegian Board of Health. The Norwegian government has appointed an independent advisory board known as The Norwegian Biotechnology Advisory Board to review problems and suggest ethical guidelines.

MAP treatment services are made available to couples within the context of marriage or a conjugal relationship that approximates heterosexual marriage. It is

suggested that an upper age limit of 38 years is preferable for the birth mother; but no statutory limit exist. Posthumous conception is prohibited. Sperm donation is allowed. The sperm donor remains anonymous. Ovum and embryo donation are not allowed. Surrogate motherhood is prohibited. Sex selection is prohibited except for reasons of a sex-linked hereditary disease. Embryo cloning is prohibited.

### Poland

At this writing, legislation pertaining to MAP has not been adopted. The Council of Europe's (1998, June) earlier study indicates the lack of any regulatory structures. Personal contacts indicate this situation is unchanged. The absence of specific legislation allows physicians to deliver any services judged to comply to general existing medical and legal requirements. Only married heterosexual couples may receive services. No restrictions exist regarding the age of persons receiving treatment. Although MAP practices are generally unregulated, the practice of surrogate motherhood is prohibited. It is also unlawful to financially profit from the donation of gametes. The principle of secrecy is upheld in regard to procreation and donor identity.

The American Embassy in Warsaw suggested contact with The Federation for Women and Family Planning, which focuses on reproductive rights (M. Glazier, personal communication, February 25, 2000). Anti-abortion legislation and embryo protection are significant issues because these procedures are closely related to MAP treatment practices.

## Portugal

MAP is unregulated in Portugal, as of this writing. Due to the absence of laws neither the marital status nor the age of persons seeking MAP treatment are restricted or limited. The activities of sperm banks are regulated by legislative Decree No. 319/1986 passed September 25, 1985. According to Alberto Barros, Vice-President of the Portuguese Society of Reproductive Medicine, (personal communication, July 2, 2001) the practice of artificial insemination with donor sperm has existed since 1985, and in vitro fertilization since 1994. Barros also says oocyte donation and IVF surrogacy are not practiced in Portugal. Due to the lack of legislation neither oocyte donation or surrogacy is unlawful.

The filiation of children born as the result of artificial insemination is covered under Article 1839,3 of the Civil Code. Paternity cannot be disclaimed when the consent of the mother's husband is documented. The Penal Code, Article 168, prohibits artificial insemination if the female does not consent. The donation of sperm is anonymous. Both the identity of the donor and the procedure are kept secret. Access to the medical information of the donor for the purpose of analyzing possible heredity risk to the child is not regulated; therefore, it is possible.

## Romania

As of this writing, Romania has not adopted specific legislation to regulate MAP treatment or to limit access to MAP practices. The absence of specific law translates to a lack of prohibitions against most MAP practices. This includes sperm, ovum, and



embryo donation as well as surrogacy. Postmortem conception is unregulated. No restrictions in regard to marital status or upper age limits have been set.

Romania, as a Council of Europe nation-state, signed the Convention on Human Rights and Biomedicine in 1997. Treaty 164 has been signed, ratified, and placed into force. One provision of the treaty is Article 14: non-selection of sex. This marks a step toward the regulation of medically assisted reproduction.

### Russia

The regulation of MAP in Russia is through the Act on Artificial Fertilization (Act No.55/1996). Gudridur Thorsteinsdottir, the director of the legal department of the Russian Ministry of Health and Social Security, (personal communication, October 20, 1999) supplied an English translation of a Regulation on Artificial Fertilization dated September 30, 1997. Thorsteinsdottir says the Regulation is the same as the Act plus more rules. The Regulation gives the decision to approve MAP practices to the physician. If the physician has concerns about the social conditions of the couple, an opinion is requested from child welfare authorities. A committee appointed by the Minister of Health and Social Security composed of a lawyer, a physician, and a social worker who serve for four years review any complaints and issue a decision, which is final.

No requirements related to the marital status for persons requesting infertility treatment exist. The Regulation suggests that the couple reside together for three continuous years. There is an upper age limit of 42 years for women or 45 years if

gametes are in storage. The upper age limit for men is 50 years. Posthumous conception is not allowed. Surrogate motherhood is prohibited. Sperm and oocyte or ovum donation are allowed. Embryos may be created using in vitro fertilization and placed in storage. The embryo can only be implanted in the womb of the woman the oocyte came from or the wife of the man who contributed the sperm. If the marriage or relationship ends or a spouse dies, the embryo is destroyed.

Records are kept on the donor's medical history and other important characteristics. The mother may request information on the donor and his nationality. The donor may choose to remain anonymous or permit information to be made available if requested by the offspring starting at age 18 years. If the offspring does request information, the institution should notify the donor.

### Slovakia

MAP related regulatory legislation pertains to artificial insemination only. The 1983 regulation of the Health Ministry deals with homologous and heterologous artificial insemination. The 1994 Health Care Law prohibits embryo cloning.

Dr. Laco Marsik (personal communication, May 23, 2000) of the Center for Artificial Reproductive Technology (ART) at the Teaching Hospital, Bratislava, Slovakia says: "there are no restrictive laws in ART in the Slovak Republic, but, on the other hand, there are no laws dealing with problems in ART." "So we can behave like everything is loved what is not prohibited, but it is always not the best way." Marsik says Slovakia has a sperm bank and egg donation is possible but rarely used. According

to Marsik, surrogate motherhood is not used. No restrictions exist and no laws exist to solve the problems in these complicated relations (L. Marsik, personal communication, May 23, 2000).

Slovakia has three state and two private centers for human assisted reproduction. According to Gabriel Tocka, Foreign Relations, Slovak UN Mission, (personal communication, June 22, 2000) the regulatory guidelines are based on Council of Europe recommendations. Assistance in infertility is covered under Act No.7/1993 and Law No.9/1993, which establishes national health insurance as compulsory for all citizens.

#### Slovenia

Freedom of choice in childbearing is guaranteed under Article 55 of the Constitution of Slovenia. The Act on medical measures allowing free choice is from 1977 (Ur.1.SRS, No.11/77). The Act regulated artificial insemination only. Dr. Vlasta Moenik Drnovsek, Ministry of Health, (personal communication, May 23, 2000) stated: "The first draft of a new act on treatment of infertility procedures of biomedically-assisted procreation was prepared in 1996". In March 2000 a draft act based upon international conventions and recommendations was published for a second reading in Parliament. The draft act was still submitted to changes effective May 2000. Dr. Vlasta Moenik Drnovsek, Ministry of Health, (personal communication, March 19, 2002) confirmed the Infertility Treatment and Biomedically Assisted Procreation Procedures Act, Official Gazette of the Republic of Slovenia No. 70/2000 was adopted July 2000 and published in August 2000. The act came into force thirty days after publication and there

have been no amendments (V.M. Drnovsek, personal communication, March 19, 2002).

“In 1998 Slovenia ratified the Convention on Human Rights and Biomedicine elaborated by the Council of Europe opened for signature in Oviedo, 1997.” “A Protocol on embryos is being prepared to this Convention that Slovenia will also ratify” (V.M. Drnovsek, personal communication, May 23, 2000).

MAP practices are available to couples of child-bearing age within the context of marriage or a conjugal relationship that approximates heterosexual marriage. Sperm donation is allowed. This practice is addressed in earlier legislation. Posthumous conception is not done. Ovum donation is allowed and practiced. Embryo donation and surrogacy are not done. All these issues are included in the legislation.

### Spain

The regulation of MAP in Spain is through Act No. 35/1988 Artificial Procreation. The companion legislation is Law No.42 of December 28, 1988 on the donation and use of human embryos and fetuses, or their cells, tissues and organs. The two statutes are to be interpreted within the context of the General Health Act, which regulates the Spanish public health system.

Spanish law does not limit access to infertility treatment based upon marital status. Single women may receive treatment if over age 18 years and judged to have full legal capacity. There are no other age restrictions. Posthumous conception by artificial insemination of sperm of the deceased spouse or partner is allowed if the consent of the deceased was granted within six months of the date of death in a will or alternative

document. Sperm and ovum donation is allowed. Embryo donation is prohibited. Surrogate motherhood is not legally restricted but delivery decides maternity, i.e., the birth mother is the legal parent. Donation is treated as anonymous. A record of the donor's medical history and other important information is added to a coded list in the National Register of Donors.

Spanish law prohibits cloning. Law No.35/1988 specifically identifies embryo and oocyte cloning as unlawful, and with criminal sanctions.

### Sweden

MAP is strictly regulated in Sweden. Law No.1140 of December 20, 1984 on artificial insemination was the first to require that information on the sperm donor be recorded in the hospital's special register and made available to the offspring upon maturity when requested. The Swedish In Vitro Fertilization Act of 1988 is currently the basis for MAP practice. This law was passed June 8, 1988 and entered into force January 1, 1989. In vitro fertilization is available to couples within the context of marriage or a conjugal relationship that approximates heterosexual marriage. The couples own sperm and ovum must be used. Ovum fertilized outside the body must be implanted only in the womb of the woman from whom it came. Surrogacy is prohibited in Sweden. Neither ovum nor embryo donation is allowed. No national statutory age limit exist; but the various county councils have established upper age limits between 35 and 37 years of age.

Swedish Law No. 115 adopted March 14, 1991 prohibits the cloning of embryos

and oocytes. Criminal sanctions are included under the law.

### Switzerland

The regulatory basis for MAP in Switzerland is the Federal Law for Medically Assisted Reproduction adopted December 18, 1998. The legal document written in German was sent by Dr. H. Schmid, Office of Federal Justice (personal communication, October 27, 1999). German to English translation completed by Sabine Winter, who is from Germany and was recommended by the University of North Texas Foreign Language Department.

One purpose set forth in the law is to determine under what circumstances the procedures of medically-assisted reproduction can be applied to humans. The document sets forth both guidelines and the authority for a commission to be set up to address this subject matter. A National Ethics Commission was formed by the Senate to establish guidelines for the law, to find holes in existing laws, to inform the public about important findings, to promote discussion of ethical questions, and to serve as an advisory body to House of Representative, Senate, and the Cantons upon request.

MAP is available to couples of child-bearing age within the context of marriage or a conjugal relationship that approximates heterosexual marriage. Donated semen can only be used in the case of married couples. Posthumous conception using the sperm of the deceased spouse is prohibited. The law states that semen cells or impregnated eggs cannot be used after the donor's death. The donation of sperm and ovum is allowed but embryo donation is not. Surrogate motherhood is prohibited. It is required that specific

data be recorded on the donor. This includes name, birth date, birth place, present and permanent address, nationality, occupation, education, and physical appearance. The date of the donation and test or exam results are also recorded. When an offspring reaches age 18, information about the donor's physical appearance and personal information may be requested. When the child requests information about the donor, the agency will first contact the donor if possible. If the donor rejects personal contact, the child is informed and educated regarding the donor's right to privacy, and his family's right to protection. If the child continues to request the information, it is released.

Embryo and oocyte cloning is prohibited under the authority of the 1998 Law.

Criminal sanctions are included.

### Turkey

Turkish law strictly regulates MAP. The In Vitro Fertilization and Embryo Transfer Centers are under the authority of the Health Ministry. The eligibility requirements for couples seeking infertility treatment are found in the Official Gazette, No. 22822 of November 19, 1996. A translation by Belma Bayar, Foreign Law Specialist, Library of Congress, (personal communication, May 31, 2001) identifies three requirements. The couple must be married, they must not have children, and they must have a physician's statement indicating that all alternatives have been explored and the couple requires this level of intervention.

Women may not be more than forty years of age. Surrogate motherhood is not lawful nor are any donations allowed. Embryos can be frozen if both spouses consent.

The maximum storage period is three years. Death of a spouse, divorce, or the mutual request of both spouses may result in the destruction of the frozen embryo. Research is only permitted on animals.

Turkey signed the Council of Europe's Convention on Human Rights and Biomedicine in 1997. Treaty No.164 includes Article 14 on the non-selection of sex.

### Ukraine

As of this writing, the Ukraine has not adopted specific legislation to regulate MAP treatment or to limit access to MAP practices. Dr. Borys Uspensky and Oleg Y. Bisyarin of the Policy program funded by USAID in Kiev provided consultation. This included contacts with Dr. W. Rudyi, a medical physician and attorney, working for the Ukrainian Parliament. The lack of legislation translates to a lack of prohibitions against most MAP practices. No restrictions in regard to marital status or upper age limits. According to Bisyarin (personal communication, May 23, 2000), donation of sperm, oocyte, and embryos are not unlawful since the practices are not specified under Ukraine law. Bisyarin indicates these practices are provided in the Ukraine. Although no information indicates postmortem conception or surrogate motherhood occur in the Ukraine, both are unregulated and therefore must also be considered lawful.

### United Kingdom

The regulation of MAP in the United Kingdom is through the 1990 Human Fertilisation and Embryology Act. The Human Fertilisation and Embryology Authority (HFEA) and Code of Practice based on this statute are the basis of MAP practice in the



United Kingdom. The focus of the United Kingdom is the professional provision of infertility treatment services and the quality of care. The treatment centers providing MAP technologies are licensed by the HFEA. Access to treatment is flexible, with no marital status requirements and the services are open to single females. No statutory requirements on age have been established.

Sperm, oocyte, and embryo donation are allowed. Codes of practice allow for small payments to donors to cover expenses and inconvenience. Payments are not considered financial gain. Surrogate motherhood is allowed when not commercialized for profit. An earlier Surrogacy Arrangements Act 1985 was adopted due to the rise in public concerns. The commercial aspect of surrogacy was made unlawful. HFEA supports handling surrogacy in a manner to ensure no financial gains result. When a third-party donor is involved, the principle of the secrecy of procreation is respected as well as the identity of the donor. The 1990 HFEA Act makes unauthorized disclosure of the donors' names a criminal offence with a maximum penalty of two years imprisonment and a fine. All MAP related research projects are approved and monitored by the HFEA.

### Australia

The National Health and Medical Research Council (NHMRC) was established by the NHMRC Act of 1992. It is a statutory authority under the Commonwealth Minister for Health and Family Services. C. Clutton, Director of Council Support and Health Ethics Section, NHMRC (personal communication, November 20, 1999) shared

the NHMRC “Ethical Guidelines on Assisted Reproductive Technology” (1996), an overview of the Australian regulatory structure, and the internet sites for each state or territory. Copies of Australian laws are available from the internet.

The Victorian Parliament enacted the first legislation to regulate MAP in 1984. The Medical Procedures Act of 1984 made it a criminal offense to conduct MAP procedures that failed to comply with the law. The Act required practices to be done in a hospital facility. The written consent of the married couple was required. Prior medical history must have documented that pregnancy could not be achieved another way. Donors and their spouses must provide written consent. A donor must not benefit financially. The 1984 Act was later superseded by the Infertility Treatment Act of 1995. This legislation retains the “criminal model” but also provides licenses and approvals. The new law provides a range of information to the participants. Non-identifying data is available on the donor to the proposed parents and general non-identifying data are available for donors. When the offspring reaches age 18 years, he or she may request information about the donor. If the donor is agreeable, the offspring is given information about the identity of the donor.

The regulatory legislation adopted in South Australia: The Reproductive Technology Act 1988 and in Western Australia: Human Reproductive Technology Act 1991 are based on licensing models, i.e., it is an offense to undertake specific practices without obtaining the associated license. The emphasis and approach differs from the Victorian law.

The Surrogacy Contracts Act of April 20<sup>th</sup>, 1993 (Act No.4/1993) Tasmania, Australia prohibits individuals from introducing prospective parties; inducing a person to enter a contract; negotiating a contract; making or receiving a payment; and, in other ways, participating in the process. Tasmania's 1996 case on inheritance law *Estate of K* is ground-breaking in the area of posthumous conception. A decision was made that an embryo implanted after the death of the father would have an equal share in the inheritance along with a child resulting from an embryo fertilized at the same time but implanted in the womb and born prior to the father's death, plus other natural offspring.

The Northern Territory, New South Wales, Queensland, and Tasmania have not adopted specific legislation to regulate MAP. Since no law exists at the state or territory level, MAP practices in these areas are regulated by the alternative guidelines applicable in Australia.

The Fertility Society of Australia's Reproductive Technology Accreditation Committee (RTAC) has published a Code of Practice. The legal status of all children born as the result of MAP technology has been clarified through legislation adopted in the states and territory of Australia.

MAP treatment services are available to couples within the context of marriage or a conjugal relationship that approximates heterosexual marriage. Australia mandates that age cannot be the reason for infertility. Sperm, oocyte, and embryo donation is allowed in Australia.

## Canada

Allan Rock, Minister of Health, (personal communication, January 10, 2001) says reproductive and genetic technologies (RGTs) “are of great interest to the Canadian public and the federal government is moving ahead with its work on this complex issue.”

The first federal Canadian initiative was The Processing and Distribution of Semen for Assisted Conception Regulations which falls under the Food and Drugs Act and came into effect in June 1996, and was amended in March 2000. According to Rock the previously proposed legislation, Bill C-47, the Human Reproduction and Genetic Technologies Act, was tabled. The bill failed to complete the legislative process with the call of the federal election in 1997. Rock indicated there was no legislation to prohibit or regulate RGTs, but there was an “interim voluntary moratorium declared by the federal government in July 1995.” The voluntary moratorium is still in effect in Canada and calls upon the medical and research communities in Canada to refrain from applying nine RGTs identified as raising serious ethical and social problems, including cloning of human embryos. Rock believes there is a need to balance the diverging viewpoints. Canadian health officials are presently analyzing the input gathered from provinces, territories, and various stakeholder groups.

The moratorium prohibits the following practices: sex selection for non-medical purposes; buying and selling of eggs, sperm and embryos, including their exchange for goods, services or other benefits, but excluding the recovery of expenses incurred in the

collection, storage and distribution of eggs, sperm and embryos for persons other than a donor; germ-line genetic alteration; ectogenesis (maintaining an embryo in an artificial womb); cloning of human embryos; creation of animal-human hybrids; retrieval of sperm or eggs from cadavers or fetuses for fertilization and implantation, or research involving the maturation of sperm or eggs outside the human body; and commercial preconception or “surrogacy” arrangements.

The Civil Code of Quebec, December 18, 1991, has a section titled Medically Assisted Procreation. The Code prohibits surrogate mother contracts. Although no specific federal law prohibits surrogacy contracts, if challenged a surrogacy contract would probably be found not to comply with Canadian contract law or Family Law principles.

The marital status or upper age limit of people seeking infertility treatment is not regulated in Canada. The British Supreme Court held in *Anderson v. Luoma*, 14 D.L.R. 4<sup>th</sup> 749 (November 1984) that the Family Relations Act, R.S.B.C. 1979, c. 121, does not purport to affect the legal responsibilities, which homosexuals have to each other or to children born to one of them as the result of artificial insemination. A donor registry to record non-identifying information, i.e., ethnic origin, medical history, education, and religion tracks all offspring resulting from MAP practice.

### New Zealand

The National Ethics Committee on Assisted Human Reproduction (NECAHR) was established by and accountable to the Minister of Health under section 46 of the

Health and Disability Services Act of 1993. The objectives or role of the committee is to review proposals to ensure ethical aspects are considered; to ensure rights of patients, donors, and offspring are protected; to develop protocols and guidelines to assist regional ethics committees; and to provide the Minister of Health and National Advisory Committee on Health and Disability Service Ethics with advice on MAP issues.

According to Eric Harris, analyst for the Ministry of Health, (personal communication, December 13, 1999) the NECAHR was developing guidelines for use by fertility clinics in New Zealand. Harris advised that all fertility service providers must be medical practitioners registered under the Medical Practitioners Act 1995. The Royal New Zealand College of Gynaecologists and Obstetricians is the professional body for health professionals specializing in fertility services. The policy is that all providers must be accredited by the Reproductive Technology Accreditation Committee (RTAC) of the Fertility Society of Australia. RTAC accreditation requires that fertility clinics have ethical approval for all innovative treatments and procedures; therefore ethical approval from NECAHR must be requested by the fertility clinics.

New Zealand has federal regulatory legislation on MAP pending. According to Jenny Hawes, an analyst for the Ministry of Health, (personal communication, October 25, 2001) the government recently agreed to develop new legislation out of the two bills under consideration. The new law was being drafted in late 2001. The two competing bills before the Health Select Committee were the Human Assisted Reproductive Technology Bill (the bill of a private member) introduced in 1996 and the Assisted

Human Reproductive Technology Bill introduced in 1998.

According to Hawes, surrogacy is considered an innovative practice in New Zealand. The approval has been given by NECAHR for non-commercial surrogacy used in connection with in vitro fertilization, i.e., gestational surrogacy. Each request for treatment is reviewed separately (J. Hawes, personal communication, October 25, 2001).

New Zealand law must ensure that the cultural requirements of the Maori are recognized when appropriate. The Treaty of Waitangi requires policymakers to take into account the significance of *whakapapa*. This concept is impossible if there is suppression of information. The offspring may have more of an interest in contact with half-siblings than the donor alone. Indigenous Maori value whakapapa or genealogy because the ability to cite tribal membership is necessary in order to be listed on the Maori electoral roll or to qualify for rights in land claims.

The Status of Children Act (No.185/1987) of July 20<sup>th</sup>, 1987 provides for the status of persons conceived as the result of certain assisted procreation procedures. If the husband consents to his spouse's artificial insemination by donor then the child produced is his child. It is not the child of the donor. Where a woman becomes pregnant as the result of a donor egg or donor embryo implantation, the woman shall for all purposes be the mother of the child.

### Conclusion

This concludes the detailed description of each nation's MAP status to satisfy the first objective of the study. The legislation adopted and regulatory structures

implemented vary in regard to the priorities emphasized. The concerns of some nations are health risk based whereas others view the morality of this approach to be in question. A division exists over the importance granted to individual privacy versus social consciousness. These factors along with economic circumstances influence actions taken, as well as, inaction. The level of economic development and the stability of the health care structure are closely related issues.

The following task is to determine the role of all of these factors in influencing MAP legislation which is the study's second objective. The next chapter reports the results of testing the relationships between these variables. The set of hypotheses or leading ideas are evaluated in light of these results.



## CHAPTER V.

### FINDINGS: FACTORS ASSOCIATED WITH DIFFERENT REGULATIONS

This chapter summarizes the relationship between the study independent variables and the dependent variable of legislative status as well as the other eight dependent variables on the regulations for assisted procreation. The analysis attempted to determine to what extent regulatory law and policy are associated with culture, custom, economics, and demographic trends. Outcomes are organized in tables to enable comparison. As previously discussed, the Council of Europe nations were treated as a population rather than a sample due to their common geographical and political circumstances. This chapter assesses how the data supports the hypotheses.

#### The Impact of Language-Spoken and Religious Affiliation

The influence of national identity on the regulatory structures adopted by the nation-states was explored through the independent variables of dominant language-spoken and religious affiliation. Language and religion are not the only indicators of national influences, but sharing the same language and religion was considered to increase the tendency to endorse similar policies and regulations on MAP. The influence of religion is often interwoven with the language-spoken but exceptions occurred. For example the Roman Catholic nations of Ireland and Malta differ on many issues from the Protestant nations of the United Kingdom, Australia, Canada, and New Zealand. Yet all these nations share a common language.

Throughout the analysis, the elimination of the three British Commonwealth

nations from the analysis did not impact the overall results. The discussion that follows will primarily note the differences that were substantial when these three nations were excluded from the analysis. The lambda values were calculated for the full thirty five countries in addition to the thirty-two European nations, and it was found that the outcome was either the same or nearly the same. The lambda statistic was used to examine the relationship between the dependent variables and the nominal independent variables. Lambda is a proportional reduction of error (PRE) measure, which means knowing one variable enables prediction of the other.

Table 1 displays the lambda values for the dependent variables and the independent variables language group and religious affiliation for the full thirty-five nation-states. In this situation knowing either the language group, or the religious affiliation, helps predict the values of the dependent variables in almost all cases. For example knowing the nation-states language group allows a twenty-five per cent improved prediction of the country's legislation status. Next the details of the relationships considered strong or extremely strong will be reviewed as it relates to the study's hypotheses.

Hypothesis#1: Nations sharing the same dominant language-spoken will have MAP regulations with a similar level of restrictiveness.

The legislative status was the first measure of the dependent variable. The nation-states were placed in one of four categories determined to most accurately describe their

Table 1: Relationship Between Language Groups and Religious Affiliations and the MAP Legislation Status and Regulation for all 35 Nations

<u>Dependent Variables</u>	Language Group	Religious Affiliation
	Lambda	Lambda
Legislative Status	.25	.05
Marital Restrictions	.40	.30
Age Restrictions	.13	.13
Posthumous Conception	.44	.28
Donor Insemination	.00	.17
Ovum Donation	.13	.13
Embryo Donation	.58	.33
Surrogate Motherhood	.33	.07
Policy on Handling Donors	.24	.33

status. As previously described (see Figure 2) the response categories range from unregulated to federal legislation, which regulates MAP.

Legislative Status and Language Group. The regulatory status and nation's associated language group are related. Knowledge of the language group associated with the nation-state allows a twenty-five percent improved prediction of the legislation status.

The exclusion of the three British Commonwealth (Australia, Canada, New Zealand) nations yields a twenty-four percent improved prediction of the legislation status. Thus indicating the exclusion of the three British Commonwealth states fails to vary the outcome significantly.

Sixteen nation-states or forty-six percent have passed legislation on MAP. All four of the nations in the Norse language group (Denmark, Iceland, Norway and Sweden) have passed laws regulating MAP. Similarly all three of the nations in the German language group (Austria, Germany, and Switzerland) have adopted laws. The Norse and German language groups represent forty-four percent of the nations with legislation. Two nations in the Baltic/Uralic language group (Estonia and Hungary) and two nations in the Slavonic language group (Russia and Slovenia) have MAP legislation. The remaining five nation-states: the Netherlands (Germanic), France (Northern Romance), Spain (Romance), United Kingdom (English), and Turkey are in different language groups.

The group of eight nations where the basis of regulation is ordinances or guidelines or only have partial legislation describes twenty-three percent of all the countries. Three nations in the Slavonic language group (Bulgaria, Czech Republic, and Slovakia) make up the largest language group in this category. Two countries in this category are in the Germanic language group (Belgium and Luxembourg). Another two English-speaking countries (Ireland and Australia) fall in this category. The eighth nation is Lithuania in the Baltic language group.

The pending legislative action category includes eleven percent of the countries or a

total of four nations. Two countries are English-speaking: New Zealand and Canada. Italy, a nation-state in the Romance language group, has the controversial Bill No.4048 stalled in the Italian Senate. Latvia in the Baltic language group has a proposed law under study.

A total of seven nation-states or twenty per cent of all countries are unregulated. Two nation-states in the Slavonic language group, Poland and the Ukraine, have no law pertaining to MAP. Two nations in the Romance language group (Portugal and Romania) do not have any regulation. The remaining three unregulated nations are from different language groups. Finland is in the Uralic language family. Malta is an English-speaking country. Greece is the only nation where Greek is spoken.

In summary, the countries in the German, Norse, and Northern Romance language groups all have regulatory legislation and make up half of the nations with legislation. The unregulated nations are a much smaller group, only the Slavonic and Romance language groups have more than one unregulated nation.

Marital Restrictions and Language Group. Access to infertility treatment is often limited according to the conjugal circumstances of the person. The nation-states were divided into the three categories of no restrictions, heterosexual cohabiting male and female, and married couples only (see Figure 3). The marital status restrictions and the nation's associated language group are very strongly related. Knowing the language group enables a forty percent improved ability to predict marital status regulations. The exclusion of the three British Commonwealth nations (Australia, Canada, New Zealand)

results in a slight increase to a forty-four percent improved ability to predict marital status.

All three of the nations in the Germanic language group (Belgium, Luxembourg, and the Netherlands) have no requirements. The three nations in the Romance language group (Italy, Portugal, and Romania) also have no requirements. Half or three of the English-speaking nations (United Kingdom, Canada, and New Zealand) have no requirements. Three nations in the Slavonic language group (Bulgaria, Russia, and the Ukraine) have no requirements. Two countries of the Baltic/Uralic language group (Estonia and Latvia) have no requirements.

All four of the nations in the Norse language group (Denmark, Iceland, Norway and Sweden) require that couples be married or cohabiting male and female. The same requirement is found in the three nations in the German language group (Austria, Germany, and Switzerland). The Northern Romance language group (France) and the Greek-speaking (Greece) have the same requirement. Two nations from the Uralic language family (Finland and Hungary) also have this requirement. The English-speaking nation of Australia falls in this classification. Of the Slavonic countries, forty-three percent (Czech Republic, Slovakia, and Slovenia) require couples be either married or cohabiting male and female.

The married couples only requirement applies to a smaller group. Turkey and two English-speaking nations, Ireland and Malta, require marriage. Italy of the Romance language group requires marriage to receive infertility treatment in state centers. Lithuania from the Baltic language group also requires marriage. Poland, in the Slavonic language

group, requires marriage. Other than the Muslim nation of Turkey, all these countries have one thing in common. They have large Roman Catholic populations.

In summary the association between language group and the regulatory handling of restrictions on marital status requirements is one of the strongest. This association indicates an important cultural connection which influences the nation's regulatory policy.

Posthumous Conception. Posthumous conception by the artificial insemination of the sperm of a deceased man is prohibited in forty-nine percent of the nation-states (refer to Figure 5). Knowing the nation-states's language group allows a forty-four percent improved prediction of the country's legal or regulatory handling of posthumous conception. Exclusion of the three British Commonwealth nations results in a slightly reduced lambda value of .40.

The four Norse language group nations (Denmark, Iceland, Norway, and Sweden) prohibit posthumous conception. All three of the nations in the German language group (Austria, Germany, and Switzerland) prohibit posthumous conception. The Northern Romance language group (France) prohibits posthumous conception. In addition posthumous conception is prohibited by over half the Slavonic language group (Bulgaria, Czech Republic, Slovakia, and Slovenia). Two of the Baltic/Uralic language group (Finland and Lithuania) prohibit posthumous conception. Another two English-speaking nations (Ireland and Malta) prohibit posthumous conception. Estonia from the Uralic language family prohibits posthumous conception with one exception, i.e., insemination with the sperm of the deceased spouse thirty days or less from the date of death.

The status of posthumous conception is “not specified” in three countries from different language groups: Hungary from the Uralic language family, Russia a Slavonic nation, and Turkey have no regulations pertaining to posthumous conception.

The three Germanic language group nations (Belgium, Luxembourg, and the Netherlands) have no law against posthumous conception. Three of the Romance language nations (Portugal, Romania, and Spain) allow posthumous conception. Four of the English-speaking countries (United Kingdom, Australia, Canada, and New Zealand) allow posthumous conception. Posthumous conception is not unlawful in Greece. It is also not unlawful in two nations of the Slavonic language group (Poland and the Ukraine).

Embryo Donation and Language Group. Embryo donation is the most controversial of the MAP practice regulations involving third party donation. Of the nations in this study twelve prohibit embryo donation and twenty-three allow the practice. The strongest associations between the two independent variables and the dependent variables displayed in Table 1 occurred from embryo donation. Knowing the language group enables a fifty-eight percent improved prediction of the regulatory handling of embryo donation. The practice is prohibited in all four Norse language group nations as well as the three German-speaking nations. One Slavonic nation (Slovenia), one English-speaking nation (Ireland), and two Baltic/Uralic nations (Estonia and Lithuania) do not allow embryo donation. Turkey also prohibits embryo donation.

The three Germanic group nations (Belgium, Luxembourg, and Netherlands) allow embryo donations. The Romance group nations (Italy, Portugal, Romania, and Spain) and



the Northern Romance nation of France do not prohibit embryo donation. Six nations or eighty-six percent of the Slavonic language group allow embryo donation. Five or eighty-three percent of the English-speaking nations allow embryo donation. Sixty percent of the Baltic/Uralic group nation permit embryo donation. Greece allows embryo donation.

Surrogate Motherhood and Language Group. The most controversial of all the MAP practices is surrogacy (see Figure 9). Knowing the language group enables a thirty-three percent improved prediction of the regulatory handling of surrogate motherhood. The elimination of the British Commonwealth nations results in a slightly smaller .25 lambda value. This decrease is most likely due to a greater tolerance for surrogacy in Australia and New Zealand as compared to the lack of tolerance found in the Catholic countries of Ireland and Malta. The practice is prohibited in one English-speaking nation (Ireland).

All nations in the Norse, German, and Northern Romance language groups prohibit surrogacy as does Turkey. Six nations of the Slavonic language group prohibit surrogacy. The Baltic/Uralic language group nations of Estonia, Hungary, and Lithuania prohibit surrogacy. One nation in the Romance language group (Italy) prohibits surrogacy. The eleven countries that do not have laws or guidelines to regulate surrogacy are spread among the language groups. The English-speaking nations of the United Kingdom and Australia plus the Netherlands from the Germanic language group have legislation which allows surrogate motherhood if not commercialized for profit. The Romance group nation of Spain allows surrogacy but delivery decides maternity.

In summary surrogacy is quite controversial. Twenty of the thirty-five nations

prohibit the practice. The fact that eleven nations have no pertinent legislation does not indicate the practice is being carried out in those nations. Gestational surrogacy requires advanced medical technology which is not readily available in all areas. The nation language group is strongly associated with the regulatory handling of surrogacy but religious affiliation was not.

Donor Policy and Language Group. The handling of donors is a major area of disagreement and very strong opinions (see Figure 10). Knowing the language group enables a twenty-four percent improved prediction of the regulatory handling of third-party donors. Elimination of the three British Commonwealth nations yields a slightly reduced ability to predict twenty-two percent.

The German-speaking countries of Austria and Germany support the child's right to know their origin. Switzerland shares this view; however, donors privacy rights are also respected. Sweden, of the Norse language group, strongly supports the child's right to know, donors do not have the option to remain anonymous. Iceland, also in the Norse group, allows the donor to decide if his identity can be shared later or it is to remain secret. Recently, Australia has adopted new law which supports this outlook. The remaining countries of Europe support the anonymous donor perspective.

Supplemental Statistical Analysis. Language group collapsed to three families: Germanic, Romance, and Slavonic/Other and the dependent variables collapsed to two categories (see Appendix C) results in one lambda value over 0.2. Knowing which of the three families a nation falls in allows a twenty-one percent improved prediction of that

nation's policy on handling donors. When language group is collapsed to two categories: Germanic and Other there are no strong relationships indicated.

Support for Hypothesis #1: The findings confirm hypothesis #1. A tendency does exist for nations in the same language group to share regulations of a similar level of restrictiveness. The basis for this is the connection between shared language and shared cultural roots thus serving as a basis for common customs. These customs appear to influence decision making, particularly in an area of a sensitive nature such as procreation. Other shared life experiences function to color the groups perspective regarding ways of handling issues and priority setting. It would appear that the more sensitive the topic the greater the influence. This is reflected in the lambda values of all three of the most sensitive practices: embryo donation (.58), posthumous conception (.44), and surrogate motherhood (.33). These outcomes suggest that decisions involving procreation and the best interests of progeny are associated with cultural influences as reflected by language group affiliation.

The German-speaking nations and the Scandinavian nations in the Norse language group are especially clear examples. These nations tend to agree on most MAP issues. The nations of the Norse language group also share the religious affiliation, i.e., Evangelical Lutheran. For example, the German-speaking nations of Germany, Switzerland, and Austria, as well as Denmark, Iceland, Norway, and Sweden of the Norse language group, all have federal legislation to regulate MAP. Also, these same nations prohibit surrogate motherhood, posthumous conception, and embryo donation. In

comparison the Germanic language group composed of the Netherlands, Belgium, and Luxembourg have much less restrictive regulations, leaving more to personal choice.

Hypothesis #2: Nations who are predominantly Roman Catholic are less likely to have MAP legislation than nations who are not predominantly Roman Catholic.

Religious affiliation has a strong or better relationship with four out of nine dependent variables as indicated by lambda values in Table 1. Next these relationships will be reviewed.

Legislative Status and Religious Affiliation. Based upon lambda values virtually no relationship exists between legislative status and religion. The legislative status and the country's religious affiliation shows a very slight tendency for Roman Catholic countries to lack regulation and Protestant countries to have laws. Of the Roman Catholic countries twenty-five percent are unregulated in regard to MAP. Of the Protestant countries eighteen percent are unregulated in regard to MAP. Of the sixteen nations with legislation, twenty-seven percent are Roman Catholic (Austria, France, Hungary, and Spain), sixty-seven percent are Protestant (Denmark, Estonia, Germany, Iceland, Netherlands, Norway, Russia, Slovenia, Sweden, Switzerland, and the United Kingdom), and seven percent or one nation (Turkey) is Muslim.

Of the Protestant denominations, the Evangelical Lutheran Church is the only one that has a clear majority of affiliations of its citizens in more than one nation. The populations of the nation-states Denmark, Finland, Iceland, Norway, and Sweden have between eighty-five and eighty-nine percent affiliation with the Evangelical Lutheran

Church. All but Finland have adopted MAP regulatory legislation.

Marital Status and Religion. Knowing the religious affiliation enables a thirty percent improved prediction of the restrictions on marital status. All five of the nations with an Evangelical Lutheran majority require that couples be married or a cohabiting male and female.

The twelve Roman Catholic nations are equally divided between the three categories. The four Catholic countries with no requirements are Belgium, Luxembourg, Portugal, and Spain. The four Catholic nations of Austria, France, Hungary, and Slovakia require that couples be married or cohabiting male and female.

The six nations which require marriage are the Muslim nation of Turkey, and the Roman Catholic nations of Ireland, Italy, Malta, and Poland; and Lithuania. Lithuania is the only Protestant nation that requires marriage. Ethnic Lithuanians are mostly Roman Catholic, but the ethnic Russians who are Orthodox Russian and other groups result in Lithuania's classification as Protestant.

In summary, a strong association exists between religion and restrictions on marital status. This link, however, is not as strong as the link between language group and marital restrictions.

Posthumous Conception and Religion. Knowing the nation-states's language group allows a twenty-eight percent improved prediction of the regulatory handling of posthumous conception. This outcome is largely attributed to the clear tendency of Christian nations with the same majority denominations to group together, e.g., all five

Evangelical Lutheran nations prohibit posthumous conception. The language group factor has a much stronger association.

Embryo Donation and Religion. Knowing the religious affiliation enables a thirty-three percent improved prediction of the regulatory handling of embryo donation. Of the five Lutheran nations, four prohibit embryo donation and one (Finland) does not. This may be due to the lack of regulatory structure in Finland rather than actual practice. Of the twelve Catholic nations, Austria and Ireland prohibit embryo donation, the remaining ten nations have not acted to prohibit this practice.

In summary the regulatory handling of embryo donation has a strong association with the nation language group and religious affiliation. Their associations with embryo donation were the strongest among of all the dependent variables. In comparison the variables donor insemination and ovum donation do not display a strong relationship. This is primarily due to sperm donation being widely accepted. The practice has existed for a long time and is allowed in twenty-nine nations. The lambda value .17 for religious affiliation and donor insemination is small but the three nations which prohibit this practice, Turkey, Ireland, and Lithuania, point to a likely connection, i.e., the influence of religious conservatism. Ovum donation is a more recently adopted practice which is more complex, but is allowed in twenty-seven nations.

Donor Policy and Religious Affiliation. Knowing the religious affiliation allows a thirty-three percent improved prediction of the regulatory handling of third-party donors. This association is interpreted as an extremely strong relationship. In comparison the

language group has a strong relationship (lambda value .24). Donor policy is the only dependent variable shown to have a stronger relationship with religious affiliation than language group. The decision-making does not as consistently fall according to language group and the differences tend to be along the religious divisions, e.g., the Catholic nations of Belgium, France, Hungary, Italy, Poland, Portugal, and Spain support anonymous donations but disagree on other issues.

Supplemental Statistical Analysis. Religious affiliation collapsed to two groups: Catholic and Other Christian and the dependent variables collapsed to two categories (see Appendix C) results in lambda values of .00 with one exception. Collapsed donor policy and religion results in a .14 lambda value.

Support for Hypothesis #2: There is a slight tendency for Protestant countries to be more likely to have MAP laws in place and Roman Catholic countries to lack MAP regulation. Of the Roman Catholic nation-states twenty-five percent are unregulated in regard to MAP. Of the Protestant nation-states eighteen percent are unregulated in regard to MAP.

Of the Protestant denominations, the Evangelical Lutheran Church is the only one which has a majority in more than one nation. The populations of the nation-states Denmark, Finland, Iceland, Norway, and Sweden have between eighty-five and eighty-nine percent affiliation with the Evangelical Lutheran Church. All but Finland have adopted MAP regulatory legislation.

This hypothesis was confirmed through the data collected to meet objective one of

the study. However the lambda values resulting from the analysis (see Table 1), completed to meet objective two, show language group to be a stronger predictor of regulatory status. Language and religion both reflect aspects of culture.

Another issue, which causes the statistical analysis to inadequately reflect the true meaning of religious influence, is the interpretation of the absence of regulatory law. Study limitations in the final chapter will include this issue. Legally speaking, the absence of prohibitions against MAP practices means they are legal, i.e., if they are legal they are allowed. The reality of the medical practice in Catholic nations differs from this interpretation. The Catholic lobby in the nations of Malta and Italy have prevented legislation from being passed. In Malta any couple seeking assistance with infertility does so discretely and no statistics are maintained. Although it appears MAP practice is legally allowed in Malta, the social pressure keeps any such activity at a minimum. Ireland has not adopted legislation to address MAP practice. The guidelines of the Irish Medical Council allow physicians to practice reproductive medicine but do not include third-party involvement. The threat of disciplinary proceedings and professional misconduct limit the scope of infertility treatment. These situations point to issues of social control that cannot be measured by the passage or lack of passage of laws.

#### The Impact of Education, Economy, and Health Care

The measures used for education, the economy, and health care were based upon funds and are all interval level. Since the independent variables are interval level measure, another measurement strategy is required. The eta statistic, with values from zero to one,



will be used to measure the strength of the relationships. Eta, a coefficient of nonlinear association, was used to examine the associations between the nine nominal dependent variables and these interval independent variables. The eta-squared, which is the percent of variance in the dependent variable explained by the independent variable, is considered to be a PRE measure.

Hypothesis #3: The percentage of GNP spent on education is positively associated with the passage of MAP legislation.

Education. Education plays a pervasive role in society, which is difficult to measure. For this study, education was measured by the percentage of GNP each nation spends on education (displayed in Figure 12). The eta values for the relationship between education and the dependent variables are presented in Table 2.

For legislative status and education an eta value of .28 reveals the strength of the non-linear association between the two variables is a low association. This means the more money spent on education had very little association with the passage of regulatory law. The eta-squared value of .08 indicates that very little variance in legislative status was accounted for by education.

For marital status restrictions and education, an eta value of .27 documents that the strength of the relationship between marital status and education is low. This means that the more money a nation spends on education had very little association with increasing restrictions related to marital status for people seeking MAP treatment. The eta-squared value .07 indicates that very little variance in marital status is accounted for by education.

For posthumous conception and education, an eta value of .38 documents the strength of the relationship between the regulation of posthumous conception and education is moderate. This indicates that the more money spent on education the more likely a nation will have restrictive regulations on posthumous conception. The eta-squared value of .14 means that fourteen percent or a modest amount of the variance in the regulation of posthumous conception is attributable to education expenditure. These were the second highest values found for education.

For insemination by donor and education, an eta value of .40 documents the strength of the relationship between the donor insemination and education is moderate. This was the highest value found for education and means that more money spent on education is associated with the use of this practice. The eta-squared value of .16 means that sixteen percent of the variance in the practice of sperm donation is attributable to education expenditure.

For embryo donation and education, an eta value of .22 and eta-squared value of .05 reveals that the strength of the association between the two variables is low.

Table 2: Relationship of Percent GNP Spent on Education to MAP Legislation and Practice

<u>Dependent Variables</u>	Eta	Eta-squared
Legislative Status	.28	.08
Marital Status	.27	.07
Age Restrictions	.12	.01
Posthumous Conception	.38	.14
Donor Insemination	.40	.16
Ovum Donation	.15	.02
Embryo Donation	.22	.05
Surrogate Motherhood	.13	.02
Policy on Handling Donors	.31	.09

This indicates that money spent on education had very little impact on the use of the practice of embryo donation.

For policy on handling donors and education, an eta value of .31 documents a modest association between donor policy and education. This means that the amount of

money spent on education had some impact on the complexity of donor policy. The eta-squared value of .09 indicates that nine percent of variance in donor policy is accounted for by education.

Education Summary. The impact of education naturally varies among the nations since the level of funding for education ranges from Sweden's 8.23 percent of GNP down to Greece's 2.76 percent of GNP. Table 2 shows the three dependent variables most closely associated with education to be, in descending order, artificial insemination by donor, posthumous conception, and policy on the handling of third-party donors. The association between donor policy and education spending is supported by the position of Sweden as the highest ranked in terms of the percent GNP spent on education. Sweden was the first nation to pass legislation which protects the child's right to know his or her origin by requiring that records on the identity of the donor be retained and released when the offspring reaches adulthood.

Supplemental Statistical Analysis. When education is collapsed to two levels: low versus high and the dependent variables are collapsed to two categories (see Appendix C) the result is lambda values of .00 with no exception.

Support for Hypothesis #3: Only three of nine dependent variables had a modest association with education. Overall very little support was found for this contention. The percentage of GNP spent on education appears to have little association with the regulatory status of MAP. The outcomes indicate no apparent connection between expenditures on the passage of legislation or most specific regulations.

Hypothesis #4: The per capita gross national product is positively associated with the passage of MAP legislation.

Economy. The per capita gross national product (GNP) of each nation is used as a measure for each nations economy (listed in Figure 13). The associations between the dependent variables and the economy measure is presented in Table 3. It is supposed that financial standing may be associated with the quality and breadth of infertility treatment.

For legislative status and the economy, an eta value of .39 documents the strength of the relationship between legislative status and economy as a moderate association. This means the larger the per capita GNP the more regulation is in place. The eta-squared value of .15 means that fifteen percent of variance in legislative status is accounted for by the per capita GNP. These two variables are among the most closely related since the eta coefficient is the third highest.

For marital status restriction and economy, an eta value of .38 shows the strength of the relationship between marital status and economy is moderate. This indicates the larger the per capita GNP the more regulation in place. The eta-squared value of .15 indicates the percent of variance in marital status accounted for by the per capita GNP is moderate.

For posthumous conception and economy, an eta value of .41 documents the relationship between posthumous conception and per capita GNP is a moderate. These two variables have the second highest eta coefficient. This indicates that increases in per capita GNP is associated with increases in regulatory activity. The eta-squared value of .17 indicates the percent of variance in posthumous conception accounted for by the per capita GNP is

---



---

Table 3: Relationship of Per Capita GNP to MAP Legislation and Practice Regulations

---



---

<u>Dependent Variables</u>	Eta	Eta-squared
Legislative Status	.39	.15
Marital Status Restrictions	.38	.15
Age Restrictions	.19	.04
Posthumous Conception	.41	.17
Donor Insemination	.37	.14
Ovum Donation	.07	.00
Embryo Donation	.29	.09
Surrogate Motherhood	.16	.03
Policy on Handling Donors	.42	.17

---



---

seventeen percent.

For insemination by donor and per capita GNP, an eta value of .37 documents the association between insemination by donor and per capita GNP is moderate. The indication is that increases in per capita GNP are related to increases in regulation of MAP practice. The eta-squared value of .14 means fourteen percent of variance in donor insemination accounted for by per capita GNP. The association of the economy variable and the other

MAP practices where there is a third-party involvement have smaller eta coefficients. Embryo donation and economy, an eta value of .29 and an eta-squared value of .09 indicates a low association.

For policy on handling donors and economy, an eta value of .42 documents the association between donor policy and economy is moderate. This means the increases in per capita GNP are associated with increases in the regulation of MAP practice. The eta-squared value of .17 indicates the percent of variance in donor policy accounted for by the per capita GNP is moderate. Donor policy has the strongest association with per capita GNP of all the dependent variables.

Economy summary. The per capita GNP has a moderate association with several of the dependent variables. They account for fourteen or more percent of the variance in five of the nine dependent variables. They are policy on handling donors (.17), posthumous conception (.17), legislative status (.15), marital status restrictions (.15), and donor insemination (.14). Since much of MAP practices involve expensive technology it is reasonable to expect a relationship between the nation's economic standing and involvement in MAP regulatory policy.

Supplemental Statistical Analysis. When per capita GNP is collapsed to two levels: under and over \$18,000 and the dependent variables are collapsed to two categories (see Appendix C) the result is lambda values of .00 with one exception. Knowing which of the two categories a nation's per capita GNP falls in allows a twenty-four percent improved prediction of the nation's regulation of posthumous conception as prohibited or not

prohibited. Thus pointing to a strong relationship.

Support for Hypothesis #4: The relationship between the per capita GNP of a nation-state and the passage of legislation is supported. The number of MAP technologies allowed is displayed in Figure 19. This figure places the focus on procedures of a controversial nature with third party involvement. Many of the controversial procedures are prohibited by the wealthier nations even though these same nations support public and/or private fertility treatment clinics serving heterosexual couples of child-bearing ages. There are a range of treatment interventions limited to the couples own gametes. For example ovarian stimulation, in vitro fertilization, gamete intrafallopian transfer, zygote intrafallopian transfer, or intracytoplasmic sperm injection are possible procedures, which may hold the answer to a couple's fertility problem.

A substantial association is indicated by a .61 Pearson correlation between the per capita GNP and the percent GDP spent on healthcare. The amount of funding available for the development of infertility treatment appears to be more relevant to the issue of quality than the scope of the practice. The per capita GNP explains seventeen percent of the variance in the policy on handling donors. On balance support was found for this contention.

Hypothesis #5: The expenditure on health care is positively associated with the passage of MAP legislation.

National Health Care. The health care budget is one indicator of the support for fertility services (see Figure 15 for rank order). The percentage of GDP spent on health



Figure 19: Association of MAP Practices and Nations Per Capita GNP  
 Nations rank ordered based on per capita gross national product (1998, US\$)

MAP Practice:	<u>Posthumous Conception</u>	<u>Insemination By Donor</u>	<u>Ovum Donation</u>	<u>Embryo Donation</u>	<u>Surrogacy</u>
1. Luxembourg	+	+	+	+	+
2. Switzerland	0	+	+	0	0
3. Norway	0	+/E	0	0	0
4. Denmark	0	+	+	0	0
5. Iceland	0	+	+	0	0
6. Austria	0	+/E	0	0	0
7. Germany	0	+	0	0	0
8. Sweden	0	+/E	0	0	0
9. Belgium	+	+	+	+	+
10. Netherlands	+	+	+	+	+/E
11. Finland	0	+	+	+	+
12. France	0	+	+	+	0
13. United Kingdom	+	+	+	+	+/E
14. Australia	+	+	+	+	+/E
15. Italy	0	+	+	+	0
16. Canada	+	+	+	+	+
17. Ireland	0	0	0	0	0
18. New Zealand	+	+	+	+	+
19. Spain	+	+	+	+	+
20. Greece	+	+	+	+	+
21. Portugal	+	+	+	+	+
22. Malta	0	+	+	+	+
23. Slovenia	0	+	+	0	0
24. Czech Republic	0	+	+	+	0
25. Hungary	ns	+	+	+	0
26. Poland	+	+	+	+	0
27. Slovakia	0	+	+	+	0
28. Estonia	0/E	+	0	0	0
29. Turkey	ns	0	0	0	0
30. Lithuania	0	0	0	0	0
31. Latvia	+	+	+	+	+
32. Russia	ns	+	+	+	0
33. Romania	+	+	+	+	+
34. Bulgaria	0	+	+	+	0
35. Ukraine	+	+	+	+	+

Prohibited = 0, Allowed w/ exception = +/E, Allowed = +, Prohibited w/ exception = 0/E, Not specified= ns

care was the variable created to measure the level of interest and services.

For legislative status and health care, an eta value of .40 documents the association between legislative status and health care is moderate. This means the increases in percent GDP spent on health care are associated with increases in the regulation of MAP. The eta-squared value of .16 indicates the percent of variance in legislative status accounted for by the health care expenditure is sixteen percent.

For marital status restrictions and health care, an eta value of .54 documents the association between marital status restrictions and health care is substantial. This indicates that increases in the percent GDP spent on health care are associated with increases in the marital status regulation of access to MAP. These correlations between percent GDP spent on health care and marital restrictions suggests an important connection between budgeting and access requirements. The eta-squared value of .29 indicates that twenty-nine percent of the variance in marital status restriction is accounted for by health care funding. These two variables have the strongest association.

For posthumous conception and health care, an eta value of .51 documents the strength of the association between posthumous conception and health care is a substantial one. This indicates increases in percent GDP spent on health care are associated with increases in the regulation of MAP as it pertains to posthumous conception. These two variables have the second highest association. The eta-squared value of .26 indicates the percent of variance in posthumous conception accounted for by health care is substantial. The fact that twenty-six percent of the variance in the

Table 4: Relationship of Percent GDP Spent on Health Care to MAP Legislation and Practice

<u>Dependent Variables</u>	Eta	Eta-squared
Legislative Status	.40	.16
Marital Status	.54	.29
Age Restrictions	.25	.06
Posthumous Conception	.51	.26
Donor Insemination	.31	.10
Ovum Donation	.12	.01
Embryo Donation	.28	.08
Surrogate Motherhood	.36	.13
Policy on Handling Donors	.44	.19

regulatory handling of posthumous conception is accounted for by the health care expenditure suggests an important connection between funding and regulatory control of this aspect of MAP.

For insemination by donor and health care, an eta value of .31 and an eta-squared value of .10 indicates a moderate association. Smaller eta coefficients were found for the

other two MAP practices involving third-party donors. Ovum donation and health care yield an eta value of .12 and an eta-squared value of .01 indicates a low association between ovum donation and health care. For embryo donation and health care, an eta value of .28 and an eta-squared value of .08 indicates the association is low.

For surrogate motherhood and health care, an eta value of .36 documents the strength of the association between surrogate motherhood and health care is moderate. This means there is an association between increases in funds allocated to health care and increases in the regulation of MAP practice. The eta-squared value of .13 indicates the percent of variance in surrogate motherhood accounted for by health care funding is thirteen percent.

Policy on handling donors and health care have the third highest association. An eta value of .44 indicates the strength of the relationship between donor policy and health care is moderate. The eta-squared .19 indicates the percent of variance in donor policy accounted for by health care funding.

Health Care Summary. The percentage of GDP spent on health care ranges from the maximum of 9.7 percent of GDP spent in both Austria and France to the minimum of 2.3 percent of GDP spent in Russia. The varying level of funding for health care appears to mirror the range of support for MAP technology in the treatment of infertility. The eta statistics indicate a substantial or moderate association between six of the nine dependent variables and health care funding.

Supplemental Statistical Analysis. When percent GDP spent on health care is

collapsed to two levels: under and over 7.1 percent and dependent variables are collapsed to two categories (see Appendix C) the result is only one lambda value which displays a strong relationship. Knowing which of the two categories a nation falls in allows a thirty-five percent improved prediction of the nation's regulation of posthumous conception as prohibited or not prohibited. Thus pointing to a very strong relationship.

Support for Hypothesis #5: A moderate association exists between legislative status and expenditure on health care as measured by percent GDP. Sixteen percent of the variance in legislative status is explained by percent GDP spent on health care. A very substantial association exists between the percent GDP spent on health care and the regulatory handling of marital status. Twenty-nine percent of the variance in marital status is explained by percent GDP spent on health care. One explanation is the cost control built into the restricting of eligibility for infertility treatment to marital couples or the larger pool of heterosexual males and females of child-bearing age as compared to unrestricted access. Restricting or limiting access to treatment is directly related to the expenditure of funds and therefore plays a significant part in the budgeting process. The technologies involved in MAP practice are often costly therefore restricting couples based upon their conjugal circumstance is a method of controlling expenditures. Also a substantial association between the percent GDP spent on health care and the regulatory handling of posthumous conception occurred. Twenty-six percent of the variance in posthumous conception is explained by percent GDP spent on health care. Hence the majority (six out of nine) of the dependent variables had substantial or moderate eta coefficients. The dependent variables

donor insemination, surrogate motherhood, and policy on handling donors all display moderate associations with the percent GDP spent on health care. This contention is firmly supported.

### Health Care System Model

The thirty-five nations varied little where it comes to health systems. The various systems are combinations of three basic models or prototypes. The basic models are national health services funded by general taxation, social insurance systems funded largely by payroll contributions, and the classical market-based model relying upon private insurance. Although the prototypes are found in various combinations and some are in the process of changing (this will be discussed more in chapter six), the nation-states were classified according to the model of health care system most representative of their particular system. Seventy-four percent of the nations have systems based on the national health service model. Twenty-three percent of the nations have systems based on the social health insurance model. The market-based model, involving largely private insurance, was only representative of one nation, that is, Switzerland. The list of nations with its representative model are in the fourth chapter. Due in large part to the lack of variation, when the lambda values were calculated for the dependent variables and the health care system model (a nominal variable) only negligible or no associations were found between all nine dependent variables and the health care system model.

## Demographic Indicators That Measure The Quality of Health

Although not included in any hypotheses, birth rate, infant mortality rate, and life expectancy at birth (years) have been associated with the quality of national health care systems (Figures 16, 17, 18 display detailed data). Hence, further analysis was performed on these aspects. The average birth rate for the thirty-five nations is eleven births per 1,000 population. The infant mortality rate (annual number of deaths of infants under age one year per 1,000 live births) for the thirty-five nations has a range of fourteen years.

Birth Rate. The association of birth rate to MAP legislation and practice was explored, the resulting eta coefficients and eta-squared are presented in Table 5. For legislative status and birth rate an eta value of .27 and an eta-squared value of .07 indicates a low association. For marital status and birth rate, an eta value of .24 and an eta-squared value of .06 indicates a low association. For posthumous conception and birth rate, an eta value of .32 and an eta-squared value of .10 indicates association is moderate. These two variables have the third highest association. The highest eta coefficient is insemination by donor and birth rate. An eta value of .44 indicates the association between insemination by donor and birth rate is moderate. The eta-squared value of .20 means twenty percent of the variance in insemination by donor is accounted for by birth rate. For policy on handling donors and birth rate, an eta value of .40 indicates the association between donor policy and birth rate is moderate. The eta-squared value of .16 indicates the percent of variance in donor policy accounted for by birth rate is moderate.

---

---

Table 5: Relationship of Birth Rate to MAP Legislation and Practice

<u>Dependent Variables</u>	Eta	Eta-squared
Legislative Status	.27	.07
Marital Status	.24	.06
Age Restrictions	.15	.02
Posthumous Conception	.32	.10
Donor Insemination	.44	.20
Ovum Donation	.17	.03
Embryo Donation	.23	.05
Surrogate Motherhood	.19	.04
Policy on Handling Donors	.40	.16

---

---

Birth Rate Summary. Although birth rate has a role in the evaluation of the quality of national health care, it appears to have little to do with decision-making relative to most regulatory policy governing MAP technology. The data indicates only two of the dependent variables, regulations dealing with donor insemination and policy on handling donors, have over ten percent of the variance accounted for by the birth rate. Overall the regulatory handling of these controversial technologies is not associated with the national birth rate.

Supplemental Statistical Analysis: The only statistic which indicates a relationship



between birth rate and MAP regulation was found when the data collapsed. When birth rate is collapsed to two levels: ten or less and over ten births per 1,000 population and the dependent variables are collapsed to two categories (see Appendix C) the variable age restrictions (unrestricted and restricted) results in a lambda value which indicates a strong relationship. Knowing which of the two categories a nation falls in allows a twenty percent improved prediction of the nation's restrictions on the age of individuals seeking MAP treatment.

Infant Mortality Rate. The infant mortality rate along with life expectancy at birth (years) are often strong indicators of the quality of the health care system. The association of infant mortality rate to MAP legislation and practice was explored using the eta coefficient of non-linear association. The eta values are reported in Table 6.

For marital status and infant mortality rate, an eta value of .44 indicates the association between marital status and infant mortality rate is moderate. This indicates increases in infant mortality rates are associated with increases in the restrictions on marital status. The eta-squared value of .20 indicates the percent of variance in marital status accounted for by infant mortality rate.

For posthumous conception and infant mortality rate, an eta value of .65 documents the association between posthumous conception regulations and infant mortality rate is substantial. This means increases in infant mortality rate are associated with increases in the regulation of posthumous conception. The eta-squared of .42

---



---

Table 6: Relationship of Infant Mortality Rate to MAP Legislation and Practice

---



---

<u>Dependent Variables</u>	Eta	Eta-squared
Legislative Status	.15	.02
Marital Status	.44	.20
Age Restrictions	.10	.01
Posthumous Conception	.65	.42
Donor Insemination	.47	.22
Ovum Donation	.15	.02
Embryo Donation	.02	.00
Surrogate Motherhood	.15	.02
Policy on Handling Donors	.42	.17

---



---

indicates the percent of variance in posthumous conception accounted for by infant mortality rate is substantial.

For insemination by donor and infant mortality rate, an eta value of .47 indicates the association between donor insemination and infant mortality rate is moderate. The eta-squared of .22 indicates the percent of variance in donor insemination accounted for by infant mortality is moderate.

For policy on handling donors and infant mortality rate, an eta value of .42

documents the association between donor policy and infant mortality rate is moderate. The eta-squared of .17 indicates seventeen percent of variance in donor policy is accounted for by infant mortality rate.

Infant Mortality Rate Summary. One dependent variable, posthumous conception, has a substantial association with infant mortality rate. The implication is that an increasing problem of infant mortality is associated with increased regulation of posthumous conception. Three dependent variables, marital status, donor insemination, and donor policy have a moderate association with infant mortality rate. The percent of variance accounted for by infant mortality rate is twenty, twenty-two, and seventeen percent respectively for the three dependent variables with moderate associations. Thus indicating that an influence exists but not a strong influence. The quality of health care is linked to infant mortality rates.

Supplemental Statistical Analysis: Infant mortality rate is collapsed to two levels (under and over 5.4 deaths per infants under age one year per 1,000 live births annually) and the dependent variables are collapsed to two categories to calculate lambda values (see Appendix C). Knowing which of the two categories a nation falls in allows a forty-seven percent improved prediction of the nation's regulation of posthumous conception as prohibited or not prohibited. Thus pointing to an extremely strong relationship. A contributing factor is the increased likelihood that the poorer countries have not yet progressed to the point that development of MAP regulatory policy is a priority, and these same countries fall within the higher mortality rate category.

Life Expectancy At Birth (Years). The broad fourteen year range in the life expectancy at birth statistics is an indication of the differences in the quality of life factors including medical care in the thirty-five nation-states. The association of life expectancy at birth (years) to MAP legislation and practice was explored using the eta coefficient. The eta values are presented in Table 7.

A moderate association is documented for marital status restrictions and life expectancy at birth, as indicated by an eta value of .37. The eta-squared value of .14 indicates fourteen percent of variance in marital status is accounted for by life expectancy at birth. Marital restrictions has to do with access to infertility treatment. It is reasonable to interpret this association as linked to quality of health and medical care.

For posthumous conception and life expectancy at birth, an eta value of .65 documents the association between posthumous conception and life expectancy at birth is substantial. This means increasing life expectancy at birth is associated with increasing regulation of posthumous conception. The eta-squared value of .42 means forty-two percent of the variance in posthumous conception is accounted for by life expectancy at birth. These two variables are more strongly associated than any others.

For insemination by donor and life expectancy at birth, an eta value of .32 documents the strength of the non-linear relationship between insemination by donor and life expectancy at birth is a moderate association. The eta-squared value of .10 indicates ten percent of the variance in donor insemination is accounted for by life expectancy at

Table 7: Relationship of Life Expectancy at Birth (years) to MAP Legislation and Practice

<u>Dependent Variables</u>	Eta	Eta-squared
Legislative Status	.19	.04
Marital Status	.37	.14
Age Restrictions	.18	.03
Posthumous Conception	.65	.42
Donor Insemination	.32	.10
Ovum Donation	.01	.00
Embryo Donation	.14	.02
Surrogate Motherhood	.24	.06
Policy on Handling Donors	.34	.11

birth.

For policy on handling donors and life expectancy at birth, an eta value of .34 indicates the association between donor policy and life expectancy at birth is moderate. This may be interpreted that increasing life expectancy is associated with increasing complexity of the policy on handling donors. The eta-squared value of .11 means eleven

percent of variance in donor policy is accounted for by life expectancy at birth.

Life Expectancy At Birth Summary. In summary, a substantial association exists between posthumous conception regulation and life expectancy at birth. Forty-two percent of the variance in posthumous conception is accounted for by life expectancy at birth. The three variables of marital status restrictions, donor insemination, and policy on handling donors are moderately associated with life expectancy at birth.

Supplemental Statistical Analysis: When life expectancy at birth is collapsed to two levels and the dependent variables are collapsed to two categories to calculate lambda values (see Appendix C) only negligible or zero lambdas result.

#### The Interrelationship of the Quality of Health Care and the Demographic Indicators

The five nation-states with the highest infant mortality rate are Turkey, Romania, Russia, the Ukraine, and Bulgaria. The strong connection between infant mortality and life expectancy is documented by the fact that these same five countries are among the eight countries with the lowest life expectancy at birth. Further Russia (2.3%), Romania (3.6%), and Turkey (4.2 %) are the nation-states with the lowest percentage of GDP spent on health care. The Ukraine and Bulgaria have the lowest per capita GNP of the thirty-five nation-states. Both the Ukraine and Bulgaria spend 4.7 percent GDP on health care and fall within the ten lowest countries according to national health care expenditures.

#### Concluding Summary

The extent to which regulatory law and policy may be explained by culture, custom, economics, and demographic trends are suggested by the differing outcome values found in

the seven tables for the various independent variables presented in this chapter. Most Europeans have great regard for the welfare of children and hold all of society responsible to safeguard their best interests. Support for the family structure and some concern over the decreasing birth rate is reflected in the regulations. The purpose of this chapter was to describe the patterns of association between the dependent and independent variables. The next and final chapter will use the data from the fourth and fifth chapters to set forth trends and evaluate suppositions.

## CHAPTER VI.

### SUMMARY AND CONCLUSIONS

The objective of this chapter is to summarize the regulatory patterns and the unique circumstances of the Council of Europe nation-states. The study has suggested that the regulatory structure adopted by individual nations is influenced by national identity, social cultural, and demographic factors.

#### Overview of the Results of the Study's First Objective

The practice of artificial insemination by donor, the oldest method of medically assisted procreation in use since the early 1800s, is accepted in most nation-states. Twenty-nine of the thirty-five countries in this study allow artificial insemination by donor. Ovum donation is the female version of donor insemination. The process of ovum retrieval is more complex involving laparoscopy followed by in vitro fertilization (Pitrolo, 1996). The fertilized embryo is implanted in an infertile woman who lacks the ovarian function necessary to produce ovum. Twenty-seven of the thirty-five countries allow ovum donation. Most nation-states allow the use of artificial insemination as well as other new techniques by married couples or those in a committed relationship. Forty-three percent of the nation-states limit infertility treatment to heterosexual couples either married or cohabiting male and female, and an additional seventeen percent permit access to MAP to married heterosexual couples only. The French bioethics debates resulted in the 1994 law, which barred post-menopausal women from receiving MAP treatment and made gamete donation an "exceptional measure" available only to couples of child



bearing age who must both be living. Ten of the thirty-five nations have a maximum age set for females only, and another five nations set maximum ages for both men and women seeking MAP treatment. Usually the issue of access by gay and lesbian couples is not covered but when covered prohibition is the likely outcome.

The issue of the legitimacy of children born as the result of MAP techniques has prompted legislation in most nations. If the spouse consents to third-party donor techniques the resulting child is recognized as the legitimate child of the spouse.

The third-party donation of embryo is a highly controversial practice. Sixty-six percent of the nation-states allow embryo donation. Thirty-four percent of the nation-states have prohibited the donation of embryo. Some, such as Germany, have criminal sanctions for those who violate the law. In Germany, the only exception is the “spare embryo” or unplanned incident whereby the unintentional surplus embryo cannot be implanted in the womb of the woman from whom the embryo originated. The donation is considered preferable to the destruction of the embryo. Research on the embryos is prohibited in some nations. Other countries allow research on embryos for specified medical purposes. For example, one role of the United Kingdom’s Human Fertilisation and Embryology Authority is to issue licenses for specified research activities. As Lorio (1999) stresses several nation-states permit research but forbid later implantation of any embryos, which were subjected to research.

The handling of donations and donors varies among the nation-states. Some nations require the donor’s partner to consent to the donation. Others require that the

donor already has an offspring. The nation of France views donation as a family action involving a gift from the fertile couple to the infertile couple.

Donor anonymity is not uniformly handled. Fourteen of the thirty-five nations treat the donor as anonymous. In Spain anonymity is traditional but a donor registry is maintained of medical records and other important data. The donor's identity is protected with extreme caution in France. The importance of anonymity is assumed in Belgium, Denmark, Finland, Italy, Luxembourg, and Norway. The identity of the donor is also guarded in Bulgaria, Greece, Hungary, Poland, Portugal, Romania, and the Ukraine. The release of vital medical information is generally available to children. Ten of the nation-states in this study make special provisions for the retention of medical history and other vital facts.

Sweden's 1984 Law on artificial insemination was the first to mandate the retention of records on the identity of the donor. Sweden ensures the offspring's access to information as to the identity of the donor upon reaching adulthood. The nation of Germany determined the child has a right to information on the donor by analogizing the adoption laws, which support this perspective. Austria allows offspring to obtain information as to the identity of the donor at the age of fourteen. The offspring is guaranteed access to data relating to his descent by a constitutional article in Switzerland. In Switzerland, so as not to deter donors, the procedure was set up to contact the donor when a request for donor identity was received. If the donor is opposed to the release of identity, an effort is made to discuss the donor's privacy rights. Iceland allows the donor

to decide if anonymity is observed or donor identity released. Russia also respects the donor's request for anonymity but otherwise retains information on identity to be released later. The child's right to know is gaining in acceptance. Australia more recently recognized the right of the child to have information relating to descent.

The controversy related to posthumously conceived children comes in two areas: pre-gestation and post-gestation. The control over reproductive genetic material prompted early law suits to determine the legality of the wife's insemination with the sperm of her deceased spouse and other similar controversy. Post gestation rights entail the right to inherit and custody issues. The 1996 Australian case of the Estate of the Late K deals with the status of frozen embryos, and whether a child born alive posthumous to the father could inherit part of the estate.

Posthumous conception by artificial insemination is prohibited in seventeen of the thirty-five nations in this study. Most nations view limitations on the new technologies, such as banning posthumous conception, to be the adoption of a child-oriented perspective. Many people assert the inappropriateness of starting a child's life without the possibility of a solid two-parent foundation. The dominant opinion is that no guaranteed right to procreate is ensured to survive oneself. Human life is only ensured protection against attack.

The baby market in adoption exceeds the supply, and surrogate motherhood feeds into this same market. Surrogacy sets forth an improved answer for the childless couple since genetic continuity is made possible. Twenty of the thirty-five nation-states prohibit

surrogate motherhood. Of the remaining fifteen, eleven nation-states do not have regulatory legislation or guidelines pertaining to surrogacy. The United Kingdom, the Netherlands, and Australia allow surrogacy when not commercialized for profit. One nation, Spain, does not address the commercial aspects but delivery decides maternity. In Spain the woman who gives birth to the child is the legal mother of the child. The Council of Europe's CAHBI committee (Council of Europe, 1989) specify two requirements pertaining to surrogacy: a.) the surrogate mother obtains no material benefit from the operation; and b.) the surrogate mother has the choice at birth of keeping the child.

#### Actions Taken To Achieve A Common Standard

The European Parliament issued its Resolution on the Ethical and Legal Problems of Genetic Engineering in March of 1989. The resolution stresses the unequivocal protection of genetic identity; and makes the commercial or industrial use of embryos a criminal offense. Several nation-states conducted various inquiries prompted by the level of public interest and concern. The United Kingdom was a leader in the field of in vitro fertilization. The nation was involved in early examination of the ethical and legal dilemma. A committee of inquiry of the Department of Health and Social Security, chaired by Mary Warnock, made up of members from all regions and parts of society. Their recommendations were presented to the British Parliament on June 26, 1984 (Lorio, 1999). Similar committees have been formed in most nation-states. A list of legislation pertinent to the regulation of MAP in all thirty-five nations is found in the

## Appendix B.

Socio-Legal Theory. Two models of legislation dominate the regulatory law for medically assisted procreation. One entails criminal sanctions (penal) and the other is a licensing (administrative) approach. The British Commonwealth nation-state of Australia provides examples of both models. The Reproductive Technology Act of 1988 in the state of South Australia and the Human Reproductive Technology Act of 1991 in the state of Western Australia are both licensing models. The present Infertility Treatment Act of 1995 in the state of Victoria is a criminal model which, includes licenses and approvals. It replaces an earlier law, which was strictly a criminal model. The administrative law, which constitutes the licensing model, involves licensing, plus monitoring or inspection. Hence pointing to a costly process. The criminal model (penal control) prohibits specific behavior, and punishments result from violations of prohibitions. In regard to the criminal model the nations vary in severity, in most instances the criminal sanctions are aimed at physicians and alternate service providers but not individuals seeking treatment.

Black (1998) asserts the view that law is an expression of the larger culture. Therefore it is unique for each nation, and for the time. The example of Australia shows how the law changes over time. The state of Victoria started with a pure criminal sanctions (penal) model and has more recently incorporated a licensing model in the 1995 legislation. Over time some of the other nations may revise their laws to reflect changes in perspective.

Presently the bioethics committees in nations constitute the body for review of new technologies and developments. The United Nation's Human Genome Declaration includes Article 24 which identifies the International Bioethics Committee as a forum to study and review issues developing from the application of the principles endorsed by the Human Genome Declaration and by the future evolution of the relevant technologies (UNESCO, 1997 November).

The European Court of Human Rights creates an accumulation of judge-made law, which will potentially create a European standard. Family law cases involving medically assisted procreation brought to the Strasbourg Court sets forth a process, which will over time establish a professional consensus. The human motivation to procreate will prompt the continued development of reproductive technology. Societal response is required if legal parameters are to be established. Society is responsible for the safety of its populace; most importantly its progeny.

Justification for Government Intervention. The justification for government intervention in MAP practice is grounded in society's concern for the safety and health of all people, potential offspring included. Otherwise, the overlooked or unheeded may become the responsibility of society as a whole. A child's best interest must be granted priority irregardless of the practices responsible for a child's conception or gestation. The support of the family structure necessary to raise the child is reinforced by the Council of Europe's (1989) publication *Human Artificial Procreation*.

Medically assisted procreation enables self conscious choice to replace accidental

acts of nature. The traditions of family are challenged. In some places fertility clinics have become big business. The courts stood as the first arena where society worked through this moral struggle. The French case *Parpalaix v. CECOS* of 1984 was the first important judicial review applying to posthumous conception. The court did not recognize the sperm as property but instead found in the favor of Alain's wife, Corinne, and his parents based on the "intent" of the husband Alain. A French law was later passed prohibiting all post mortem conception. (Shuster ,1999, Sutton,1999, Lorio,1996)

MAP practice holds the potential for family re-definition. This has contributed to the meaning of family becoming an issue for public debate. The threatened loss of predictable parental origins is unacceptable to some. Others respond to the various restrictions by promoting the phenomenon known as "procreative tourism", i.e., crossing national borders for the purpose of receiving infertility treatment prohibited in their country. The global market for surrogacy services is another example of a potentially problematic phenomenon.

#### Theoretical Concepts Related to the Understanding of Regulation

The constructs of individualism and collectivism are useful ways of addressing regulatory approaches. Differing world views range from a preference for a loosely knit society to one that is tightly formed. One is based upon the expectation that individuals function anonymously and are responsible for themselves and their immediate family unit. The alternative view is that expanded social loyalties to community may be traded for expectations for safety and care. This may be another interpretation of what Eriksson

(2000) referred to as a child-oriented perspective versus a parent-oriented perspective. The parent-oriented is comparable to individualism whereas the child-oriented pertains to collectivism in that society must protect its offspring. The danger of objectification of the child is stressed by the child-oriented perspective. The child's viewpoint is responsible for legislation to safeguard the child's best interest. For example, the right to know one's genetic origin or the right to have a male and female parent. The parent-oriented viewpoint is founded upon the belief that all individuals should have an equal opportunity to become parents. Eriksson feels international law has not yet reconciled the opposing aspects. Eriksson views legislative justification to be found in "the Kantian understanding of human dignity and the intrinsic value of human beings, i.e., that humanity ought to be considered as an end and never as a mere means" (p.191).

The MAP technologies and surrogacy have a dual impact. The traditional notion of parenthood becomes disconnected and unclear. The basic assumption that children spring from love is now in question due to the financial aspects of the practices.

#### Discussion of the Results of the Study's Second Objective

Language and religion are included in the discussion of national identity theory later in this chapter.

#### The Association Between Economy and MAP Regulatory Policy

For the purposes of this study, economy was measured as the per capita gross national product (GNP) of each nation. The eta coefficients for a majority of the dependent variables indicated moderate associations. The costly nature of MAP



technology supports a strong connection between economic standing, MAP practice, and regulatory actions. The earnings levels of the European nation-states differ dramatically. The data ranges from the Ukraine's low of \$980 to Luxembourg's high of \$45, 100. Levels tend to be higher in the north than in the south. According to the European Communities *Social Portrait of Europe* (1998), the highest medium earnings as per Eurostat 1995 figures are in Denmark, the western Lander of Germany, Luxembourg, the Netherlands and Belgium. Earnings are lower in Greece, Spain, and Italy. The most equitable distribution of earnings within nations is found in the Nordic countries. As previously noted, all four of the nations in the Norse language group have federal legislation to regulate MAP. Employees who had received higher education earned between thirty and forty percent more per month than employees completing upper secondary school.

In some regions or parts of nations the difference was even greater. For people in the previously communist nations the transition from the centrally regulated mechanism which ensured a high correlation between income and education pose another problem. A study by Pohorila and Slomczynski (2000) compared individual income, gains and losses in the Ukraine from 1993 to 1996. In 1993, education accounted for 2.3 percent of income variance. In 1996 education accounted for 10.5 percent of income variance. Thus, Ukrainians were experiencing the recovery of a substantial, significant relation between education and income. As indicated in the fourth chapter, the Ukraine's lack of MAP legislation translates to a lack of prohibitions against most MAP practices. This

does not mean that activities such as surrogacy or post mortem conception occur. The economic instability experienced by the Ukraine and other eastern nations result in difficulty in meeting basic western economic standards. These circumstances appear to be related in a large part to the lack of regulatory activity. The recovery and increased economic stability will lead to improvements in health care, including infertility treatment.

The Czech Republic has the twenty-fourth highest per capita GNP just after Slovenia when the thirty-five nations are rank ordered. Slovenia was previously under Yugoslavia, therefore the Czech Republic has the highest per capita GNP of the previously Soviet Union countries. The Czech Republic has citizens who can remember earlier times in a democracy. This is helpful in the pursuit of a Western market economy (Zuzowski, 2000). Prior to the beginning of the second world war Czechoslovakia was the only surviving democracy in southeastern or central Europe. The Czechs had a lower illiteracy rate and a more urban population. The lands were traditionally liberal and tolerant of religious preferences. Communism collapsed in 1989 and Slovakia and the Czech Republic became separate nations in 1993. The Czechs have moved steadily toward democratic and market economy goals. As discussed in the fourth chapter, the Czech Republic has fourteen licensed MAP treatment centers, of which six are state clinics and eight are private centers. The centers operate with minimum standards and report to a National Register. Although specific MAP regulatory legislation has not been adopted, a division of the medical society has developed a practice code. Except for

Slovenia, the Czech Republic is outperforming other Eastern European nations.

Slovenia has adopted MAP regulatory legislation. The act came into force in September of 2000. Slovenia has a homogeneous, conflict-free population since almost ninety percent of the population is ethnic Slovene (Bukowski,1999). Minority ethnic groups compose no more than three percent of the population. Slovenia's first democratic elections were in April 1990. This was the most visible event of Slovenia's transition to democracy and separation from the disintegrating Yugoslavia. Slovenia made a smooth transition to democratic rule and an easy conversion from a social, self-managing economy to a market economy that is the strongest in Eastern Europe. Slovenia's negotiations with the European Union resulted in signing an association agreement in June of 1996. The nation has applied for full EU membership and in July of 1997 the EU Commission recommended to enter accession negotiations with Slovenia.

Of the three Baltic nations previously under the Soviet Union, Estonia has made the transition to independence and democratic rule with the greatest ease. Estonia is ranked twenty-eighth and Lithuania and Latvia are ranked number thirty and thirty-one respectively on per capita GNP. Estonia adopted a Constitution based on the 1938 law by referendum in 1992. Estonia adopted legislation to regulate assisted conception in 1997. Many of the nations of Eastern Europe and the Baltic area are handicapped by economic short-falls. Due to these circumstances the ability to provide infertility services incorporating the new technologies is difficult. The complexities of MAP demand modern labs, trained staff, costly medical equipment and drugs.

### The Association Between Health Care Status and MAP Practice

The 1970s to present involve steady improvement in the health of the western Europeans; while the populations of central and eastern Europe have stagnated. The collapse of the Soviet Union in 1990 resulted in chaos, which impacted the administration of health care delivery systems. The reductions in health care budgets were compounded by the rise in poverty, unemployment, criminality, and social alienation. If data from 1970 to 1996 for the European populations on life expectancy at birth (years) is separated according to the European Union, Eastern Europe, and the former Soviet Republics, the dramatic differences are readily apparent. However the sharp decline noted for the former Soviet Republics changed in 1990 and began an upswing in 1994, indicating hope for the future (Asvall & Alderslade, 2001).

The Structure of the Health Care System: Providing a Context for MAP Regulation. The three health system prototypes identified by Busse (1998) are used to group the nation-states. It is recognized that all nations use a combination of these systems. A negligible relationship or no association was found between all nine dependent variables and the health care system model deemed most representative of each nation. This outcome may be due in part to the mix of models found in the nations. In addition, many nations are moving toward social health insurance and the incorporation of private insurance, and away from the national health service prototype. The social health insurance model is steadily gaining in recognition and implementation. Many of the former Soviet nations are moving toward a social health insurance model.

Also several nations, such as the Netherlands, are making increasing use of private insurance.

Health care systems were seen as major parts of the economies in not only all Western European nations but also in most Central and Eastern European nations by the European Standing Conference of National Ethics Committees (Busse, 1998). Of the various models the social health insurance model reflects the greatest stability. This model places the greatest concern on equity but not necessarily efficiency. Key features of the social health insurance model have been incorporated in the market oriented models of Switzerland and in the large private health sector of the Netherlands. Ninety percent of Germany's population and sixty percent of the Netherlands' population are covered by the social health insurance model. Significant elements of the social health insurance model are incorporated in the plans found in Austria, France, and Belgium where almost the entire population is covered.

Although the majority of the Central and Eastern European nations functioned under systems following the national health service model for about forty years, most are re-introducing the social health insurance model. Germany and others have incorporated elements from other models in their social health insurance models, particularly fixed budgets, in an effort to control costs.

The classic national health service model is administered by the state and financed largely through taxes. National health service typically has no separation between health care provision and finance; and generally there is no explicit benefit

catalogues or explicit patient rights for patients denied services (a potential system inequity). In the recent years, modernization strategies have included de-centralization to regional authorities from the central government. While Sweden has always been regionally organized, a visible de-centralization took place in Spain (Busse, 1998). The British system of national health insurance is comprised of a social security system and National Health Service. Most British hospitals are administered by the National Health Service. The British system is a dual system in that people are free to make private arrangements with practitioners for medical care and still use public hospital service. Everyone is entitled to the services of the National Health Service but many who can afford private care elect to use private providers. Canada has a dual system similar to Britain in that there several private physicians in Canada who establish their own fees and provide services for people who can afford private health care. The public health service is a “single payer” model of health care. The Canadian government pays hospitals and physicians according to an established fee schedule (Macionis, 2002).

In Russia the falling standard of living has impacted the overall well-being and health status of the people. Seventy percent of Russian physicians are female. They earn about the same salary as skilled industrial workers. Health care is funded through taxes. When a Russian is in need of the services of a physician, they report to a government health facility where services are provided. Market reforms may improve the standard of living but the disparities in the level of medical care for various segments of population will most likely increase (Macionis, 2002).

Unlike most socialist countries, Slovenia has not had a budget-based health care system except in 1991, the year of their independence (Cesen and Drnovsek, 2000). Slovenia operates under a compulsory health insurance system financed by salary based contributions received from employees and employers. The system comes under the Health Insurance Institute of Slovenia. The health care system entails relatively autonomous regulation of the health care sector. The basic model is a continuation of the system previously in place under socialism. Efforts have been made to encourage the development of a private medical practice. The system in Slovenia eventually will be transformed from a completely public system to a combined private and public system. The goal is to catch up with the other European nations.

In summary, the European health care system is presently undergoing changes. These changes are important to the future of infertility treatment in Europe.

The Quality of Health Care. The infant mortality rate and life expectancy at birth (years) are used as indicators. The broad fourteen year range in the life expectancy at birth statistics among nations studied is an indication of differences in the quality of life, including medical care among the thirty-five nation-states. The data ranges from the high of 80 years for both Switzerland and Sweden to a low of 66 years for Russia. Differences by gender are significant. Life expectancy for Russian women has fallen below that of many other European nations but life expectancy for Russian men has fallen even more significantly. The life expectancy at birth for Russian women is 72 years, and the life expectancy at birth for Russian men has fallen to a dramatic 59 years. Neighboring

countries, where health care is much better, display much higher life expectancy statistics and a narrower gender gap; for example Finland's is 81 years for women and 74 years for men.

The nations of Turkey, Romania, Russia, the Ukraine, and Bulgaria which are among the eight countries with the lowest life expectancy at birth have the highest infant mortality rate. Three of these nation-states have the lowest percentage of GDP spent on health care, Russia, Romania, and Turkey. The Ukraine and Bulgaria spend only a slightly higher percent of GDP on health care and are among the ten lowest in national health care expenditures. In addition the Ukraine and Bulgaria have the lowest per capita GNP of the thirty-five nations.

The connection between infant mortality rate and life expectancy at birth is further suggested by the common level of associations found with the dependent variables, for example substantial association was found for both posthumous conception and infant mortality as well as posthumous conception and life expectancy at birth. Three dependent variables, marital status, donor insemination, and donor policy, have a moderate association with infant mortality rate.

The top five nations in terms of percent of GDP spent on health care were Austria, France, Switzerland, Germany, and Netherlands. The infant mortality rates for these countries fall within the fifteen lowest countries. In addition, these five nations are among the top twelve with the highest per capita GNP.

Infant mortality rates and the percent GDP spent on health care, as well as the per



capita GNP are connected for both the highest and the lowest ranking nations. For example, Iceland has the lowest infant mortality rate (2.4), the eighth highest GDP spent on health care (8.1) and the fifth highest per capita GNP of \$27,830. Iceland also has a birth rate of 15 births per 1,000 population. Together these suggest that Iceland has quality health care. Iceland adopted the Law on Medically Assisted Procreation in June of 1996.

Clearly, infant mortality rate, as well as life expectancy at birth (years), provide an indication of the quality of medical and health care. The infant mortality rate serves as an indication of the quality of prenatal and perinatal medical supervision and general nutrition. The percent GDP spent on health care is an indicator of how substantial the funding will be for infertility treatment and related care. Funding is important as the technologies involved in medically assisted conception require a well equipped high quality medical setting.

### Demographic Trends

A population decline is occurring in Europe. Some European populations are experiencing the unusual phenomenon of more deaths than births per year. The biggest gaps between birth rates and death rates are found in the Ukraine and Russia. The population of the Ukraine is declining by 340,000 people per year. Russia's population is declining by 950,000 people per year. Unless this decline is offset by in-migration, there will be an over all decrease in the size of both nations. In addition to this phenomenon, fifteen percent of Europe's population is age 65 or over as compared to only seven

percent worldwide (Population Reference Bureau, 2001). The baby demand creates in part the increased interest in MAP practice and is caused in large part by the declining European birth rates and the increasing number of infertile couples. Presently the baby market demand exceeds the supply.

### National Identity Theory

The ethnonationalism of Smith (1992) identifies Europe as a family of cultures comprised of partially shared traditions like Roman law. The presence of a shared European cultural identity has not yet evolved. Smith asserts that each nation-state has a self-image and a perceived national interest of its own.

According to Smith the common western outlook regards a nation as a “rational association of common laws and culture within a defined territory” (p. 56). Nations are political communities, which endorse a common culture and a common social will. The shared bond is both cultural and political uniting peoples who hold myths, memories, symbols and traditions of a comparable nature. As suggested by the findings of the study, the significance of national identities is likely to persist in Europe due to the multiplicity of European language groups and ethnic backgrounds. This study has indicated that the linguistic or cultural roots of the nations are of importance.

The Indo-European family is the origin of most, but not all, of the European languages. Although significant divisions exist between the Latin (Romance), Germanic, and Slav (Slavonic) sub-families, interrelationships have been formed by movement across these divisions. Smith cautions that the consideration of Europeans strictly in

linguistic terms holds limitations.

Europe is composed of a family of cultures which has overlapping elements. Smith sees the impact of religion to vary. For example in regard to Ireland and Poland, collective religious sentiments reinforce the sense of national identity. In contrast other forms of “religious loyalty transcend and thereby diminish purely national identities” (p. 59). Smith attributes this circumstance to Roman Catholicism and Islam.

Of the thirty-five nations in this study, twelve nations or thirty-four percent have Roman Catholicism as the Religion of the majority. One nation, Turkey, has a Muslim majority. The descriptive findings reported in the fourth chapter include references to the role of the church as significant to the regulatory activities which pertain to MAP legislation results from consideration of the sanctity of human life as falling within the purview of the church rather than the legislative or executive arms of government. When these same religious leaders hold the view that MAP techniques are a manipulation of human life and therefore are inappropriate, religious influence is clear.

According to Smith the fluidity in the processes of individual identification, generally reduces the potential for conflicting identities. For example Spain’s population reports a majority religious affiliation of Roman Catholicism yet MAP legislation passed in 1988 (Artificial Procreation) is liberal relative to other European nations. Thus indicating a much different tolerance for the new technologies than most European countries with Catholic majorities. The fluidity in the process, identified by Smith, could be a contributing factor to the variations found in the MAP regulatory policy of the

twelve Catholic countries.

The political division between the Protestant and Catholic states of Europe has declined but the influence remains in some towns and villages. Smith identifies the national or religious community as having no equivalent in regard to “the ritual and ceremony of collective identification” (p. 73). Collective identities tend to be pervasive and persistent, particularly religious and ethnic identities.

National identification is both a cultural and a political norm. Modern day increases in literacy and mass education impact the process. Although the educational systems emphasize technology, math, science, and language training, national differences are retained via literature, history, and the arts. The Council of Europe and some nations particularly France and Germany encourage changes in national histories to change popular perceptions regarding identity. The harmonizing of education systems and the acculturation of teachers to different values has the potential to develop a European dimension.

Both national and European identity have as its defining element the ethno-history of the collectivity. All nations engage in a continuing process by which these nations are reconstructed or re-imagined. This process has a wider European dimension. This European dimension entails the changing boundaries and contents of Europe within the context of an evolving world. The nation-states share a great deal, and have many commonalities, but there are also many differences. As Smith points out political change takes place gradually on an incremental basis through cultural evolution.

As previously noted Europe is a family of cultures with overlapping elements. The impact of shared elements is displayed through the solidarity exercised by the Scandinavian nations in regard to positions taken on MAP regulatory policy. The fact that the nations in the Norse language group also have Evangelical Lutheran religious affiliation majorities produces a strong cultural linkage and shared perspective.

The fact that six out of nine lambda values for language group (see Table 1) are larger than .20 indicates this independent variable is important to the study of MAP regulations. Since religious affiliation had only four lambda values over .20 it would seem this variable is not as strongly related. It is important to consider the information acquired during the data gathering phase of the study regarding resistance to legislation.

#### Study Limitations

1.) This study focused on the dominant aspects of culture for each nation-state. The richness of culture was not systematically studied. Hence further research is needed to test this important idea. Laws are collections of cultural symbols. According to the socio-legal theory of Black (1976), the depth or quantity of culture varies over time and from place to place, and the law varies with the culture. This richness of a culture reflects the number of languages, religion or customs within it. Scant culture is associated with scanty law and a robust culture is linked to more law. Thus, indicating the more heterogeneous the population the more need for law, whereas, the homogeneous population where people tend to have shared perspectives has less need of regulation.

The reliance upon the dominant aspects of culture produced important findings

but its failing was noted in the case of Lithuania's religious affiliation. Due to the large number of ethnic Russians and others, the number of Roman Catholics was below the population percentage used to classify as the majority. Lithuania was classified as non-denomination. But the ethnic Lithuanians are Roman Catholics and their perspectives are reflected in the decisions supported by their government.

2.) When speaking in legal terms the lack of legislation restricting or prohibiting assisted conception means the practice is allowed. If there is no "judge made law" or court case decisions pertaining to assisted conception, this is added indication of acceptance. But this study identified other circumstances, for example, the influence of the Maltese Catholic Church in preventing both the passage of law and the open practice of medically assisted conception. This was viewed as a study limitation.

3.) Another limitation pertains to the inability to obtain information from the governments of all the nation-states. The staff of the ministry of health were very accommodating in most countries. But there were a few nations where the principle informants were physicians, university professors, and others. These situations were described in the fourth chapter.

4.) The small number of countries placed some limits on the analysis. The nominal data further limited the type of statistics that could be utilized.

### Future Study

This exploration of the details of MAP and the influence of language group, religious affiliation, education, economic level, and level of health care upon variation in

national responses to medically assisted procreation provides a basis for further study. The changing circumstances of Central and Eastern Europe merit a follow up to determine the differences, which may develop as stability and improved economy are realized. Presently many of these areas retain a hodgepodge of laws and practices, e.g., early law pertaining to artificial insemination mixed with medical association guidelines pertaining to more current practice.

### Study Contributions

Research. The bulk of the published work in this area has been written by law professors about a few major western nations. This study expands the number of nation-states included. As a result information is gained regarding countries in the process of developing regulatory policy. This research provides detailed descriptions of the regulations adopted by all the nation-states and the MAP practices allowed or not allowed. Inclusion of all the Council of Europe members enables an examination of a sub-group with common geographical and political ties. This was a study of a population and not a sample.

The sociological outlook introduces the role of national identity and demographic differences as a way to help explain variation between nations. The significance of the linguistic, cultural, and social roots of the nations is the focus. The Council of Europe publication *Human Artificial Procreation* set forth the principles granted priority. It documents the lack of consensus among countries. Although the nation-states share a great deal, and have many commonalities, there are many differences. This study found

associations between the nine dependent variables identified as having important roles and several variables representing the role of cultural roots and demographic factors. Understanding of the differences in decision-making and choices made about regulating medically assisted procreation is enhanced by study findings.

Lambda statistics indicate knowing the religious affiliation enables a thirty-three percent improved prediction of the regulatory policy for handling third-party donors. This is the only dependent variable that has a stronger relationship with religious affiliation than language group. In most cases the decision-making falls along language group divisions, but in regard to donor policy differences fall along religious divisions. For example, the Roman Catholic nations of Belgium, France, Hungary, Italy, Poland, Portugal and Spain support anonymous donations.

Knowing the language group enables a fifty-eight percent improved prediction of the nation's regulatory policy on embryo donation. This was the strongest relationship found for either language group or religious affiliation. Embryo donation is the most controversial of the third-party donations. This is the likely basis for the strong connection with the language group, an indicator of shared cultural roots.

Theoretical. The process whereby regulatory policy and law has developed in the nations in this study supports the socio-legal theory of Black and Vago as indicated in the first chapter. These theories facilitate explanations.

Evidence of Ogburn's (1964) cultural lag theory is found repeatedly. The forward movement of material culture progresses in almost all nations at a more rapid rate than



nonmaterial cultural. Therefore, public opinion and legislative action lack the capacity to change as quickly as necessary to address technological advances. Technology is a powerful change mechanism, which has made dramatic differences in the field of medicine as well as other areas of life. Follow-up research action would be needed to confirm the evidence of cultural lag. The boundaries of what is possible have been expanded through technology, and research must endeavor to chart its influence.

The significance of national identity theory as an explanatory tool in this research has been supported as indicated in the previous discussion.

Practical. This research contributes awareness of the potential for problems associated with citizens crossing national borders to acquire infertility treatment not available in their own nations. One area of particular concern is the unregulated status of international surrogacy. The Hague Convention on Intercountry Adoption could easily be modified to include surrogate motherhood. This stands as one practical step which could be taken to advocate for children, and to reduce the potential for low income women to be exploited.

## APPENDIXES

## APPENDIX A

### PRINCIPLES 1 - 21 FROM *HUMAN ARTIFICIAL PROCREATION*

Council of Europe, 1989

#### I. Scope and definitions

The principles set out hereafter shall apply to the techniques of human artificial procreation, in particular to artificial insemination, to the methods involving the removal of ova such as in vitro fertilisation, as well as methods that involve donation of semen, ova or embryos and to acts and procedures on embryos made possible by these techniques.

For the purpose of the application of these principles:

- a. artificial insemination means the introduction of sperm into a woman's genital tract by any means other than sexual intercourse;
- b. in vitro fertilisation means the fusion of an instrumentally removed human ovum with a spermatozoon induced in a culture vessel;
- c. embryo means the result of the fusion of human gametes at all stages of development before the foetal stage;
- d. donor means a person, other than the surrogate mother, who provides his/her gametes or an embryo for the benefit of another person;
- e. surrogate mother means a woman who carries a child for another person and has agreed before pregnancy that the child should be handed over after birth to that person.

## II. General conditions for the use of artificial procreation techniques

### Principle 1

1. The techniques of human artificial procreation may (subject to the circumstances covered by paragraph 1 of Principle 7 below) be used for the benefit of a heterosexual couple when appropriate conditions exist for ensuring the well-being of the future child and only when:

a. — other methods of treatment of infertility have failed or are not appropriate in the particular case or offer no prospect of success; or

— a serious risk exists of transmitting to the child a grave hereditary disease; or

— there is a serious risk that a child would suffer from some other disease

which would result in his early death or severe handicap; and

b. there is a reasonable chance of success and there is no significant risk of adversely affecting the health of the mother or the child.

2. The techniques of human artificial procreation must not be used for obtaining particular characteristics in the future child, in particular for the purpose of selecting the sex of the child except where, in conformity with sub-paragraph a of the preceding paragraph, a serious hereditary disease linked with the sex is to be avoided.

### Principle 2

Any act required by artificial procreation techniques and procedures carried out on embryos and manipulations connected therewith must be performed under the responsibility of a physician and within an establishment authorized by the competent

authority of the state or by an authority set up by the state for that purpose.

#### Principle 3

No person may be compelled or required to take a direct part in the performance of acts mentioned in the present principles to which he/she has an objection on the grounds of conscience.

#### Principle 4

1. The techniques of artificial procreation may be used only if the persons concerned have given their free informed consent, explicitly and in writing, in accordance with national requirements.
2. Before obtaining such consent, the physician and establishment using the techniques of artificial procreation must ensure that the persons concerned are given appropriate information and counseling about possible medical, legal, social and, where relevant, genetic implications of this treatment, particularly those which might affect the interest of the child to be born.

#### Principle 5

The physician and the establishment using the techniques of artificial procreation shall make appropriate inquiries and investigations in order to diagnose and to reduce the risk of transmission of a hereditary or infectious disease, or any other factor which may present a danger to the health of the woman or the future child.

#### Principle 6

The physician and the establishment using the techniques of artificial procreation

must keep records of any information needed in order to fulfill or prove that they have fulfilled the obligations imposed upon them under these principles.

### III. Storage of gametes and embryos

#### Principle 7

1. A single person who is at risk of infertility or of another hazard that may impair his or her future creative capacity may deposit his/her gametes for his or her own personal future use, provided that at the time of the artificial procreation all the requirements set out in these principles are fulfilled.
2. Where a person who has deposited his/her gametes for his/her own future use dies during the storage period or cannot be traced on the expiry of that period, the deposited gametes shall not be used for artificial procreation.
3. Gametes shall not be stored for a period longer than that fixed by national legislation or any other appropriate means.
4. Artificial procreation with the semen of the deceased husband or companion shall not be allowed.

#### Principle 8

1. Only the minimum number of ova shall be fertilised as is strictly necessary to ensure the success of the procreation.
2. Embryos shall not be stored for longer than the period fixed by national legislation or by any other appropriate means.
3. The destination of embryos stored for the use of a couple for procreation but not

used by them may be decided upon only with the consent of both members of the couple.

#### IV. Donation of gametes and embryos

##### Principle 9

1. No profit shall be allowed for donations of ova, sperm, embryos or any element collected from them. Only loss of earnings as well as traveling and other expenses directly caused by the donation may be refunded to the donor.
2. A person or a public or private body which is authorized to offer gametes for the purpose of artificial procreation or research shall not gain any profit from such offer.
3. Donation of gametes for artificial procreation shall not be subject to any discriminatory conditions. The donor can, at any moment before their use, require that his/her gametes should not be used for the initially intended purpose and give instructions about the use which should be made of them.

##### Principle 10

The number of children born from the gametes of any one donor shall be limited by national legislation or any other appropriate means.

##### Principle 11

1. In principle, in vitro fertilisation shall be effected using gametes of the members of the couple. The same rule shall apply to any other procedure that involves ova in vitro or embryos in vitro. However in exceptional cases to be defined by member states, the use of gametes of donors may be permitted.
2. The donation of embryos not used by a couple to another couple for the purpose

of artificial procreation may be allowed in exceptional cases by member states.

#### Principle 12

The transfer of an embryo from the uterus of one woman to the uterus of another shall not be allowed.

#### Principle 13

1. The physician and the staff of the establishment using the techniques of artificial procreation shall maintain the anonymity of the donor and, subject to the requirements of national law in legal proceedings, shall keep secret the identity of the members of the couple as well as the fact of artificial procreation. Where it is necessary in the interests of the child's health or for the purposes of genetic counseling, information on the genetic characteristics of the donor can be given.

2. However, national law may provide that the child, at an appropriate age, may have access to information relating to the manner of his or her conception or even to the identity of the donor.

### V. Determination of maternity and paternity

#### Principle 14

1. The woman who gave birth to the child is considered in law as the mother.

2. In case of utilisation of the sperm of the donor:

a.. the mother's husband is considered as the legitimate father and, if he has consented to the artificial procreation, he may not contest the legitimacy of the child on the grounds of artificial procreation.



3. Where the gametes donation is made through the intermediacy of an authorized establishment, no filial relationship may be established between the donors of gametes and the child conceived as the result of artificial procreation. No proceedings for maintenance may be brought against a donor or by a donor against the child.

## VI. Surrogate motherhood

### Principle 15

1. No physician or establishment may use the techniques of artificial procreation for the conception of a child to be carried by a surrogate mother.

2. Any contract or agreement between the surrogate mother and the person or couple for whom she carried the child shall be unenforceable. Any action by an intermediary for the benefit of persons concerned with surrogate motherhood as well as any advertising relating thereto shall be prohibited.

3. However, states may, in exceptional cases fixed by their national law, provide, while duly respecting paragraph 2 of this principle, that a physician or an establishment may proceed to the fertilisation of a surrogate mother by artificial procreation techniques, provided that:

- a. the surrogate mother obtains no material benefit from the operation;
- b. the surrogate mother has the choice at birth of keeping the child.

## VII. Acts and procedures carried out on embryos

### Principle 16

The fertilisation of ova in vitro and the obtaining of embryos by lavage shall not

be permitted for research purposes.

#### Principle 17

1. No act or procedure shall be permitted on any embryo in vitro other than those intended for the benefit. When a state allows, in addition, investigative and experimental procedures other than those mentioned in the preceding paragraph for a preventive, diagnostic or therapeutic purpose for grave diseases of embryos, it shall require that the following conditions be fulfilled:

a. the purpose cannot be achieved by any other method; and

b. the embryo shall not be used after fourteen days from fertilisation, any period storage by freezing or by any other means not included; and

c. the consent of the couple has been given according to paragraph 3 of Principle 8 and, if the embryo has resulted from fertilisation in vitro using donors' gametes, their consent shall also be required; and

d. a properly constituted multidisciplinary ethical committee has given its approval. The splitting of the cells of an embryo may be allowed by member states only in order to use a part of it for diagnostic purposes if it is designed to establish a serious illness or anomaly in the future child and if conditions b, c and d mentioned in paragraph 2 above are satisfied.

#### Principle 18

The introduction into a woman's uterus of a human embryo which has been subjected to any act or procedure other than those mentioned in paragraph 1 and 3 of the

preceding principle shall be prohibited.

Principle 19

Once it has been implanted, an embryo resulting from fertilisation in vitro shall not undergo experimentation in utero.

Principle 20

The use of the techniques of artificial procreation to create identical human beings by cloning or by any other method shall be prohibited.

Principle 21

1. The placing of a human embryo in the uterus of another species or vice versa shall be prohibited. The same shall apply to any fusion of embryos or other procedure likely to produce a chimera.
2. The fusion of a human gamete with the gamete of another species shall also be prohibited. The same shall apply to any fusion of embryos or other procedure likely to produce a chimera.
3. However, member states may allow the fusion of human and animal gametes for investigation aimed at diagnosing infertility, provided that the development of hybrid cells ends at the two-cell stage.

Source: Council of Europe. 1989. *Human Artificial Procreation*. France: Council of Europe. (pp. 35-40)

## APPENDIX B

### LEGISLATION PERTAINING TO MEDICALLY ASSISTED PROCREATION

**Austria** Reproductive Medicine Law (BGB1. Nr. 275/1992); Ordinance on reports about activities and experiences with medically assisted reproduction (BGB1.II, Nr. 362/1998); Fund for the financing of in vitro fertilizations (BGB1. I Nr. 180/1999).

**Belgium** Crown Order of February 15, 1999 (Moniteur Belge; Publie`le: 1999-03-25) diagnosis and treatment of sterility; sets standards of compliance for reproductive medicine care programs.

**Bulgaria** Order of the Ministry of Health and Social Welfare (Durzhaven Vestnik, No. 57, 17 July 1990) on artificial insemination of women.

**Czech Republic** 1982 Order of the Health Ministry; homologous/heterologous artificial insemination.

**Denmark** Law No. 460 of June 1997 (Lovtidende, 1997) on artificial fertilization in connection with medical treatment, diagnosis, and research. Act No. 503 on a Scientific Ethical Committee System and the Handling of Biomedical Research Projects (1992) addresses cloning.

**Estonia** Law on Artificial Insemination and Embryo Protection of June 11, 1997.

**France** No. 94-548 of July 1, 1994 on personal data processing for health research purposes; No. 94-653 of July 29, 1994 on respect for the human body; No. 94-654 of July 29, 1994 on donation and use of human body parts and derivatives, MAP and antenatal diagnosis.

**Germany** 1990 Embryo Protection Law (EschG; Vom 13. Dezember 1990); Act on the Arrangements for the Adoption of Children and on the Prohibition of Surrogate Motherhood (November 27, 1989); Article 1591 of the *Bürgerliches Gesetzbuch* (BGB or Civil Code) reformed to define the mother of a child as the woman who gave birth to it. In re: surrogate motherhood prevents the biological mother who donated an egg or embryo from being considered the mother.

**Greece** ratified by law 2619/1998 the Council of Europe's Convention on Human Rights and Biomedicine

**Hungary** Hungarian Act on Health Care (Act 154 /1997); Amended December 1999 to repeal Article 166(1)/e and Articles 183, 184, provisions re: surrogate motherhood. Surrogacy prohibited effective January 1, 2000. Act 22 of 1998 passed by parliament March 10, 1998 on the amendment of criminal laws.

**Iceland** Law on Medically-Assisted Procreation (No. 55/1996) of June 1, 1996.

**Italy** Pending Bill No. 4048 in the Senate of the Italian Republic, 13 Legislature.

**Netherlands** 1989 IVF Planning Decree - framework for licensing of in vitro fertilization centers. Medical Treatments Act of October 24, 1997 replaced and updated the earlier Hospitals Act. Human Subjects Act of February 26, 1998 pertains to medical research. September 16, 1993 Law, Penal Code supplement prohibits commercial surrogate motherhood. Order of May 26, 1998 (Staatsblad, No.336) prohibits sex-selection for non-medical reasons.

**Norway** Act Relating to the Application of Biotechnology in Medicine: No. 56 August 5, 1994.

**Portugal** Legislative Decree No. 319/1986 passed September 25, 1985 regulates sperm banks; Article 1839,3 Civil Code: the filiation of children born as the result of artificial insemination, paternity cannot be disclaimed when the consent of the mother's husband is documented; Penal Code, Article 168, prohibits artificial insemination if the female does not consent.

**Russia** Act on Artificial Fertilization (Act No.55/1996); Regulation on Artificial Fertilization dated September 30, 1997.

**Slovenia** Infertility Treatment and Biomedically Assisted Procreation Procedures Act (No. 70/2000) came into force September 2000.

**Spain** Act No. 35/1988 Artificial Procreation; Law No.42 of December 28, 1988 - donation/use of human embryos and fetuses.

**Sweden** Law No.1140 of December 20, 1984 on artificial insemination; In Vitro Fertilization Act of 1988 (June 8, 1988) is the basis for current MAP practice. Law No. 115 of March 14, 1991 prohibits cloning of embryos and oocytes; criminal sanctions.

**Switzerland** Federal Law for Medically Assisted Reproduction adopted December 18, 1998.

**United Kingdom** 1990 Human Fertilisation and Embryology Act; 1985 Surrogacy Arrangements Act.

**Turkey** Official Gazette, No. 22822 of November 19, 1996.

**Australia** 1992 National Health & Medical Research Act established the NHMR Council; Infertility Treatment Act of 1995 Victoria (criminal model which includes licenses and approvals); The Reproductive Technology Act 1988 South Australia (licensing model); Human Reproductive Technology Act 1991 Western Australia (licensing model); Surrogacy Contracts Act of April 20, 1993 (Act No.4/1993) Tasmania, Australia.

**Canada** House Bill C-47, Human Reproductive and Genetic Technologies Act, not adopted but remains the basis for the moratorium still in effect.

**New Zealand** Status of Children Act (No.185/1987) of July 20, 1987 provides for the status of persons conceived as the result of certain assisted procreation procedures.

## APPENDIX C

### SUPPLEMENTAL STATISTICAL ANALYSIS

Table A-1: Relationship of Language Group Collapsed to Three Families: Germanic, Romance, and Slavonic / Other to MAP Regulations for all 35 Nations as Measured by Lambda

Table A-2: Relationship of Language Group Collapsed to Germanic and Other to MAP Regulations for all 35 Nations as Measured by Lambda

Table A-3: Relationship of Religious Affiliation Collapsed to Catholic and Other Christian to MAP Regulations for the 34 Nations With a Christian Majority as Measured by Lambda

Table A-4: Relationship of Percent GNP Spent on Education Collapsed to Two Levels (Low versus High Expenditures) to MAP Regulations for all 35 Nations as Measured by Lambda

Table A-5: Relationship of Per Capita GNP Collapsed to Two Levels: Under and Over \$18,000 to MAP Regulations for all 35 Nations as Measured by Lambda

Table A-6: Relationship of Percent GDP Spent on Health Care Collapsed to Two Levels: Under and Over 7.1 Percent to MAP Regulations for all 35 Nations as Measured by Lambda

Table A-7: Relationship of Birth Rate Collapsed to Two Levels: Ten or Less and Over Ten Births Per 1,000 Population to MAP Regulations for all 35 Nations as Measured by Lambda



Table A-8: Relationship of Infant Mortality Rate Collapsed to Two Levels: Under 5.4 and Over 5.4 Deaths Per Infants Under Age One Year Per 1,000 Live Births Annually to MAP Regulations for all 35 Nations as Measured by Lambda

Table A-9: Relationship of Life Expectancy at Birth (Years) Collapsed to Two Levels: Under 77 Years and 77 Years and Over to MAP Regulations for all 35 Nations as Measured by Lambda

---

Table A-1: Relationship of Language Group Collapsed to Three Families: Germanic, Romance, and Slavonic / Other to MAP Regulations for all 35 Nations as Measured by Lambda

---

<u>Dependent Variables</u>	Lambda
Legislative Status Collapsed to Unregulated and Regulated	.00
Marital Restrictions Collapsed to Unrestricted and Restricted	.07
Age Restrictions Collapsed to Unrestricted and Restricted	.00
Posthumous Conception Collapsed to Prohibited and Not Prohibited	.12
Donor Insemination Collapsed to Prohibited and Not Prohibited	.00
Ovum Donation Collapsed to Prohibited and Not Prohibited	.00
Embryo Donation Collapsed to Prohibited and Not Prohibited	.00
Surrogate Motherhood Collapsed to Prohibited and Not Prohibited	.07
Policy on Handling Donors Collapsed to Anonymous Donors and Other	.21

---

Table A-2: Relationship of Language Group Collapsed to Germanic and Other to MAP Regulations for all 35 Nations as Measured by Lambda

<u>Dependent Variables</u>	Lambda
Legislative Status Collapsed to Unregulated and Regulated	.00
Marital Restrictions Collapsed to Unrestricted and Restricted	.00
Age Restrictions Collapsed to Unrestricted and Restricted	.00
Posthumous Conception Collapsed to Prohibited and Not Prohibited	.12
Donor Insemination Collapsed to Prohibited and Not Prohibited	.00
Ovum Donation Collapsed to Prohibited and Not Prohibited	.00
Embryo Donation Collapsed to Prohibited and Not Prohibited	.00
Surrogate Motherhood Collapsed to Prohibited and Not Prohibited	.00
Policy on Handling Donors Collapsed to Anonymous Donors and Other	.07

---

Table A-3: Relationship of Religious Affiliation Collapsed to Catholic and Other Christian to MAP Regulations for the 34 Nations with a Christian Majority as Measured by Lambda

---

<u>Dependent Variables</u>	Lambda
Legislative Status Collapsed to Unregulated and Regulated	.00
Marital Restrictions Collapsed to Unrestricted and Restricted	.00
Age Restrictions Collapsed to Unrestricted and Restricted	.00
Posthumous Conception Collapsed to Prohibited and Not Prohibited	.00
Donor Insemination Collapsed to Prohibited and Not Prohibited	.00
Ovum Donation Collapsed to Prohibited and Not Prohibited	.00
Embryo Donation Collapsed to Prohibited and Not Prohibited	.00
Surrogate Motherhood Collapsed to Prohibited and Not Prohibited	.00
Policy on Handling Donors Collapsed to Anonymous Donors and Other	.14

---

---

Table A-4: Relationship of Percent GNP Spent on Education Collapsed to Two Levels (Low versus High Expenditures) to MAP Regulations for all 35 Nations as Measured by Lambda

---

<u>Dependent Variables</u>	Lambda
Legislative Status Collapsed to Unregulated and Regulated	.00
Marital Restrictions Collapsed to Unrestricted and Restricted	.00
Age Restrictions Collapsed to Unrestricted and Restricted	.00
Posthumous Conception Collapsed to Prohibited and Not Prohibited	.00
Donor Insemination Collapsed to Prohibited and Not Prohibited	.00
Ovum Donation Collapsed to Prohibited and Not Prohibited	.00
Embryo Donation Collapsed to Prohibited and Not Prohibited	.00
Surrogate Motherhood Collapsed to Prohibited and Not Prohibited	.00
Policy on Handling Donors Collapsed to Anonymous Donors and Other	.00

---

Table A-5: Relationship of Per Capita GNP Collapsed to Two Levels: Under and Over \$18,000 to MAP Regulations for all 35 Nations as Measured by Lambda

<u>Dependent Variables</u>	Lambda
Legislative Status Collapsed to Unregulated and Regulated	.00
Marital Restrictions Collapsed to Unrestricted and Restricted	.00
Age Restrictions Collapsed to Unrestricted and Restricted	.00
Posthumous Conception Collapsed to Prohibited and Not Prohibited	.24
Donor Insemination Collapsed to Prohibited and Not Prohibited	.00
Ovum Donation Collapsed to Prohibited and Not Prohibited	.00
Embryo Donation Collapsed to Prohibited and Not Prohibited	.00
Surrogate Motherhood Collapsed to Prohibited and Not Prohibited	.00
Policy on Handling Donors Collapsed to Anonymous Donors and Other	.00

---

Table A-6: Relationship of Percent GDP Spent on Health Care Collapsed to Two Levels:  
Under and Over 7.1 Percent to MAP Regulations for all 35 Nations as Measured by  
Lambda

---

<u>Dependent Variables</u>	Lambda
Legislative Status Collapsed to Unregulated and Regulated	.00
Marital Restrictions Collapsed to Unrestricted and Restricted	.07
Age Restrictions Collapsed to Unrestricted and Restricted	.00
Posthumous Conception Collapsed to Prohibited and Not Prohibited	.35
Donor Insemination Collapsed to Prohibited and Not Prohibited	.00
Ovum Donation Collapsed to Prohibited and Not Prohibited	.00
Embryo Donation Collapsed to Prohibited and Not Prohibited	.00
Surrogate Motherhood Collapsed to Prohibited and Not Prohibited	.00
Policy on Handling Donors Collapsed to Anonymous Donors and Other	.07

---

---

Table A-7: Relationship of Birth Rate Collapsed to Two Levels: Ten or Less and Over Ten Births Per 1,000 Population to MAP Regulations for all 35 Nations as Measured by Lambda

---

<u>Dependent Variables</u>	Lambda
Legislative Status Collapsed to Unregulated and Regulated	.00
Marital Restrictions Collapsed to Unrestricted and Restricted	.00
Age Restrictions Collapsed to Unrestricted and Restricted	.20
Posthumous Conception Collapsed to Prohibited and Not Prohibited	.06
Donor Insemination Collapsed to Prohibited and Not Prohibited	.00
Ovum Donation Collapsed to Prohibited and Not Prohibited	.00
Embryo Donation Collapsed to Prohibited and Not Prohibited	.00
Surrogate Motherhood Collapsed to Prohibited and Not Prohibited	.13
Policy on Handling Donors Collapsed to Anonymous Donors and Other	.00

---



---

Table A-8: Relationship of Infant Mortality Rate Collapsed to Two Levels: Under 5.4 and Over 5.4 Deaths Per Infants Under Age One Year Per 1,000 Live Births Annually to MAP Regulations for all 35 Nations as Measured by Lambda

---

<u>Dependent Variables</u>	Lambda
Legislative Status Collapsed to Unregulated and Regulated	.00
Marital Restrictions Collapsed to Unrestricted and Restricted	.07
Age Restrictions Collapsed to Unrestricted and Restricted	.13
Posthumous Conception Collapsed to Prohibited and Not Prohibited	.47
Donor Insemination Collapsed to Prohibited and Not Prohibited	.00
Ovum Donation Collapsed to Prohibited and Not Prohibited	.00
Embryo Donation Collapsed to Prohibited and Not Prohibited	.00
Surrogate Motherhood Collapsed to Prohibited and Not Prohibited	.07
Policy on Handling Donors Collapsed to Anonymous Donors and Other	.00

---

---

Table A-9: Relationship of Life Expectancy at Birth (Years) Collapsed to Two Levels:  
Under 77 Years and 77 Years and Over to MAP Regulations for all 35 Nations as  
Measured by Lambda

---

<u>Dependent Variables</u>	Lambda
Legislative Status Collapsed to Unregulated and Regulated	.00
Marital Restrictions Collapsed to Unrestricted and Restricted	.00
Age Restrictions Collapsed to Unrestricted and Restricted	.07
Posthumous Conception Collapsed to Prohibited and Not Prohibited	.12
Donor Insemination Collapsed to Prohibited and Not Prohibited	.00
Ovum Donation Collapsed to Prohibited and Not Prohibited	.00
Embryo Donation Collapsed to Prohibited and Not Prohibited	.00
Surrogate Motherhood Collapsed to Prohibited and Not Prohibited	.13
Policy on Handling Donors Collapsed to Anonymous Donors and Other	.00

---

## REFERENCES CONSULTED

- Abbing, H.D.C.R. (1998). The Convention on Human Rights and Biomedicine, an appraisal of the Council of Europe convention. European Journal of Health Law. 5, 377-387.
- Amadio, M. (Ed.). (2000). World Data on Education, A guide to the structure of national education systems. France: UNESCO.
- Ash, T. G. (2001). Is Britain European? International Affairs. 77 (1), 1-13.
- Asvall, J. E. & R. Alderslade. (2001). Europe. In C.E. Koop, C.E. Pearson, & M.R. Schwarz (Eds.), Critical Issues in Global Health. (pp.37- 46). San Francisco: Jossey-Bass.
- Atherton, R. (1999 June). En ventre sa frigidaire: posthumous children in the succession context. Legal Studies. 19 (2), 139-164.
- Ball, N. T. (2000 November). The reemergence of enlightenment ideas in the 1994 French bioethics debates. Duke Law Journal. 545 - 587.
- Bell, D. (1999, June). Human cloning and international human rights law. Sidney Law Review. 21 (2), 202-230.
- Bennett, B. (1999). Posthumous reproduction and the meanings of autonomy. Melbourne University Law Review. 23 (2), 286-307.
- Birmontiene, T. (1999). The development of a health law doctrine in Lithuania. European Journal of Health Law. 6, 181-186.
- Black, D. (1998). The Social Structure of Right and Wrong, (Rev. ed.). San Diego, CA: Academic Press.
- Black, D. (1976). The Behavior of Law. New York: Academic Press.
- Brazier, M. (1999, Summer). Regulating the reproduction business?. Medical Law Review. 7 (2), 166-193.

- Brazier, M., A.Campbell, & S. Golombok. (1998, October). Surrogacy: Review for Health Ministers of Current Arrangements for Payments and Regulation, Paper presented to Parliament by the Secretary of State for Health by Command of Her Majesty. London: Stationery Office.
- Brenwald & Redeker. (1999). A primer on posthumous conception and related assisted reproduction. Washburn Law Journal. 38, 599-654.
- British Medical Association. (1996). Changing Conceptions of Motherhood, The Practice of Surrogacy in Britain. British Medical Association: printed in Plymouth by Latimer Trend.
- Bukowski, C. (March, 1999). Slovenia's transition to democracy: theory and practice. East European Quarterly. 33 (1), 69-93.
- Busse, R. (1998, January). Comparative economy of health systems in Europe, Paper presented at the European Standing Conference of National Ethics Committees, Paris, Council of Europe.
- Cantrell, M. K. (1998-99). International Response to Dolly: Will Scientific Freedom Get Sheared? Journal of Law & Health. 13, 69-102.
- Cederman, L.E. (Ed.). (2001). Constructing Europe's Identity, The External Dimension. Boulder & London: Lynne Rienner Publishers.
- Cederman, L.E. (2001). Nationalism and bounded integration: What it would take to construct a European demos. European Journal of International Relations. 7 (2), 139-174.
- Cerulo, K.A. (1997). Identity Construction: New Issues, New Directions. Annual Review Sociology. 23, 385-409.
- Cesen, M. & V.M. Drnovsek. (2000). The process of health legislation reform in the Republic of Slovenia. European Journal of Health Law. 7, 73-84.
- Clements, L.J., N. Mole, & A. Simmons. (1999). European Human Rights Taking a Case under the Convention 2<sup>nd</sup> ed. London: Sweet & Maxwell.

- Council of Europe. (1998, June). Medically Assisted Procreation and the Protection of the Human Embryo Comparative Study on the Situation in 39 States Cloning Comparative Study on the Situation in 44 States. Strasbourg: Council of Europe.
- Council of Europe. (1997, September 27). Parliamentary Assembly Order No. 534 on research and cloning of human beings. Strasbourg: Council of Europe.
- Council of Europe. (1997, April 4). Convention for the protection of human rights and dignity of the human being with regard to the application of biology and medicine: Convention on human rights and biomedicine. (ETS no. 164). Strasbourg: Council of Europe.
- Council of Europe. (1998). Additional protocol to the Convention for the protection of human rights and dignity of the human being with regard to the application of biology and medicine, on the prohibition of cloning human beings. (ETS no. 168). Strasbourg: Council of Europe.
- Council of Europe. (1995, April). Family Law in the Future. Proceedings of the 3<sup>rd</sup> European Conference on Family Law (Cadiz, Spain).
- Council of Europe (CAHBI). (1989). Human Artificial Procreation. France: Council of Europe.
- Dalby, A. (1998). Dictionary of Languages, The Definitive Reference to More Than 400 Languages. London: Bloomsbury.
- Dalla-Vorgia, P. (1996). Assisted Reproduction in Greece. In D. Evans (Ed.), Creating the Child, The Ethics, Law and Practice of Assisted Procreation (pp. 279-286). The Hague: Martinus Nijhoff Publishers.
- Da Silva, P. M. (1994). Portugal: Creation of a National Ethics Council. European Journal of Health Law. 1, 91-94.
- Daniels, K. R. (1994, January-February). Adoption and donor insemination: Factors influencing couples' choices. Child Welfare League of America. LXXIII (1), 5-14.
- Douglas, G. (1997). R v Human Fertilisation and Embryology Authority ex parte Blood, 6 February 1997. European Journal of Health Law. 4, 195-196.

- Drache, D. & T. Sullivan (Eds.). (1999). Market Limits in Health Reform, Public Success, Private Failure. London: Routledge.
- Dreifuss-Netter, F. (1996). Adoption and Medically Assisted Procreation under French Law. Saint Louis-Warsaw Transatlantic Law Journal. 93-107.
- Durkheim, E. (1982). The Rules of Sociological Method and Selected Texts on Sociology and its Method. New York: The Free Press.
- Durkheim, E. (1983). Durkheim and the Law. New York: St. Martin's Press.
- Durkheim, E. (1986). Durkheim on Politics and the State. Stanford, CA: Stanford University Press.
- Eriksson, M. K. (2000). The Right to Procreate. In Reproductive Freedom, In the Context of International Human Rights and Humanitarian Law,(pp.188-235). The Hague: Martinus Nijhoff Publishers.
- European Communities. (1998, September). Social Portrait of Europe. Belgium: European Communities.
- Europa World Year Book 2000. (41<sup>st</sup> ed.). London: Europa Publications Limited 2000.
- Faust, S. M. (2000). Baby girl or baby boy? Now you can choose: A look at new biology and no law. Albany Law Journal of Science and Technology. 281-303.
- Ferrando, G. (1996). Artificial Insemination in Italy. In D. Evans (Ed.), Creating the Child, The Ethics, Law and Practice of Assisted Procreation (pp. 255-266). The Hague: Martinus Nijhoff Publishers.
- Fluss, S. S. (1995). Reproductive health legislation in the Russian Federation and selected countries in Central and Eastern Europe: Some recent developments. European Journal of Health Law. 2, 61-64.
- Freeman, Richard. (2000). The Politics of Health in Europe. Manchester, UK: Manchester University Press.

- Friedman, L.M. & J. Ladinsky. (1977). Social Change and the Law of Industrial Accidents. In Friedman, L.M. & S. Macaulay (Eds.), Law and the Behavioral Sciences 2<sup>nd</sup> ed., (pp. 629-652). Indianapolis, IN: Bobbs-Merrill Company.
- Friedman, L.M. & S. Macaulay (Eds.). (1977). Law and the Behavioral Sciences 2<sup>nd</sup> ed. Indianapolis, IN: Bobbs-Merrill Company.
- Garrity, A. (2000). A Comparative Analysis of Surrogacy Law in the United States and Great Britain- A proposed model statute for Louisiana. Louisiana Law Review. 809-832.
- Golovakha, E. (1999, Fall). Living standards and Economic Attitudes of the population, From illusory prosperity to illusory impoverishment. International Journal of Sociology. 29 (3), 31-48.
- Graff, N. B. (2000, Summer). Intercountry adoption and the convention on the rights of the child: can the free market in children be controlled? Syracuse Journal of International Law and Commerce. 405 - 430.
- Griffith, K. C. (1997, November). New Zealand Adoption, History and Practice, Social and Legal, 1840-1996. (pp. 208, 209-209 F, 321-321 D).
- Gunning, J. (1999). Article 18 of the European Biomedicine Convention: What impact on assisted reproduction? European Journal of Health Law. 6, 165-171.
- Heagle, K. (1998, Fall). Should there be another ewe? A critical analysis of the European Union cloning legislation. Dickinson Journal of International Law. 17 (1), 135-158.
- Healy, P. (1995, August). Statutory Prohibitions and the Regulation of New Reproductive Technologies in Canada. McGill Law Journal. 40, 905-946.
- Hofstede, G. (1980). Culture's Consequences. Beverly Hills: Sage.
- Inkeles, A. (1997). National Character, A Psycho-Social Perspective. London: Transaction Publishers.
- Jones, H. W. Jr. and J. Cohen (Eds.). (1999, May). IFFS Surveillance 98. Fertility and Sterility. (Supplement 2) 71 (5).

- Katz, G. (1998, Summer). Parpalaix c. CECOS: Protecting intent in reproductive technology Harvard Journal of Law & Technology. 11 (3), 683-698
- Koop, C.E., C.E. Pearson, & M.R. Schwarz. (2001). Critical Issues in Global Health. San Francisco, CA: Josey-Bass.
- Kidder, R.L. (1983). Connecting Law and Society, An Introduction to Research and Theory. Englewood Cliffs, NJ: Prentice-Hall.
- Kriari-Catranis, I. (1997). Embryo research and human rights, an overview of developments in Europe. European Journal of Health Law. 4, 43-67.
- Krim, T. (1996). Beyond Baby M: International Perspectives on Gestational Surrogacy and the Demise of the Unitary Mother. Annals of Health Law. 5, 193-226.
- Landau, R. (1995). The Impact of New Medical Technologies in Human Reproduction on Children's Personal Safety and Well-Being in the Family. Marriage & Family Review. 21, 123-135.
- Latham, M. (1998). The French Parliamentary guidelines of May 1997: clarification or fudge? Medical Law International. 3, 235-241.
- Latham, M. (1998). Regulating the new reproductive technologies: A cross-channel comparison. Medical Law International. 3, 89-115.
- Lawson, R.A. & H.G. Schermers (Eds). (1997). Leading Cases of the European Court of Human Rights. Maklu: Ars Aequi Libri.
- Leibowitz-Dori, I. (1997, Winter). Womb for Rent: The Future of International Trade in Surrogacy. Minnesota Journal of Global Trade. 6, 329-354.
- Lenoir, N. (1999, Summer). Universal Declaration on the Human Genome and Human Rights The First Legal and Ethical Framework at the Global Level. Columbia Human Rights Law Review. 30: 537-568.
- Lenoir, N. (1995, Winter). Bioethics, Constitutions, and Human Rights. Diogenes. 43 (4), 11-33.



- Lorio, K. V. (1999, Summer). Pushing Boundaries: An Interdisciplinary Examination of New Reproductive Technology: The Process of Regulating Assisted Reproductive Technologies: What Can We Learn From Our Neighbors -What Translates and What Does Not. Loyola Law Review. 45, 247-267.
- Lorio, K. V. (1996, Fall). Successions and donations: A Symposium: From Cradle to Tomb: Estate Planning Considerations of the New Procreation. Louisiana Law Review. 57, 27-53.
- Macionis, J.J. (2002). Society, The Basics, 6<sup>th</sup> ed. Upper Saddle River, NJ: Prentice Hall.
- Manual, C. et al. (1999). Is the legislation of European states in keeping with the recent Convention on Human Rights and Biomedicine? European Journal of Health Law. 6, 55-69.
- McCormick, R. A. (1999, Summer). Reproductive technologies: Where are we headed? Loyola Law Review. 45 (2), 269-285.
- McEwen, A.G. (1999, January). So You're Having Another Woman's Baby: Economics and Exploitation in Gestational Surrogacy. Vanderbilt Journal of Transnational Law. 32: 271-304.
- McLean, S. (1999). Creating postmortem pregnancies: a U.K. perspective. Juridical Review. pt.6, 323-342.
- McLean, S. (1998, July). Review of the Common Law Provisions Relating to the Removal of Gametes and the Consent Provisions in the Human Fertilisation and Embryology Act 1990, Report prepared for the United Kingdom Health Ministers.
- Memeteau, G. (1997). Post mortem assisted procreation according to French law. European Journal of Health Law. 4, 199-203.
- Menendez-Alarcon, A. (2000, December). Spain in the European Union, A qualitative study of national identity. International Journal of Cultural Studies. 3 (3), 331-350.
- Merchant, J. (1996). Biogenetics, artificial procreation, and public policy in the United States and France. Technology In Society. 18 (1), 1-15.

- Michaud, J. (1994). French laws on bioethics. European Journal of Health Law. 2, 55-59.
- O'Brien, J.F.X. (1998). Cinderella's Dilemma: Does the In Vitro Statute Fit? Cloning and Science in French and American Law. Tulane Journal of International and Comparative Law. 6, 525-551.
- Ogburn, W.F. (1964). On Culture and Social Change. Chicago: University of Chicago Press.
- Pampel, F.C. (1998, October). National Context, Social Change, and Sex Differences in Suicide Rates. American Sociological Review. 63, 744-758.
- Pitrolo, E. (1996). The Birds, The Bees, and the Deep Freeze: Is There International Consensus in the Debate Over Assisted Reproductive Technologies? Houston Journal of International Law. 19, 147-205.
- Pohorila, N. & K. M. Slomczynski. (1999-2000, Winter). Individual Income Gains and losses in Ukraine, 1993-1996. International Journal of Sociology. 29 (4): 54-76.
- Population Reference Bureau. (May 2001). *2001 World Population Data Sheet*. Washington D.C.
- Population Reference Bureau. (June 2000). *2000 World Population Data Sheet*. Washington D.C.
- Poser, R.A. (1996). Law and Legal Theory in England and America. Oxford: Clarendon Press.
- Purviance, S. M.(1995). Infertility Treatment for Postmenopausal Patients: An Equity-Based Approach. Ethics & Behavior. 5 (1), 15-24.
- Rae, S. B. (1994). Parental Rights and the Definition of Motherhood in Surrogate Motherhood. Southern California Review of Law and Woman's Studies. 3 (2), 219-277.
- Ragone', H. (1994). Surrogate Motherhood, Conception in the Heart. Boulder: Westview Press.

- Ratner, S. J. (1999, Winter). Baa, Baa, Cloned Sheep, Have you any law? Legislature responses to animal cloning in the European Union and United States. Boston College International and Comparative Law Review. 22 (1), 141-157.
- Rose, A. P. (1999, March). Reproductive misconception: why cloning is not just another assisted reproductive technology. Duke Law Journal 48 (5), 1133-1156.
- Savas, D. & S. Treece. (1998). Fertility Clinics: One Code of Practice? Medical Law International. 3, 243-258.
- Schlesinger, P. R. (2001). From Cultural Protection to Political Culture? Media Policy and the European Union. In L.E.Cederson (Ed.). Constructing Europe's Identity, The External Dimension.(pp. 91 - 114). Boulder & London: Lynne Rienner Publishers.
- Seibert, H. (1994). Legal Considerations and the New Techniques of Procreation. October 1994 Symposium on the Family on the Eve of the Year 2000. Law/Technology (publication of the World Jurist Association). 27 (4), 23-28.
- Shaw, J. (1998). A Concept of European Union Citizenship: Problems and Possibilities. In A.J. Kershen (Ed.). A Question of Identity (pp. 230-247). Aldershot: Ashgate Publishing.
- Shuster, E.(1999, Spring). The Posthumous Gift of Life: The World According to Kane. Journal of Contemporary Health Law & Policy. 15, 401-423.
- Shuster, E. (1992). When genes determine motherhood: problems in gestational surrogacy. Human Reproduction. 7 (7), 1029-1033.
- Skene, L. (2000). An Overview of Assisted Reproductive Technology Regulation in Australia and New Zealand. Texas International Law Journal. 35 (31), 31- 49.
- Smith, A. D. (1995). Gastronomy or geology? The role of nationalism in the reconstruction of nations. Nations and Nationalism. 1 (1), 3-23.
- Smith, A. D. (1992). National identity and the idea of European unity. International Affairs. 68 (1), 55-76.
- Smith, A. D. (1991). National Identity. Reno: University of Nevada Press.

- Smith, A. D. (1995). Nations and Nationalism in a Global Era. Cambridge, UK: Polity Press.
- Smith, A. D. (1998). Nationalism and Modernism, A Critical Survey of Recent Theories of Nations and Nationalism. London: Routledge.
- Sootak, J. (1998). A wish to have a baby and the dignity of the child and embryo: about the law on artificial insemination and embryo protection of the Republic of Estonia. European Journal of Health Law. 5, 191-201.
- Stern, K. (1994). The regulation of assisted conception in England. European Journal of Health Law. 1, 53-79.
- Sutton, J.R. (2001). Law/Society, Origins, Interactions, and Change. Thousand Oaks, CA: Pine Forge Press.
- Sutton, S. (1999, Summer). The real sexual revolution: posthumously conceived children. St John's Law Review, 73, 857-931.
- Te Braake, T. A.M. (2000). Regulation of Assisted Reproductive Technology in the Netherlands Texas International Law Journal. 35 (93), 93-122.
- Thornton, J.G., H.M. McNamara, & I.A. Montague (Leeds University). (1994). Would you rather be a 'birth' or a 'genetic' mother? If so, how much? Journal of Medical Ethics. 20, 87-92.
- Triandis, H. C. (1995). Individualism & Collectivism. Boulder: Westview Press.
- UNESCO 1999 Statistical Yearbook. (1999). Paris: UNESCO & Bernan Press.
- UNESCO. (1997, November 11). Universal Declaration on the Human Genome and Human Rights. Paris: UNESCO.
- Vago, S. (1981). Law and Society. Englewood Cliffs, NJ: Prentice-Hall.
- Wallbank, J. (1999). "Throwing baby out with the bath water": Some reflections on the evolution of reproductive technology. Res Publica: a Journal of Legal and Social Philosophy. 5 (1), 47-67.

- Warberg, L. (1997). Post mortem insemination in Norway - some legal aspects. European Journal of Health Law. 4, 197-198.
- Warberg, L. (1996). Biotechnology, law and ethics. The new Norwegian Act on medical use of bio-technology (Act no. 56 of 5 August 1994). European Journal of Health Law. 3, 189-195.
- Warren, A. (1998, December). A mouse in sheep's clothing: The challenge to the patent morality criterion posed by 'Dolly'. European Intellectual Property Review. 20 (12), 445-452.
- World Economic and Social Survey 1999, Trends and Policies in the World Economy. (1999). New York: United Nations.
- Yakovlevitch, I. (1996). Bioethics and New Reproductive Technologies in Russia. In D. Evans (Ed.), Creating the Child, The Ethics, Law and Practice of Assisted Procreation (pp. 267-277). The Hague: Martinus Nijhoff Publishers.
- Young, A.H. (1998, Spring). New reproductive technologies in Canada and the United States: Same problems, different discourses. Temple International and Comparative Law Journal. 12 (1), 43-85.
- Young, A.H. & A. Wasunna. (1998). Wrestling with the limits of law: Regulating new reproductive technologies. Health Law Journal. 6, 239-277.
- Zuzowski, R. (2000, January). Are the Czechs Prague-matic? East European Quarterly. 33 (4), 475-489.