

A Spiritual Appeal To Environmental Behaviour: Addressing Global Problems Of Population Growth And Consumption

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Masters in Environmental Science
A thesis in collaboration between LUMES and
Lund University Department of Theology and Religious Studies
Lund University, Sweden.
December 1999

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ACKNOWLEDGEMENTS

I express my gratitude to the sponsoring companies of The Swedish Malaysian Scholarship Fund (SMSF), Bofors, Ericsson Telecommunications, Perwira Ericsson, Celsius Tech., Armitage Shanks, Johnson Fluid, Johnson Medical, Skanska, Volvo and Atlas Copco for financing my study period in Sweden. I also thank The Swedish Embassy in Malaysia and Ms. Karin Dif of Svenska Institutet, Stockholm (coordinators of the SMSF), for facilitating my trip to Sweden.

I also express my heartfelt gratitude to my supervisors, from Lund University's Department of Theology, Associate Professor Rune Larsson and Assistant Professor Jan Hermanson for their support and guidance throughout the course of my research. Many thanks to all respondents in my study for their time and the extra help they rendered to me. My gratitude to Prof. Nancy McCagney, Dr. Willett Kempton and Dr. Eric Hoffman, from the University of Delaware, USA for their help and discussions at the early stages of my thesis proposal. Thanks to Professor Jan Hjärpe, Ms. Pernilla Ouis (PhD student), Associate Professor Olle Qvarnströms, Ms. Sidsel Hansson (PhD student), Dr. Anne Sofie Roald, Ms. Astrid Kander (PhD student), Dr. Lars Hagmar, Dr. Michael Nielsen, Dr. Jeffrey Hadden and Dr. Ola Johannesson for their help along the way. I thank Dr. Toon van Eijk for sharing with me his thoughts on religion and spirituality and sending me his book.

I am greatly indebted to all faculty members of Lund University Masters in Environmental Science Programme, for their support and the invaluable knowledge they have passed on to me and my fellow classmates over the year. Special thanks to Ms. Åsa Grunning who was there in times of need. Many thanks to all my class mates who have helped me a long the way in one way or another.

Special thanks to my good friend Dr. Eva Svederberg, who has helped me in many ways since the day I arrived in Sweden. She was the first person I had a discussion with when I had the idea to write this thesis. In fact, it was she who suggested that priests should spread environmental awareness. Thanks to my friend Anders Alm for sharing with me his ideas and providing me with some materials I needed to write my thesis proposal. My heartfelt thanks to Mr. Stephen L. Mott for reading and correcting my thesis. I thank my family for their support and encouragement, across the miles. I specially thank my brother, Mr. Sanath Kumaran for sending me useful materials and information. Last but not least, I thank God for making all this possible.

ABSTRACT

Excessive consumption and population growth are regarded as major world problems resulting in numerous consequent problems. A possible solution strategy that could bring about the required pro-environmental behaviours, through a spiritual appeal to reduce consumption and population growth is proposed. Pro-environmental teachings in four world religions, Christianity, Buddhism, Hinduism and Islam were identified. Personal interviews were carried out to find out if clergies and religious teachers were willing to encourage the required behavioural changes. Results indicate that the four religions offer many useful environmental teachings that can serve to give a spiritual appeal to the required behaviours, and that signs of willingness among clergies and religious teachers exist. Further research is necessary to determine exactly the feasibility of the proposed strategy. It is concluded that it is important to incorporate religion and spirituality to accomplish a wholesome multidimensional approach in addressing such global problems.

Keywords: *population growth, consumption, religion, spirituality, environmental behaviour*

INTRODUCTION

Problem Identification

Excessive consumption and population growth may be regarded as major problems of the world today. Consumption leads to a long list of consequent problems, and this includes environmental, social, cultural, moral, ethical and perhaps even spiritual and religious problems. One may regard human consumption to be the root of many problems, accelerated and worsened by a growth in the number of humans. Over population may cause consequent social problems such as disease, poverty, famine, inequality, political instability and increased consumption. Population also becomes an environmental problem due to limitations of resources and the planet's ecological carrying capacity. Admittedly, there are other factors that contribute to such problems, but it would be hard to deny that population and consumption are major contributors. A conceptual picture of the identified problems, effecting factors and the proposed solution is represented in Figure 1 using a 'causal-loop' method given by Roberts *et al.* (1983, p.11-56).

The variety of problems associated with consumption is enormous. Anything surrounding humans today seems to be linked with some form of consumption; from basic needs of food and clothing, to entertainment, sports, travel, and endless lavishness. Human consumption begins from day one of birth and perhaps ends in an extravagant funeral ceremony. Even religious celebrations such as Christmas, or end of Ramadan is turned into festivals of consumption, and this to me implies a sign of a religious problem. Human consumption patterns have also resulted in the social problem of 'extreme inequality' in the world. In one part of the world people indulge in extreme levels of lavishness, while in another part the tally on number of deaths by starvation increases daily. This makes consumption not only a social problem, but also an ethical problem. Such problems of inequality are visible even within a country. Rayan (1990, p.23), regards greed, competition and consumerism as spiritual and moral problems. It is dehumanising "when greed, competition and consumerism are held up and sold successfully as the highest ideal human beings can aspire to" (*ibid.*). A characteristic of this problem is a lack of foresight that drives us to go for immediate gain, consuming

irreplaceable resources without giving much thought to the long-term effects of such actions, for the earth and future living beings (*ibid.*). The environmental consequences of accelerating consumption have been noted to be very high. Major environmental problems such as loss of biological diversity, global warming, water shortage, excessive waste and terrestrial and atmospheric pollution may be directly, or indirectly attributed to human consumption. The consumer society's unwary exploitation of resources threatens to exhaust, pollute, or irreparably deform forests, soils, water and air (Durning, 1994, p.43). Therefore, all members of the consumer society have their share of responsibility towards the various global problems that the human species is faced with today (*ibid.*).

I would like to stress from the very beginning of my thesis that in the debate of population it is important to recognise its connection with consumption, and to recognise both as global problems, and hence the need to reduce both. There is a contemporary tendency to generalise that consumption is a major problem in Developed Countries (DCs), whereas population growth is a problem mainly in Less Developed Countries (LDCs). Increase in consumption is a problem on its own, as this may increase even without increase in population. Therefore, a country with low population growth but high consumption can be as destructive to the environment as a country with high population growth. On the other hand, a country with a high population growth but low consumption does not necessarily mean a sustainable natural environment. The poor will be forced to turn to whatever resources are available for their subsistence. What alarms me most, is signs that the LDCs today are aiming for higher standards of living similar to DCs. In some of these LDCs, one may observe that the younger generations tend to discard traditional lifestyles, adopting instead the ostentatious lifestyle promoted by media and advertisements. This indicates to me an arising cultural problem in these countries. In view of these points I regard consumption as a global problem. I assert that both over population and over consumption are responsible for the destruction of earth's natural environment. This perhaps is in accordance to the need for a reduction of "Total Consumption," that Daly (1996, p.14) speaks of in his comments on one of the United State's principles of sustainable development; "Population must be stabilised at a level consistent with the capacity of the earth to support its inhabitants." Daly, asserts that what really needs stabilisation is "Total Consumption," that is, total population times consumption per person. Therefore, both these factors need to be reduced (*ibid.*). Durning (1994, p.44), regards consumption as "the neglected variable in the global environmental equation." I am in agreement with Durning's view that those concerned about the well-being of the planet do not pay as much attention to human consumption as they do to other contributors of environmental decline (*ibid.*). In my view the so called "other contributors" to environmental decline are indirectly related in one way or another to human consumption and demands. Often we fail to see this indirect relation. For example, if our focus is on the type and degree of pollution emitted in relation to the type of technology used in cars, we will tend to neglect the fact that it is the increasing demand for cars that is enhancing the pollution in the first place. The usual solution is then to invest in less polluting technology instead of attempts to reduce the demand for cars. The way I view it, an ideal solution should include both. While some focus on improving technology, others should attempt to reduce demand through every possible way, a religious appeal being one of them.

Due to its enormity I see a need to address the global consumption and population problems from every possible angle, and this includes incorporating a spiritual appeal to bring about the necessary behavioural changes. Increase in consumption combined with an increase in human population, may be so destructive to the natural environment, (which is essentially our life support system) that we have reasons to doubt the very continuity of human species' existence. The consequent problems are often interlinked and reinforce one another (Figure 1). For example, the environmental problem of water shortage may cause the social problem of disease outbreak. The social problem of extreme poverty may result in the environmental

problem of natural resource depletion. Therefore, I stress again, that to ensure a sustainable planet both population growth and consumption needs to be reduced.

It appears to me that the irony of the whole situation is that, unlike our ancestors, today we are fully aware of the limits of our planet's carrying capacity, yet we are unable to modify our behaviour. Often we find that even the most pious environmentalists are guilty of environmentally wasteful behaviours. I am not able to exclude myself as being free from this guilt. My opinion is that, being humans, we tend to prioritise comfort and convenience; and we easily give in to our desires. There seems to be an incentive lacking. Perhaps an ecocatastrophe will be a reason forceful enough to bring about change; I would rather hope that what is missing is a spiritual incentive. The main proposal in my thesis is therefore integrating a spiritual appeal in efforts to encourage the required pro-environmental behaviours of reducing one's consumption and limiting the number of children one has (Figure 1). To a certain extent, awareness of the problems, acknowledgement of its relation with religious teachings and the openness to the idea of flexibility and adaptability of religion, among clergies and religious teachers will determine their willingness to encourage environmental behavior, with a spiritual appeal. When the positive results of environmental behavior encouraged through religion and spirituality is witnessed this may further enhance the willingness of clergies to spread environmental awareness.

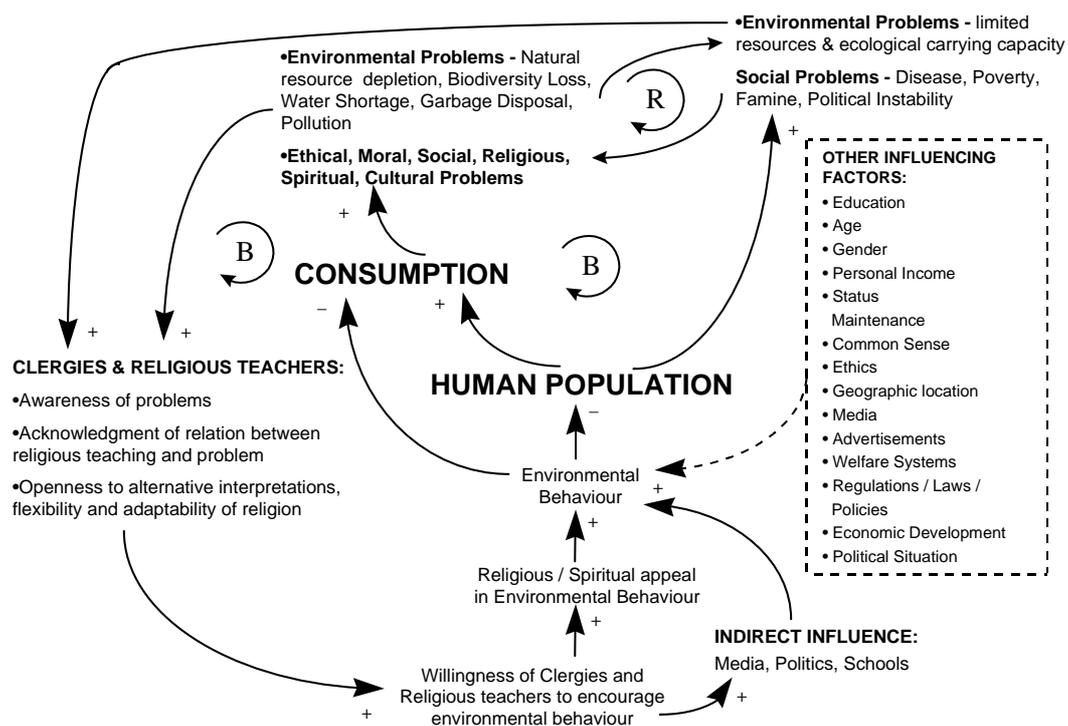


Figure 1: Reducing consumption and human population through a religious appeal to environmental behaviour. (Explanation of symbols is given by Roberts et al. (1983, p.56). I have given a summarised explanation in my notes¹).

Aims And Rationales Of The Study

The main aim of my thesis is to propose a possible solution strategy that could bring about the required pro-environmental behaviours to reduce consumption and population growth. Four major world religions, that is, Hinduism, Buddhism, Islam and Christianity (encompassing Catholicism and Protestantism) are analysed. I highlight the pro-environmental teachings in these religions that can serve to give a spiritual appeal to environmental behaviour, and aim to find out if clergies and religious teachers are willing to encourage the required behavioural changes. I have noticed that, although the need for a multidimensional approach in addressing environmental problems is generally acknowledged among environmentalists, non-governmental organisations and governments, the possibility of including a spiritual appeal in such efforts is somewhat neglected. I am not a specialist in either theology, sociology or behavioural sciences, but I believe that incorporating a spiritual appeal in such efforts will result in a wholesome solution strategy to population and consumption problems that the planet is faced with today. To ascertain if such a solution strategy can be accomplishable, the study aimed to find out,

- i. firstly, if clergies and religious teachers were aware of the environmental problem of population growth and consumerism,
- ii. secondly, if they acknowledge the relationship between religious teachings and such environmental problems,
- iii. thirdly, if they were open to the idea of flexibility and adaptability in religion and
- iv. finally, if they were willing to encourage the required pro-environmental behaviour.

The study neither intends to determine the best religion, point out what is right or wrong within the religions nor make any comparisons between the religions. The study mainly points out the views of each religion and the main beliefs that supports or defy the objectives to reduce consumption and population growth.

My first rationale for this study is that, environmental movements based on religion or spirituality will be especially suited to countries that are religiously or spiritually inclined. Although trends towards secularism is gaining prominence as the world moves towards modernisation, I point out that there are still many countries that choose to maintain their religious identity. For example, in Malaysia, where the official religion is Islam, Sebaly (1993, p.51), notes that there is a widespread pressure to impose Islamic religious beliefs in politics. The Islamic states, Saudi Arabia, Pakistan, Iran, Malaysia and Mauritania have specified that their normative system will be based firmly on religious teachings, on the presumption that this will help their people maintain their identity in rapidly changing times (Shamsavary, 1993, p.152). In India, there is a common occurrence of religious violence over political and educational issues (Sebaly, 1993, p.50). Spain, Ireland and Poland, the chief supporters of Catholicism in Europe, are referred to as “centres of religion by faith,” where religion is associated with a “strong emotional dimension” (Domènech *et al.* 1993, p.84-86). In Poland and Spain, Catholicism is recognised as the official religion, and regarded as an indicator of the nation’s cultural identity and independence (*ibid.*). Obviously, religion and spirituality play an important role in peoples lives in these countries; and hence will have some influence on their decisions concerning consumption and reproduction. As stated in the Encyclopedia of Applied Ethics, “Religion has had, and continues to have a significant influence on common morals, and when a society takes legal moralism seriously, religion has an acute influence on the content of morals that states are thought to have an obligation to enforce” (Callahan, 1998, p.336). This aspect alone gives a strong rationale for incorporating a spiritual appeal in attempts to induce environmental behaviour. My second rationale is that, since past evidences indicate that religious beliefs have had some form of influence in our behaviour, its influence, be it positive or negative, should not be ignored in environmental efforts. My third rationale is based on the reasoning that environmental behaviour may

become more appealing to an individual when there is an awareness of the religious meaning or spiritual significance of such behaviour. Therefore, an individual may be inclined to behave in an environmentally friendly manner, even if such behaviour does not bring any direct visible benefit. Yet another rationale is that, to achieve planetary sustainability, efforts need to be based on something that is permanent and endures change; two tendencies of religion. Unlike other strategies, religion is not easily removed, or influenced by change in political or economical situations. Since time immemorial, religion has offered guidance that has formed human thought, behaviour and culture, and it is likely that religion will continue to do so for centuries to come.

Assumptions And Limitations

My main assumption about population growth is that, there actually is a population growth problem. There may be oppositions that deny the existence of this problem. For example, Simon (1990, p.45-48), argues that the world has ample natural resources, and that increased number of people contributes to increased knowledge and technical progress hence improving productivity and standard of living (*cited in* Warwick, 1995, p.1958). I have excluded such debates from my thesis. I clarify to the reader, that my intent is mainly to analyse the possibilities of a solution strategy and not at all to prove the existence of a population problem. I base my assumption on the arguments and reasoning that a population problem exists, given by Brown et al. (1998; p.174-177), Cohen, (1995, p.161-398), Brown & Kane (1994), Meadows *et al.* (1992, p.23-103) and World Commission on Environment and Development (1987, p.95-117), and projections made by the Population Division of the United Nations. The current world population is 6 billion, and it is predicted that the number will increase to 8.9 billion by year 2050 (United Nations Population Fund, 1999a).

I acknowledge that there are numerous successful improvements in technology and energy use efficiency in food and material goods production, hence theoretically increasing earth's human carrying capacity. However, including these aspects will require another study in itself. I limit my study on the assumption that even if the most efficient technology is successfully implemented throughout the world, there will still be limits to earth's carrying capacity, in the ecological sense, if consumption and demand grow infinitely with increase in the number of people. Besides this, efficient technology and energy use may even indirectly enhance the problem of consumption. For example, when energy is readily available, humans will naturally invest time in inventing new products and services, hence creating new demands. Therefore, the need to reduce consumption and population still stands although there is reason to believe that technology will solve part of the problem.

Another main assumption is the existence of a relationship between religious beliefs and environmental behaviour. My assumptions are based on previous writings and research done that acknowledges the existence of such a relationship. Perhaps this began with the repeatedly quoted essay, '*Historical Roots of our Ecological Crisis*' by Lynn White. "Human ecology is deeply conditioned by beliefs about our nature and destiny -- that is, by religion" (White, 1967, 1205). White also stresses that one's daily habits and behaviour are governed by an underlying belief in constant progress, which is rooted in the Judeo-Christian philosophy (*ibid.*). Eckberg & Blocker (1989, p.509), in an empirical research testing Lynn White's theory, confirmed that belief in the bible had influence on people's environmental concern. Guth *et al.* (1993, p.373-382), analysing the impact of theological orientations on attitudes of religious activists toward the environment, report a significant connection between theological perspectives and environmental attitudes. Greeley (1993, p.19-28), notes that a rigid religious orientation generally correlates with a lack of environmental concern. Kanagy & Willits (1993, p. 647-683), in their analysis reported the existence of some relationship between religion and environmental attitudes and behaviour. Woodrum & Davison (1996, p.90), reviewing previous claims that traditional theology and religious institutions bring out

negative environmental effects, note that these studies suggest that one's view of God may have consequential effects on environmental behaviour. Although these studies are mainly based on Christianity, it is evident that the link between religious beliefs and environmental behaviour exists.

I acknowledge that there are numerous other factors that influences an individual's environmental behaviour relating to population growth and consumption as shown in (Figure 1). Although it may appear that these other factors play a bigger role in some ways, viewing the problem from a global perspective, the influence of religion cannot be ignored. The degree of influence by other factors is not discussed in my study. It is acknowledged that the consequent problems associated with consumption and population are numerous and multidimensional; however, the main focus will be on environmental problems.

The diversity of religious bodies, orders and denominations within each religion is enormous. Supporting my discussions with literature and views of respondents from each group was beyond the scope of my study. In some cases, the respondents and literature are not of the same religious body, order or denomination. The short time period of the research also limited the number of interviews conducted. Due to these factors, I note that the results of my study only tentatively represents the religions. Due to the variety of denominations in Christianity, it was not possible to give a complete set of views that would represent the whole of Christianity. Buddhism and Hinduism do not have a specific authority figure, or a standard doctrine and hence lacks any official views. Buddhism may be categorised into many parts, either by chronology, by school or by country (Reynolds & Hallisey, 1987, p.335-336). According to Wylie (1987, p.200), the incarnation of the Buddha in human form is an ancient belief that is common in various schools of Mahayana Buddhism, while the concept of the reincarnation of a lama is unique to Tibetan Buddhism. I acknowledge that there may be varying views within Buddhism. However, I noted mostly the words of the present Dalai Lama as representing Buddhism in my thesis because of his global recognition, which is perhaps due to his extensive international travels. Hinduism has numerous sacred literature and countless forms of worship and sects. Hindu beliefs can be based on monotheism, polytheism, pantheism, or even atheism (Dhavamony, 1995, p.427). My notes on Hinduism were mostly derived from writings of scholars in the subject.

Materials And Method

Personal interviews were used to collect data on the views of clergies and religious teachers regarding population growth and consumption, and their willingness to encourage the required pro-environmental behaviours. All respondents are engaged as priests, ministers or spiritual teachers either on a full time, or part time basis. A structured interviewing technique, as described by Taylor & Bogdan (1984, p.77) was used. The questions are structured in the sense that they are pre-determined and in a standardised format; aiming to give answers to the prior mentioned four general questions that the study aimed to answer. Informants were, however, left to answer open ended questions in their own words, therefore, the interview was qualitative in a sense. Identical questions was used to ensure comparability of findings. The interview was centred around a problem, and therefore has similarities to the problem centred interview described by Flick (1998, p.88-91). The questions in this type of interview is focused on the respondents view of the problem (*ibid.*). In situations where the respondent did not understand the question, or gave irrelevant answers, the questions were either asked again in a different manner, or specific examples were given to obtain the relevant answers. Often, the standard interview was followed by a free-floating discussion, where I had taken the opportunity to ask for opinions on specific issues relating to the respective religions. Perhaps a better term for the type of method I used is 'a problem based, structured, qualitative interviewing.' The interview questions are enclosed in the Appendix. Two interviews was

carried out for each religion. In cases where views were contradictory between the two, a third interview was carried out. All interviews were tape recorded and transcribed verbatim.

A literature analysis was done on the four religions. The religious views identified in this paper were derived from official statements by religious authorities, views of religious leaders, and interpretations by scholars of theology, lecturers in theology and renowned authors in the field. I did not attempt to make my own interpretations of religious texts, although I have explicitly stated any opinions that I had on the subject. The data collected from the interviews was discussed in combination with information from literature. The possibility of including a religious appeal to encourage environmental behaviour in individuals, was mainly established from the identification of existing pro-environmental teachings in religion and the willingness of clergies and religious teachers to encourage the required behaviours. In light of this, the study attempted to conclude if this approach was feasible and can be made to be a significant part of a wholesome, multidimensional approach in addressing the global consumption and populations problems.

Although the analysis was geographically focused in Sweden, it does not limit the findings to a Swedish perspective. Firstly, due to the fact that nine out of twelve of my respondents were non-native, and secondly, the fact that supporting literature represented various parts of the world. Besides this, the interview questions also referred to population growth and consumption as global problems. The findings therefore carry global implications and hence also global applications. The findings of my study may be applied to any societies where religious or spiritual practises are a norm, since it is possible for religious groups or organisations to identify what is pro-environment in their respective religion and apply it in the local context.

To avoid any misunderstandings that may arise due to definitions and terminology, I will clarify the terms 'birth control,' 'contraception,' 'consumption,' 'population growth,' 'over population,' 'carrying capacity,' 'religion' and 'spirituality' used in this paper.

Birth Control is categorised as a "Bioethic," and is defined as "the methodology of ethical population control by physical, surgical, and chemical methods excluding abortion" (Singer, 1994, p.335). A somewhat different definition is given by Callahan (1998, p.91). Birth control is regarded to be "any method used to prevent birth, including contraceptives, contragestive, and chemical or surgical abortion after implantation" (*ibid.*). Due to such differences, in the definition of the term 'birth control,' it is important that I clarify to the reader that I propose only voluntary birth control using methods that are preventive. I do not include abortion or involuntary surgical sterilisation in my definition of 'birth control' or 'contraception' in this paper. I acknowledge some of the ethical issues surrounding the use of various types of birth control methods, its testing and health effects. Perhaps to some extent, I will be overlooking these ethical issues in my attempt to promote the environmental ethic of limiting population growth. I do not discuss these issues as I feel it would be better addressed by experts in the field.

The term 'consumption' used throughout the paper refers to the various types of consumption, such as material goods, food, services, energy; including renewable and non-renewable resources. This is based on the assumption that these forms of consumption are directly or indirectly linked to depletion of natural resources and damage of earth's life support systems. Even when a resource is apparently renewable, for example agricultural products, there are still many underlying environmental effects, such as the effects from fertiliser use, ecological effects of mass monoculture, soil erosion and nutrient depletion.

I define 'population growth' simply as the numerical increase in the number of human beings. Population growth patterns vary between countries. Often, it is projections or trends of

exponential growth patterns that indicate a doubling of population after a certain number of years that is alarming. 'Over population' is when the number of human beings in a given area challenges the limits of the area's natural carrying capacity. Cohen (1995, p.401-418), notes the various published estimates of the maximum number of people that the world can support, dating from as early as 1679. It is unlikely that there will ever be a universally agreed definition of 'carrying capacity' due to the constant change in natural conditions, technology, consumption and distribution patterns (United Nations Population Fund, 1999b). Predictions of human carrying capacity by scientists range broadly from four to six billion people (*ibid.*). Cohen (1995, p.419-425), notes twenty-six verbal definitions given for the term "human carrying capacity." In the context of my paper, I mainly refer to 'carrying capacity' in the ecological sense, that is, the natural limits of food, water, land and other resources, and the well being of the natural life support systems that regenerate, balance and cleanse the environment, in relation to the number of people the planet has to support.

I am in agreement with Dhavamony (1995, p.819), that people have varying ideas of what 'religion' is. It can mean a belief in God, the act of praying, participating in a ritual, meditating, the emotional attitude to something transcendental or just morality (*ibid.*). Dhavamony notes that a scientific study of religion should begin "with a certain idea of religion, which leads to distinctions between what is religious, and what is not religious," to attain a research result that is more precise and critically acceptable (*ibid.*). In contrary to this, my view is that an attempt to distinguish that which is religious from the rest of humanity or from the rest of existence, would be something that is not only almost impossible but also disrespectful to those who believe that the very experiences in life as a religion in itself. Therefore, I regard the term 'religion' as something that is indefinable. The term 'religion' in my thesis literally refers to Christianity, Buddhism, Hinduism and Islam, and the term 'religious appeal' refers to the essence in a religion that can be appealing to an individual. Although I acknowledge that some have distinguished the meaning of spirituality from religion, in my thesis 'religious appeal' carries the same meaning as 'spiritual appeal.' I define 'religious appeal' and 'spiritual appeal' as, something that appeals to the human conscience.

RESULTS AND COMMENTS

Overall Observations

All religions in my study encourage procreation, except perhaps for Buddhism; however, it is not the quantity of people that religion encourages, but rather the qualities associated with parenthood. Gross (1998, p.114) asserts that very few religions encourage limiting population growth. According to Gross, most religions encourage or require their followers to reproduce, without giving any guidelines about limits to reproduction or any contemplation that there could be an over population of the world. My findings are somewhat contrary to Gross's statement as the reader will find out in later sections of my paper. The religions in my study do not encourage the begetting of more children than one can afford. All respondents in my study expressed some awareness of issues surrounding the population problem, although in a few occasions some of them admitted that it was not something that they thought about, while one was of opinion that the problem does not exist. Eight did not regard the population number itself as a problem, but instead regarded other factors such as unequal distribution of world's resources, misuse of resources and excessive consumption as the actual problems. Eight denied completely the possibility of religious beliefs contributing to the population problem. The four that acknowledged this possibility, were of opinion that this could have been due to a misunderstanding of religious teachings. Nine were open to the idea that religious views surrounding the birth control issue need to be reviewed, and regarded the religion they represented to be flexible and adaptable to changing situations. Nine were willing to encourage birth prevention for environmental reasons. Although two disapproved the use of artificial contraceptive methods as means of population control, they were willing to encourage other means such as abstinence, meditation, natural methods, delaying marriage, and moral education.

All four religions advocate simple lifestyles, and discourage excessive consumption. In response to questions on consumption behaviour, all respondents in my study asserted that people consumed more than they needed, but only eleven saw this as a problem. All of them unanimously agreed that the lack of spirituality is a reason for excessive consumption in the contemporary world. Eleven were willing to encourage the environmental behaviour of reducing consumption, and ten felt that the religion they represented had a great role to play in solving this problem. One respondent expressed a pessimistic view that it was impossible to change people's behaviour today since religion is no longer important to most people.

Although it is not my objective to make a comparative study of religions, I will follow with separate discussions for each religion to facilitate specific discussions for each. Due to substantial differences between Catholicism and Protestantism surrounding the population issue, I follow with separate discussions for the two. These discussions will then be followed by a more general conclusion of my findings.

CHRISTIANITY

Catholic View Of Population Control

The most widely publicised example of religion as a hindrance in attempts to control population growth is the Catholic Church's condemnation of the use of contraception, rendering Catholicism as problematic in the eyes of those who are environmentally concerned. Pope Paul VI's statement in the *Humanae Vitae*, "The Church, in urging men to the observance of the precepts of the natural law, which it interprets by its constant doctrine, teaches that each and every marital act must of necessity retain its intrinsic relationship to the procreation of human life" is still adhered to (Paul VI, 1968, p.226). The Catholic Church is against the use of contraception because it is considered to be against nature. Since the

conjugal act is designed for the generation of children, use of contraception is said to deliberately deprive it of its natural power and capacity (Arraj, 1989, p.9).

Many documents indicate that the Church has hindered efforts to control population. The Church has prevented many South American Governments from establishing national family planning programmes (Hartmann, 1987, p.50). For example, it prevented the Peruvian Government from implementing its 1977 Population Policy, that intended to establish voluntary family planning services, and also pressured the government to abolish voluntary surgical sterilisation as a birth control method (*ibid.*). More recently, the Roman Catholic Church in Argentina, Ireland and Colombia removed references to family planning and contraceptives from the chapter on population in Agenda 21 (Cohen, 1995, p.290).

Although representatives of Catholicism may be aware of problems associated with population growth, their concern for the environment may be blurred by a focus on the issue of inequality in the world and beliefs in the goodness of procreation. Section 37 of *Populorum Progressio* clearly acknowledges the existence of a population problem: "There is no denying that the accelerated rate of population growth brings many added difficulties to the problems of development where the size of the population grows more rapidly than the quantity of available resources to such a degree that things seem to have reached an impasse. In such circumstances people are inclined to apply drastic remedies to reduce the birth rate" (Paul VI, 1967). Two respondents expressed clear awareness of the population problem. However, all three respondents regarded unjust distribution of world's resources as the 'real' problem. One response was, "it is a very selfish viewpoint to say that we will be better off when there are fewer of us. It is how we live together that is important, and if we are able to live together more justly." This respondent also felt that "a total liberation of immigration" will contribute greatly in solving population problems. One respondent regarded earth's limited human carrying capacity as a major crisis, while another brought up the issue of increased efficiency in resource use, and felt that the notion of a "limited carrying capacity" was arguable. My third respondent spoke of resources yet to be discovered.

Signs of adaptability and the acknowledgement of a need to review scriptures in Catholicism is ambivalent. Two respondents disagreed that religious beliefs have caused population problems. One acknowledged the possibility that a misunderstanding of the command in Genesis 1.28², "Be fruitful and multiply...," has caused population increase. However, he felt that it is unlikely that *Humanae Vitae* has caused population problems on a global scale. He gave an example that birth rates were low in Rome, where most people were Catholics, and this according to his view could be because Catholics themselves do not take the birth control ban seriously. All three respondents acknowledged the 'goodness of procreation' in Catholicism. However, two pointed out that the Church does not encourage unrestrained reproduction. One respondent stated that, "the message of the bible is not that we have as many children as possible, instead it speaks of responsible parenthood," while another emphasised that it was not the numeric value of life that was encouraged, but instead it was the qualitative value of life. Both of them clarified that this means that parents were encouraged to have only the number of children that they can afford and provide for. On the contrary, my third respondent was of opinion that a population problem does not exist, and affirmed that he was against population control. Although he mentioned that we should be "... open to life," in another occasion he mentions natural family planning as the only way that is accepted by the church. I had noticed some differences of opinion with regards to flexibility and adaptability of religion among the respondents in my study. One respondent felt that it was necessary to review religious beliefs surrounding the issue. He called it "conversion," which means "to go back to the original message of the Gospels, and to review them in another light." He also explicitly expressed his disagreement towards the Church's standpoint on the issue of contraception use. He felt that it was not for the Church to determine the right method of population control, since this depends on various factors, such as culture and level

of education. On the contrary, another respondent states that "... we are not allowed to twist and turn divine teachings so that it will adapt to changing circumstances," while my third respondent was of opinion that one cannot expect the Church to change its stance just because some have the notion that there are too many people.

There have been numerous criticisms and arguments with regard to the Church's birth control ban, and it is likely that this debate will continue. If the main reasoning for the Catholic disapproval of artificial contraception is because it is against the laws of nature, it can be easily debated that contrary to this, Catholics have accepted various artificial products that we use in our daily lives; hence the question why not contraception for the benefit of humankind? To this argument, one respondent clarified that the actual reason for the Catholic disapproval of artificial contraception is because "it severs the link between sexuality and reproduction." He further adds, "sexuality is not only for enjoyment. It must include other dimensions such as the dimensions of generosity, of donation, of altruism and of love, through the acceptance of children." Arraj (1989, p.16-105), gives the various debates on this issue since the publication of *Humanae Vitae*. Brown (1969, p.193-215), giving a review of the *Humanae Vitae* from a Protestant perspective, asserts that since the encyclical is based on natural law and reason, and not on divine revelation, the arguments of the encyclical are debatable when it concerns the meaning of sexuality, matrimony, population control, and welfare of future generations. Pointing out the possible consequences of the encyclical, Brown states that Catholics in the "third world," especially those who are illiterate and unsophisticated, would tend to accept papal authority and feel bound by the encyclical (*ibid.*). As a result, they will not only have more children than they can support, but also contribute to population problems in areas that are most lacking in technological resources for development (*ibid.*). "The encyclical if enforced in the third world, can only leave a wake of personal and social tragedy, multiplying human misery, poverty, squalor, and despair" (*ibid.*). Brown also argues that increasing food production and technology are not sufficient answers to the population problem (*ibid.*). "Population increases are geometrical, and there is simply not time to 'perfect the rhythm method' and teach millions of unlettered persons all the subtleties of time-and-temperature charts" (*ibid.*). He concludes that the encyclical seems to be based on "an inadequate theology of sex, embroidered with a deficient sociology of modern man and a faulty psychology of marriage." Kaplan & Tong (1994, p.84), point out that the moral difference between natural methods of birth control and artificial methods is rather unclear. Kaplan & Tong (1994, p.84-85), cite the words of Novak (1969, p.94), a Roman Catholic commentator, who argues that in both cases, it is human intelligence that determines the applied process to prevent the fertilisation of the ovum, and therefore it is not justifiable that one method is considered sin, while the other is not. To this argument I can add that in both cases it is with the intent to not have children. Therefore, from this viewpoint, the Catholic's Church approval of natural birth control seems to be in opposition to its statement in *Humanae Vitae* that "every marital act must of necessity retain its intrinsic relationship to the procreation of human life."

Even within the Catholic Church there has been uncertainty surrounding the issue of contraception. One often quoted incident, was when Pope Paul VI was being interviewed by a journalist in 1966, he suddenly volunteered that he was unsure about what should be done about contraception (Kwitny, 1997, p.210). Mutiny exploded within the Church almost immediately after *Humanae Vitae* was published (Kwitny, 1997, p.219). 642 priests, theology professors, and prominent laymen in the United States signed a petition supporting the rights to contraception use; 5,000 Catholic laymen in West Germany declared that they could not accept Pope Paul's pronouncement; while bishops in France issued a statement that birth control will be left to the conscience of individuals (*ibid.*). Professor David Tracy at the Catholic University in Washington argues that the church had changed its stance in the past, therefore there was no reason why it could not do the same for birth control (Kwitny, 1997,

p.219). Professor Tracy gives examples of how the Church once tolerated slavery and taught that usury was intrinsically evil, but later changed its stance on these.

Although representatives of Catholicism may to some extent acknowledge the need to control population, the approved method of population control is indefinite. Two of my respondents were willing to encourage the pro-environmental behaviour of limiting the number of children that one has. One said he will promote only natural family planning, and he asserted that the problem could also be addressed through moral education, responsible sexual life and deferment of marriage. The other was open to artificial contraception methods, if there was a need for it under the circumstances, and provided that it does not endanger human health. However, he stated that the best solution would be “to awaken to deep spirituality.” My third respondent asserted that he will not encourage this behaviour at all.

The acknowledgement of a population problem in *Populorum Progressio* is followed by an acknowledgement of the rights of Governments to curb population growth by adopting appropriate measures, as long as this is done morally, while respecting the freedom and rights of married couples to have children (Paul VI, 1968). However, since the *Humanae Vitae* clearly approves only natural methods of family planning, governments will then be limited to promoting only this method if they were to adopt the moral standards of the methods that *Populorum Progressio* speaks of. This would then make population control a difficult task, as the practicality of natural methods is still questionable. For example, maintaining menstrual calendars and keeping track of body temperature to determine the right time of the month, definitely is far more difficult for an illiterate person to understand and practice, compared to the use of a condom. From this viewpoint, one can say that this particular religious belief may prove to be a hindrance in efforts to promote birth control. Hehir (1995, p.1987-1988) points out that since Catholicism recognises the distinctions between public and private morality, and between civil and moral law, this may result in a more flexible interpretation of the encyclicals. This could be done, by emphasising the rights of governments to carry out population control programmes stated in *Populorum Progressio*, and rendering the *Humanae Vitae* argument as applicable only to questions of individual morality, and not as suitable for determining population policy (*ibid.*).

In summary, I note that at this point, a Catholic religious appeal in encouraging the environmental behaviour of limiting the number of children that one has, is likely to be mainly based on the emphasis of responsible parenthood through natural family planning, moral education, responsible sexual life and deferment of marriage. It is important to note that although Catholic clergies may tend to oppose the use of artificial birth control, this does not necessarily mean that they are unwilling to partake in efforts to keep population growth under control. The potentials of their contribution should not go unacknowledged.

Protestant View Of Population Control

Protestantism tends to have a positive view towards the use of contraceptives for the purpose of population control, although some disagreements still persist. Wogaman (1995, p.1994-1995), notes that due to the hundreds of Christian movements, denominations and sects that comprise Protestantism, it is difficult to generalise the Protestant view on the issue. One respondent confirmed that differences in views still existed even within the same church. Wogaman (1995, p.1995), giving a Protestant perspective on ethics relating to population control based on mainstream churches that have taken an explicit position on population issues, notes that early Protestant view was against population control. Protestant approval of family planning began only in the early twentieth century (*ibid.*). Noonan (1986, p.125) notes that a declaration was made in 1930 by the Lambeth Council of Worldwide Anglicanism, which stated that the use of contraceptives could be justified if there is a clear moral obligation to limit or avoid reproduction (*cited in Wogaman, 1995, p.1995*). A strong

consensus formed among mainline denominations in support of that position in the following thirty years (Wogaman,1995, p.1995).

Respondents in my study and previous documentation indicate much awareness of issues surrounding population problems. In response to the question of earth's limited human carrying capacity, one respondent expressing his concern, states that it was not just a problem of the future, but one that needs immediate rectification. "It is a terrifying scenario that there is a limit to how many people that we can be here," he says. My second respondent expressed similar concerns and said that although we don't seem to be very large in number now, we may be so in the future. She was of the opinion that this may result in a shortage of food supply and other resources. She also felt that the environmental problems that we are witnessing now has some relation to the biblical warning that "the ground will be cursed and all of creation will suffer because of the first human's sin." She later confirmed that this is stated in Genesis 1, Chapter 3, Verse 17-19. From his sampling on denominational statements on population issues, Wogaman (1995, p.1997-1998) concludes that from the 1960s onwards the churches indicated a continued commitment to family planning, and rights to contraceptive access. In its official statement on population ethics in 1992, the United Methodist Church took into account factors such as food, water and mineral shortages caused by growing populations (*ibid.*). "People have the duty to consider the impact on the total world community of their decisions regarding childbearing, and should have access to information and appropriate means to limit their fertility, including voluntary sterilisation" (United Methodist Church, 1992, p.40, *cited in* Wogaman,1995, p.1996). The Presbyterian Church, another mainline denomination in the U.S.A., argued in favour of family planning and population limitations as early as 1965 (Wogaman,1995, p.1997). In 1971, this church made official statements, that dependence on voluntary birth control based on 'individual desires and private decision,' will not be effective in bringing about the required reduction in population growth, if not accompanied with a 'radical and rapid change in the attitudes and desires' (*ibid.*). This statement affirms that giving birth to as many children as we desire can no longer be justified (*ibid.*). In 1984, the Presbyterian Church again voiced its concern over accelerated world population growth, and the possible consequences of limited resources and unmet population needs (*ibid.*). The Unitarian Universalist Association, another mainline denomination, supports family planning as a response to over population frequently being associated with pollution of water, air and soil, ozone depletion and exhaustion of non-renewable resources (*ibid.*). This denomination not only justifies full access to contraception, but also supports abortion rights (*ibid.*).

Protestantism may be regarded as adaptable to changing circumstances and problems. In response to the question on religious beliefs contributing to population problems, one respondent agreed that this may have been true in some places, while both were of opinion that this was mainly due to a misunderstanding of the command in Genesis 1.28², "Be fruitful, and multiply..." among Christians, who take it upon themselves that it is their individual responsibility to produce as many children as possible to fill the earth. Both respondents acknowledge that it was necessary to review scriptures. The Protestant church takes seriously the views of its members (Wogaman, 1995, p.1997). "When official statements are seriously inconsistent with the deeper convictions of members, mechanisms are usually present to enact change" (*ibid.*). Therefore, Protestant perspectives on "population policy and other issues can change without threat to the basic body of shared doctrine" (*ibid.*). Both respondents confirmed the adaptability of their denomination. One respondent explicitly stated, "the Protestant tradition in the Christian community has some kind of flexibility to meet questions that are important," while the other based her belief on the notion of a 'flexible God,' and that the message that scriptures convey today may not be the same as a hundred years ago.

Both respondents were willing to encourage birth control; however, one of them admitted that it was not something he had thought needs to be done for environmental reasons. Both

respondents were open to artificial contraceptive means; however, one of them expressed concern that encouraging contraceptive use may promote free sexual relations, especially among younger people who are not ready to have children.

Summarising the results of my interview and past documentation, I note that the Protestant acceptance of contraception, is based on the need to lower population growth rates, to maintain good living conditions and to live within natural limits. These aspects may be regarded as 'a religious appeal' to encourage birth prevention. Keeping in mind the adaptability of Protestantism to contemporary situations, and the willingness of my respondents to encourage the environmental behaviour of limiting the number of children that one has, I note a very high potential for contributions from Protestant clergies and religious teachers in addressing the world population problem.

Christian View of Consumption

The origins of the environmental crisis have often been linked to the Judeo-Christian exploitative approach to nature, based on interpretations made of Genesis 1:28² regarding mankind's "dominion" over nature; however, recent writings question this assumption. White (1967, p.1205), accused Judeo-Christianity for the environmental crisis. "Christianity... insisted that it is God's will that man exploit nature for his proper ends" (*ibid.*). Similarly, Toynbee (1972, p.141) blames the Christian church as being responsible for "the present environmental crisis," and claims that the theory of creation in the Bible, legitimised exploitation of the environment (*cited in* Woodrum & Davidson, 1996, p.77). However, what I have noticed that most authors have left unmentioned is that, in his essay, White also proposed an alternative Christian view. "More science and more technology are not going to get us out of the present ecologic crisis until we find a new religion, or rethink our old one" (White, 1967, p.1206). I take this to mean that White suggested the need to review religious scriptures and to formulate new interpretations. I note that the part in White's essay that accuses religion has received far more propaganda than his concluding remarks where he states, "Since the roots of our trouble are so largely religious, the remedy must also be essentially religious, whether we call it that or not" (White, p.1207). He also suggested Saint Francis's view of equality among all creatures, as an alternative Christian view of human relation to the environment (*ibid.*). Similarly, Toynbee (1972, p.141) also recommended a theological reorientation to rectify the problem (*cited in* Woodrum & Davidson, p.77). Recently, Harrison (1999, p.86-88) questioned past interpretations of the dominion theory based on Genesis 1:28² and gave different perspectives that point out that the roots of our environmental problems is indeed complex, and therefore cannot be attributed simply to the Christian doctrine of creation. Due to the generality of White's essay, it can neither be falsified or verified (Greeley, 1993, p.19). Since, 'to dominate' could mean 'to serve' in Hebrew, Rayan (1990, p.27) reasons that this may be taken to mean that man was therefore authorised 'to serve' the earth. This interpretation corresponds with Genesis 2, where man is appointed to care for the earth, cultivate it, and maintain its fruitfulness and beauty, to ensure a joyous home for all generations (*ibid.*).

All respondents expressed awareness of the consumption problem, and I found that both Catholic and Protestant clergies stressed that Christianity encouraged simple lifestyles, and therefore over consumption is viewed negatively. Pope John Paul II notes a direct link between consumerism and environmental problems. In his message for the World Day of Peace on 1st January 1990, the Pope debated that the environmental crisis is the direct result of sin, greed and the contemporary tendency to seek for immediate gratification through consumerism (Northcott, 1996, p.37). A few of my respondents mentioned capitalism and advertising as the cause of the creation of new material needs, and hence the cause of increased consumption. All my respondents brought up the issue of unequal distribution of resources as crucial. One respondent brought up the issue of shortage of water, and the possibility of wars over water supply.

The theory that Christianity has caused the environmental crisis is disputable; on the contrary, it is acknowledged that it is lack of spirituality that leads to excessive consumption. Due to the many contradicting views, I note that one can say there is neither a definitive 'yes' nor 'no,' as to whether Christianity was the cause of environmental destruction. Whether or not this might have been true in the past is of little concern to me. Perhaps it is time to stop blaming religion as the cause of the environmental crisis. Instead, it would be more beneficial for the Christian religion and for the well being of humanity and the environment to promote Christianity in a new way; highlighting instead its pro-environmental features.

There are signs of acknowledgement of the possibility of a misunderstanding of scriptures. In response to a question relating to the 'dominion theory',² one respondent said that this was a very central example of a misunderstanding, and that there was a need to review scriptures, and a need for "conversion." He then spoke of the humankind's role as God's steward; therefore, having the responsibility to care for the earth. Rayan (1990, p.25), speaks of how Christian thought and catechism became entirely anthropocentric. It is possible that the creed became misleading because of statements such as 'for us men' and 'for our salvation,' which brought about an exclusive focused notion of God's love for human beings (*ibid.*). Rayan further points out that in the New Testament, it is proclaimed that "God loved the world (Jn.3:16), that God in Christ was befriending the world to himself (II Cor.5:19), that the whole creation is to be freed from slavery to corruption and brought into the same glorious freedom as God's human children (Rom.8:21), and that everything in the heavens and everything on earth will be brought together under Christ as Head (Eph 1:10)" (*ibid.*). These proclamations have been overlooked and not thoroughly explored, with the result that its aim for universality was not given a chance to flourish (*ibid.*).

All five respondents representing Christianity were of similar opinion that lack of spirituality is one of the reasons for excessive consumption. One response was that "...most people in Western countries do not follow the simple living thought by the Gospels, and so they suffer from a lack of genuine spirituality." Another gave the opinion that "a more spiritual attitude towards resource use would contribute to the solution of this problem by encouraging less consumption, and better distribution of resources." However, one respondent did not regard this as a problem, although he too was of opinion that people generally consumed more than they needed. He believed that if some resources were to be exhausted, alternative resources will be found and that through human intelligence and efficient technology people will still be able to survive. Although I would like to think that this is purely the result of faith in God's divine providence, I need to highlight that such perceptions could also be due to lack of ecological knowledge. Another respondent clearly expressed that over consumption was a problem, but he was sceptical about the notion of 'earth's limited resources,' because of his belief in increase of efficient use of renewable resources. On the contrary, two other respondents felt that such limits exist, and perhaps these limits are lower than we assume if we continue with current rates of consumption.

Present commentaries of Christianity offer many pro-environmental teachings, express concern for future generations, and call out to 'spirituality' as a solution to consumerism. The pro-environmental behaviours suggested by my respondents include recycling, reusing, purchasing of ecological products, and generally limiting one's consumption. One respondent suggested that simple lifestyles can be promoted by Christians, by being an example themselves; so that, others may learn that it is possible to be happy even with a few belongings. Another respondent asserted that one's consumption can also be reduced through charity. Witten (1995, p.129-134), in her review of evangelical teachings, notes that money and possessions becomes a problem when they divert Christians from the proper spiritual attitudes that Christians are commanded to accomplish. Evangelical values recognise some risks that wealth entails, such as the tendency towards idolising money and possessions, haughtiness and greediness; resulting in lesser time dedicated to family and spiritual life

(*ibid.*). Since earthly possessions do not come of use in eternity, efforts to acquire earthly possessions are considered as misallocated “investments” of labour and time (*ibid.*). Evangelical values encourage a “limited lifestyle,” whereby one has a level of consumption that is sufficient for the sustenance of one’s self and family, keeping only the needed funds, and donating the rest (*ibid.*). The general principal of the “limited lifestyle” indicates an attempt to address the ethical problem of excessive consumption in affluent societies (*ibid.*). Other suggestions to contain consumption include delaying satisfaction by deferring purchases, managing with what one has by economising, restricting the use of one’s credit card, and cautiously recording money flow (*ibid.*).

Catholic views on Consumption are distinctly given by Pope John Paul II in his encyclical *Centesimus Annus*. In section 36 of the encyclical, he states that, “a given culture reveals its overall understanding of life through the choices it makes in production and consumption. It is here that the phenomenon of consumerism arises” (Paul II, 1991). Defining new needs and the means of meeting these needs should be done in a manner that prioritises interior and spiritual dimensions, above material and instinctive dimensions (*ibid.*). If a direct appeal is made to instincts instead while ignoring a person’s intelligence and freedom, the resulting consumer attitudes and life-styles will be one that is objectively improper, and often destructive to the physical and spiritual well-being (*ibid.*). Since an economic system does not have the necessary measures to distinguish between “new and higher forms of satisfying human needs” and “artificial new needs,” this indicates an urgent need for a great amount of education and social change. This includes the need to educate consumers to responsibly use their power of choice, the need to build a strong sense of responsibility among producers and representatives of mass media, and the necessary government intervention (*ibid.*). It is not the wish for a better life that is wrong, but rather the desire to have more only for the enjoyment of life as an end in itself (*ibid.*). The encyclical highlights the need to create a new lifestyle in which the search for “truth, beauty, goodness and communion with others for the sake of common growth are the factors that determine consumer choices, savings and investments” (*ibid.*). This to me is a clear sign of willingness to address the consumption problem through a spiritual appeal.

In Section 37 of the encyclical *Centesimus Annus*, consumerism is related to environmental problems. Driven by desire for enjoyment, people excessively consume the resources of the planet (Paul II, 1991). The reason for such thoughtless environmental destruction originates from a prevalent ‘anthropological error’ (*ibid.*). Humans, engrossed in their ability to transform and create their surroundings, have forgotten that the world itself was originally God’s gift (*ibid.*). It is further stated in the encyclical:

“Man thinks that he can make arbitrary use of the earth, subjecting it without restraint to his will, as though it did not have its own requisites and a prior God-given purpose, which man can indeed develop but must not betray. Instead of carrying out his role as a co-operator with God in the work of creation, man sets himself up in place of God, and thus ends up provoking a rebellion on the part of nature, which is more tyrannised, than governed by him” (Paul II, 1991).

The above statement, is a clear indication that Christianity disapproves excessive consumption and environmental destruction.

Section 37 of *Centesimus Annus* also stresses the need for awareness of the duties and obligations we have towards future generations (Paul II, 1991). Respondents in my study similarly highlighted this point. One response was, “... instead of complaining about the earth that we have inherited from our parents, we should regard the earth as something that we are borrowing from our children.” This can be taken to mean that we need to reduce consumption not only for the well being of our environment today, but also the environment that we will hand over to future generations. This is the very basis of the principle of sustainable

development that is often stressed in environmentalism. To my puzzlement, one of my respondents had an opposing view that we need not think of the future. In response to a question on the need to reduce consumption in order to save resources for future generations, he says, "... it is not a law for the Communion to think of tomorrow. We must live only today, in communion and in love with each other. We can't think of tomorrow."

Section 23 of *Populorum Progressio* addresses issues surrounding the use of private property speak of the responsibility of the rich towards the poor (Paul VI, 1967). "He who has the goods of this world and sees his brother in need and closes his heart to him, how does the love of God abide in him?" (*ibid.*). Quoting the words of St. Ambrose, "You are not making a gift of what is yours to the poor man, but you are giving him back what is his. You have been appropriating things that are meant to be for the common use of everyone. The earth belongs to everyone, not to the rich," the encyclical notes that this implies that the right to private property is not absolute and unconditional (*ibid.*). I take this to mean that, in other words, Christianity encourages equality among humankind and equal distribution of world's resources. Likewise, all my respondents stressed the importance of equal distribution of wealth among nations, and some mentioned the responsibility of the richer nations towards poorer nations, and the need for a social balance.

In summary, I note that it is evident, that Christianity not only offers many teachings such as simple lifestyles, sharing, and equality, that would serve to give a spiritual appeal to the environmental behaviour of reducing one's consumption, but also offers a sense of responsibility towards future generations. There are also signs in this religion suggesting the need for spirituality to play a role in addressing consumption problems. I suggest that these present Christian commentaries that clearly disapprove of excessive consumption and environmental destruction, deserve more emphasis.

BUDDHISM

Buddhist View Of Population Control

Both respondents expressed awareness of the existence of a population problem, and acknowledged the need for population control. One respondent stressed that we need to take seriously the responsibility of bringing another human being into the world, and the long term consequences of that action. Another opinion he gave was that the sense of social responsibility of the people towards their country will be stronger in a country with low population due to the confidence that one can have an effect; whereas in highly populated areas such as in the less developed countries, this sense of responsibility tends to be less. My other respondent was of the opinion that there will be room for everyone on the earth, if the locations of people were evenly spread out on the planet. I took this to mean a suggestion for liberation of immigration. In response to the question on earth's limited carrying capacity, he was of opinion that adopting vegetarianism will help in reducing this problem.

The Dalai Lama considers the population problem as one of great importance, and perhaps even the primary global problem (Dalai Lama & Carrière, 1994, p.34-39). His view is that, experts' declaration of earth's limited resources, makes the population problem all the more critical (*ibid.*). To the argument that through biogenetic agriculture the earth would be able to support more people, the Dalai Lama questioned if it was "enough to define life by saying it consists of eating and drinking only" (*ibid.*). He then brought up the need for employment, leisure and time and space, for solitude and meditation (*ibid.*). The Dalai Lama was also of opinion that the problem of population growth and poverty are closely connected. "The growth in population is very much bound up with poverty, and in turn poverty plunders the earth. When human groups are dying of hunger, they eat everything, grass, insects... everything. They cut down the trees; they leave the land dry and bare. All other concerns vanish. That's why in the next thirty years the problems we call 'environmental' will be the hardest ones humanity has to face" (*ibid.*). He also attributes the slaughtering of animals for

food to excessive human population, and even went to the extent of claiming overpopulation as the root of all environmental dangers and threats (*ibid.*). Since all life, humans, plants and animals are regarded as precious from the Buddhist perspective, the annihilation of other forms of life in order to make space for human life is not acceptable. To ensure that the current population will have some prosperity, justice and happiness, “we have to forbid ourselves to go on multiplying” (*ibid.*). To this comment, Carrière noted that it was unfortunate that the Dalai Lama was not invited to the United Nation’s 1994 Conference on Population and Development in Cairo, therefore, his view was not heard (*ibid.*).

Both respondents affirmed that Buddhism does not encourage procreation, and therefore plays no role in contribution to the problem. On the contrary, they pointed out that Buddhism discourages birth. According to one respondent, this is attributed to the fact that Buddhism encourages the sublimation of the sexual craving since it is regarded to be a hindrance to achieving enlightenment. Besides this, monastic lifestyles are also encouraged.

Buddhism is notably a religion that is flexible and adaptable. The Dalai Lama states that it would be insane to hold on to old scriptures when the rest of the world is whisked away by rapid changes (Dalai Lama & Carrière, 1994, p.42-44). Like all other things, scriptures too are relative and impermanent despite its venerability and sacredness (*ibid.*). The flexibility of a religion comes from experience over time, that allows us to judge the dangers of seclusion, the uselessness of doctrinairism, and the vanity of fundamentalism (*ibid.*). Explaining in terms of the population problem, The Dalai Lama states that we first need to establish facts that are unquestionable, such as the increase in population (*ibid.*). Then we reason the causes of the problem, and the circumstances in which it was established (*ibid.*). Taking this into account, while keeping in mind, the reality of interdependence and impermanence, we change our attitude (*ibid.*). Correspondingly, both my respondents acknowledged the flexibility and adaptability in Buddhism; as long as its fundamental values are not compromised. One response was that “... religion has to adapt to modern life all the time, and this means it needs to be reviewed every day if necessary, so that it is practicable in modern life... Religion should not be like a relic. What was preached in the past was suitable to situations of that time; today we need to preach the same things in a different way.” My other respondent pointed out that from the history of Buddhism we can see that each time Buddhism is introduced to a new culture, it adapts and expresses itself though that culture.

Buddhism does not oppose population control, and there are prominent signs of willingness to encourage the pro-environmental behaviour of limiting the number of children one has. The Dalai Lama explicitly stated his support of birth control, and the need for it to be publicised and promoted (The Dalai Lama & Carrière, 1994, p.37). Stating his view of the opposition to birth control by other religious traditions, the Dalai Lama acknowledged that this was true even within Buddhism, but that it was time to break down those barriers (*ibid.*). It is recognised among Buddhists that physical well being, basic material comfort and psychological security are a pre-requisite for meditation and spiritual practices (Gross, 1998, p.114-115). Gross reasons that the concept of interdependence, the value of human birth and the advice of moderation in all pursuits, offered by Buddhism, means a limit to both fertility and consumption (which are interdependent), in order to facilitate a lifestyle conducive to enlightenment (*ibid.*). Similarly, my respondents were willing to encourage birth prevention. However, they stressed that it must be done with methods that are preferably preventive, and preferably methods that are in line with spirituality such as abstinence and meditation but neither of them were against the use of artificial contraceptives. One respondent mentioned that it was not only important to limit the number of children for current environmental reasons, but for the survival of the world. I took this to mean that this concern has to be extended to future generations as well.

In summary, I note that it is evident that Buddhism has a great role to play in addressing the population problem. Through its emphasis on meditation, spirituality and awareness of the

consequences of one's actions, it discourages reproduction, and at the same time due to its adaptability to arising problems, it is unlikely that this religion will pose as a hindrance to any efforts of population control through artificial means.

Buddhist View Of Consumption

Buddhism clearly disapproves of excessive consumption, and regards it as a result of a lack of spirituality. Buddhism is not against material comfort, instead it only opposes excessive unnecessary desires (Hayden, 1996, p.170-171). The shopping culture of the consumer society is not the answer to happiness and personal emptiness according to this religion (*ibid.*). Buddhism regards shopping as an addiction referred to as *samsara* (*ibid.*). Both respondents believed that earth's resources were limited. Giving his opinion on contemporary consumption behaviour, one respondent states, "...people are becoming increasingly materialistic and forgetting the real values of life. All products and services are body related, and therefore the body is becoming increasingly important while the mind is becoming of less importance." My second respondent, expressing his alarm, mentioned that driven by greed and contemporary desires, people lack foresight. He further mentions that western culture seems to be taking over the world, and a trend towards "a throw away society" is becoming more prominent. "People seem to live as if resources are endless," he says. Both respondents expressed that such trends are the result of a lack of spirituality. From their view, it is a feeling of 'something missing' in peoples' lives that leads to excessive consumption. "... many are not aware that what they feel that is missing or lacking in their lives is spirituality." One opinion given was that, awareness alone is not sufficient, and that people need to feel that they are not alienated from the environment. He then mentions, "I actually feel that it is very difficult for people to change their attitude without some sort of spirituality." This single statement, supports the very objective of my thesis, that is, to highlight that we need to include a spiritual or religious appeal to encourage pro-environmental behaviour. "... if an individual has a sufficient spiritual base, he will not let himself be overwhelmed by the lure of technology and by the madness of possession" (Dalai Lama & Carrière, 1994 p. 83). Ikeda (1976, p.181-184), the leader of Soka Gakai International (an international Buddhist-cultural organisation), in his discussions on a humane way of life, states that contemporary society is driven by desires that generate more desires. In current times, living standards are so high, to the extent that waste is not just permitted, but encouraged (*ibid.*). From a Buddhist perspective, material civilisation generates an endless variety of desires in order to create the state of *ten* (rapture or ecstasy) and without realising it people have come to accept this kind of society as ideal (*ibid.*). Ikeda states, "our affluent society seems now to strip human life of idealism, of warmth and humanity, in exchange for the satisfaction of material desires" (*ibid.*). Ecstasy gained from material things is short-lived and this is then followed by agony (*ibid.*). "Joy can easily turn into misery if one loses what he has just obtained. In the height of ecstasy, one is still close to anguish. Contemporary minds are empty, rattled by swirling waves of conflict. That is what we live in today, and if unchanged, life in the future will be just as miserable" (*ibid.*).

Buddhism offers plenty in terms of a spiritual appeal to reduce consumption. Both respondents were willing to encourage this environmental behaviour. One of the life's objectives suggested by Buddhism is to detach one's self from craving material things, permanence, or immortality (Hayden, 1996, p.170-171). Buddhists aim to achieve *wu-yu*, which is an objectless desire, as an alternative to consumption based craving (*ibid.*). One respondent points out that a fundamental Buddhist principle is that all actions have consequences, and Buddhism encourages people to be aware of the consequences of their actions. In explaining the role Buddhism can play in addressing these problems, he asserts that the practise of meditation would make one more aware of one's actions and thoughts and its effects on one's surroundings; this includes the environment and welfare of other beings. Besides many others, one of the suggested ways to reduce consumption is to distinguish between wants and needs, and to question oneself, "what do I need to be truly happy?"

In summary, I note that Buddhism not only explicitly encourages simplicity in life and discourages excessive consumption, but outrightly attributes this to a lack of spirituality. The spiritual way of living, self-restriction, detachment from material desires, vegetarianism and awareness of one's actions encouraged in Buddhism has a tremendous potential to give a spiritual appeal to the environmental behaviour of reducing one's consumption.

HINDUISM

Hindu View Of Population Control

Both respondents expressed some awareness of the population problem, and acknowledged that such a problem exists. However, they did not regard the number itself as the problem, but instead were of opinion that the problem was largely attributed to misuse of resources, a lack of the sharing of world's resources, and a lack of sharing of land among countries. They reason that world population is not evenly distributed on the globe. One respondent was of view that the natural balancing features of the world may dissolve the population problem. From this viewpoint, war, floods, earthquakes and disease are regarded as natural phenomena that seek to regain a balance in human population. My second respondent highlighted the problem of consumption in relation to population problems. "It is said in the Vedas⁶ that God has provided sufficient resources for everybody to survive... provided that these resources are utilised properly." He added that the practise of vegetarianism may contribute to better use of the world's resources. Giving an example, he states, "...deforestation is sometimes attributed to excessive production of meat, due to the vast areas of land needed." His view was that population will not be a problem if resources are properly utilised. He further adds, "I think one has to reorganise the resource utilisation in the world, so that it can bear the population." In another occasion he said, "God has made the earth in harmony, and if we follow the laws of God, there will be place for everybody." He was of opinion that the problem of population growth was somewhat artificial. He backs this view by highlighting that in some parts of the world people are wasting resources. "I have read somewhere that if the food thrown away by households and restaurants in America was collected, it could be used to feed a great part of the world." He also pointed out a past incidence, where grain and other food supplies was destroyed in order to control prices. He then concludes that one cannot justify the claim that the planet does not have sufficient resources to feed the world.

Although Hinduism traditionally regards procreation as sacred, there are other beliefs in this religion that discourage procreation. The Hindu inclination towards procreation and male child preference may have caused population increase. In the Upanishads³, procreation is glorified as an act of sacrifice (Jhingran, 1989, p.203). Because of this it was insisted that a girl should marry early, to beget as many children as possible (*ibid.*). Besides this, a male child is important to the Hindu family, for the purpose of continuing the family line and the performance of funeral rites (*ibid.*). Crawford (1995, p.197), similarly traces this preference for male offspring to the religious belief that the son rescues departed souls of ancestors from hell through funeral rites. Although there is reason to believe that this may cause a feeling of incompleteness within the family, leading to continued pregnancies in the hope of begetting a son, discussions by Jhingran and Crawford did not include evidence of the number of births caused by such belief. Therefore, I cannot affirm here, to what extent this Hindu belief has contributed to population problems. Moreover, both respondents in my study were of opinion that the Hindu preference for male children, was a part of an ancient Hindu belief that is sometimes misunderstood. One of my respondents even pointed out that due to ignorance, this belief has led to female child infanticide, and abortions in India. Although both respondents in my study confirmed the sacredness of procreation in Hinduism, both denied that the Hindu religion has caused population problems. From another viewpoint, they saw Hindu religion as one that discourages birth. Both respondents emphasised features in Hinduism that opposes procreation; that is abstinence and sense control. Therefore, if everyone practices these Hindu

laws strictly, it will result in a decline in population and not an increase. The question is of course, to what degree these laws are practised today?

Although there may be tendencies within this religion to oppose artificial birth control, its adaptability may allow change in beliefs over time. The flexibility and adaptability of the Hindu religion are expressed when Hindus accept the principle of planned family, although this implies rejecting the historical faith in the sacredness of procreation (Jhingran, 1989, p.203-204). Similarly, Chandrasekhar (1968, p.45), points out that social flexibility has been the essential feature of Hindu ethics and relates this to the quick acceptance of family planning in India, and the lack of opposition on religious grounds. Adaptability of this religion is also expressed when Hindu societies allow themselves to change with modernisation, and accept all modern scientific theories without feeling that their religion is being threatened (*ibid.*). While one respondent clarified that it was the practicable part of the religion that is flexible and adaptable to changing circumstances, and not the fundamental philosophical beliefs, the other defined religion simply as truth, and therefore rendering it as not flexible, since truth cannot be flexible. Jhingran (1989, p.205), traces this religion's adaptability to its faith in relation to humankind's *dharma*⁴ (duty) to place, time and circumstances. This is presented in the *Mahabharata*,⁵ where it is stated that one should not accept sacred texts as unconditional authority for deciding one's duty (*ibid.*). It notes that instructions in the Vedas⁶ are limited in scope, and that it is impossible to encompass all the possibilities of life (*ibid.*). It is also pointed out in the *Mahabharata*⁵ that as time changes, so does the circumstances in peoples' lives, therefore whatever was morally right in ancient times does not necessarily remain so in present times (*ibid.*). It even goes to the extent of stating that there is no conduct or custom which is beneficial to all equally (*ibid.*). I note that the flexibility and adaptability of the Hindu religion are favourable when discussing environmental problems.

The law of Karma⁷ and the belief in 'oneness' in Hinduism is inconsistent with the beliefs surrounding funeral rites and superiority of the male child. My experience as a Hindu, is that many who have not indulged in a proper study of this religion often tend to confuse traditional beliefs with religious beliefs. Because of this inability to distinguish religion from tradition many ceremonies and rituals are performed in devoted belief that it is religious, and therefore unquestionably the right thing to do. One of the basic teachings of this religion is the law of Karma⁷, which denotes that each individual is responsible for his own actions, be it good or bad. There may be some symbolic or actual religious meaning in the performance of funeral rites, but it is doubtful that an individual's karma can be transferred to another individual. Jhingran (1989, p.215), discussing the law of Karma⁷, points out that it emphasises that each individual is accountable for his own actions, and that no amount of rituals will help him escape it. The law of Karma⁷ affirms that each human being has to work out his destiny on his own, and therefore completely denies the possibility of ancestors benefiting from the funeral rites performed by sons (*ibid.*). Crawford (1995, p.198-199), also states that "Hindu ethics is more rationally served by the philosophic belief in Karma⁷, which asserts that each person makes his or her own heaven or hell," and this is taken to mean that ones' actions are not transferable to another person. In trying to understand Hinduism many might share Crawford's puzzlement when he states that "... a religion that views life unitively is ethically inconsistent when it elevates the salvific superiority of one sex above the other. It is strange that a religion that establishes the worship of animals and the veneration of trees should discriminate against its own daughters." I note that such inconsistencies perhaps indicates a need for reviewing and reanalysing religion, and perhaps also suggests a need for re-educating people with new religious ideas.

Although Hinduism offers several teachings that would serve to give a spiritual appeal to birth prevention, the practicality of the suggested methods has been questioned. In Hinduism, life is regulated through four stages of life (*asramas*⁸), one of it being the period of life as a householder (Ganguli, 1969, p.208-209). Procreation is restricted to the householder stage,

and sanctions against sexual activities on several auspicious days and seasons are practised (Crawford, 1995, p. 195). Since this period does not last throughout the natural reproductive period, theoretically, if this Hindu regulation was adhered to, there will not be a population problem in India (Ganguli, 1969, p.208-209). One respondent was of opinion that this was a good example where Hinduism can play a role in addressing the population problem. He further notes that according to this principle, one should marry only after age 25 and should practice family life until age 50, the period after which should be dedicated to society service. Mahatma Gandhi who was in support of population control regarded this ancient Hindu law as a method of birth control. He pleaded for a solution to the population problem through abstinence and self-control (Rao 1978, p.1271; Crawford, 1995, p. 195; Ganguli, 1969, p.209). His view, however, faced some oppositions. Ganguli (1969, p.209-210), narrates the words of a Hindu sage, Rabindra Nath Tagore who also opposed Gandhi's view, "In a hunger-stricken country like India it is a crime to thoughtlessly bring more children to existence than could probably be taken care of... I believe that to wait till the moral sense of man becomes a great deal more powerful than it is now, and till then to allow countless generations of children to suffer privations and untimely death for no fault of their own is a great social injustice which should not be tolerated." Gandhi's fear was that artificial birth control means might be used "principally to feed the animal passions, leading to the moral bankruptcy and decadence of people" (Rao, 1978, p.1271). Although this fear is justified, abstinence is not easily acceptable or practicable to the masses of Hindus (*ibid.*). Rao also points out that Gandhi's advocacy of abstinence did not appear to have had any impact on the birth rate in India (*ibid.*). On the contrary, Hindus did not express much resistance to the idea of contraception, since there is no objection either on religious or moral grounds against it (*ibid.*). In fact, one of the Hindu Scriptures, *Brhadaranyaka Upanisad*³ (VI.4.10), speaks of a method of birth control for a man who does not wish for his wife to conceive (*ibid.*).

Through the reinterpretations of Hindu principles, the use of birth control has to some extent been justified from the perspectives of this religion. Crawford (1995, p.195-197), analysed the role that Hindu ethics can play towards supporting the Indian government's efforts in tackling its population growth problem. The first concept in Hindu ethics that he brings to attention is *dharma*⁴ (*ibid.*). Crawford refers to this concept as one with a dynamic notion that is open to change as different situations arise. Historically, the *dharma*⁴ of the Vedas was to give birth to ten sons (*ibid.*). This made sense at that time when high infant mortality, battle and economy based on agriculture, was a norm (*ibid.*). Relating this to the population problem, Crawford states that at present times the same *dharma*⁴ principle of welfare, commands a revolutionary attitude change towards fertility, and towards fertility as a requirement of *dharma*⁴ (*ibid.*). Two other factors that are essential to ethics concerning population are marriage and offspring (*ibid.*). The five purposes of marriage according to Hindu tradition are pleasure, parenthood, companionship, sacrificial service and spiritual bliss (*ibid.*). Due to the historic need for a large family, the primary purpose of marriage was developed around the notion of parenthood (*ibid.*). Today, the world is faced with population pressure; therefore, the social and spiritual purpose of marriage should be built around the notion of companionship instead (*ibid.*).

Rao (1978, p.1271), notes some Hindu customs that reduce fertility such as "prohibition of widow remarriage and taboo against intercourse during lactation and certain religious days." Although some may regard "prohibition of widow remarriage" to be a serious discrimination against women, in view of the population problem, I note that this is favourable. Besides this, I would like to add that the sanctity of marriage in Hindu religion may also to a certain extent be viewed as a factor that prevents birth. This notion discourages promiscuity, and decreases the chances of unnecessary, and often unwelcome births out of wedlock.

Both respondents were willing to advise people to limit the number of children they have for environmental reasons. However, one respondent said that he will only promote meditation and abstinence as a method of birth control. My other respondent was of the opinion that the

practicality of this is rather difficult, especially in societies where people are ignorant and lack education. Although he asserted that birth control in these places should be allowed, he emphasised that in the long run, spiritual methods would be preferable.

In summary, although there are controversies in the acceptance of artificial contraception, there are many teachings in Hinduism that are against unnecessary procreation; such as abstinence, sense control, procreation being limited to only one out of four stages of life (*asramas*⁸), duty (*dharma*⁴) and the sanctity of marriage. If these aspects of the religion can be emphasised, theoretically population can be reduced. The flexibility and adaptability of Hinduism may allow room for change when faced with environmental problems; justifying to some extent the use of artificial contraceptive means. It is unlikely, although not impossible, that this religion will be a hindrance in population control efforts.

Hindu View Of Consumption

Excessive consumption is looked upon negatively in Hinduism. One of my respondents bluntly stated, "...according to the scriptures, if you have more than you need, then you are stealing, you are a thief!" My second respondent stated that the Hindu view of consumption is based on the belief that everyone has a certain quota given by God, and that when one exceeds this quota it leads to the suffering of oneself, and of others. Simplifying this belief, he says, "...if we eat too much, we are consuming a portion of food that was meant for someone else, and if we throw away food, then we are throwing away a portion that someone else could have eaten."

Although on one hand, there is an awareness of limitations of earth's resources, the faith in earth's restoring capabilities, on the other hand, dilutes such fears. Addressing the questions on limitations of earth's resources, one respondent's view was that people are only thinking of their contemporary lives, and about "making money today" without many worries of the future. What they do not realise, he says, is that their children will suffer when faced with the consequential environmental catastrophe. I note that this is derived from the Hindu belief of duty to future generations. Even so, this respondent expressed faith in the balancing capabilities of the earth. He was confident that even if one resource was exhausted, another will emerge, and therefore humans will still be able to survive. I note that although from one point of view, we cannot deny the possibility of discovering new resources in the future, too much optimism towards this view and earth's restoring ability is probably derived from pure naiveté. Here again I see a need for ecological education. In contrary to this view, my other respondent believed in the limitations of earth's resources.

Both respondents affirmed that lack of spirituality contributes to consumption problems. One response was, "...in the old culture, in the spiritual culture, people used to live simply and gain satisfaction from their relationship with God. Nowadays, since this satisfaction has been removed, people resort to consumerism in the belief that it is a source of happiness. Consumerism is therefore a substitute for the true happiness obtained from spirituality." He further asserts that happiness gained through consumerism is not enduring. He was also of opinion that the emergence of a "consumer society" has removed one of the best things in life, "the ability to give to others without the expectation of something in return," which he regards as the fundamental characteristic of a "true culture."

Besides the call for charity, simple living, spiritual living, reusing, recycling and avoiding unnecessary consumption, both respondents spoke of the principle of "service" in Hinduism (that means to selflessly serve others), as a solution to the consumption problem. One respondent asserted that if people adopted this principle in their daily lives, and worked to 'serve' instead of for money and material gains, many problems can be overcome. My second respondent pointed out that Hinduism encourages vegetarianism. His view was that reducing meat consumption was one way of beneficially reducing consumption. He backed his view by

highlighting the ecological problems associated with meat production, and the reasoning that feelings of compassion associated with being vegetarian, is beneficial to society in general. He also mentioned that the Hindu belief in Karma⁷ and reincarnation propagates that one is responsible for one's own actions. Therefore, one is responsible for every act of consumption performed in this life; the consequences of these actions are taken on to future lives. His view was that, when an individual is aware that he has to come back and live again in the earth that he left before, he will tend to be more careful of his actions.

Historically, Hindus have regarded the earth as sacred, and even as the very body of God Himself (Renard, 1999, p.149). However, this belief did not always influence public policy in a clear and direct manner (*ibid.*). Mahatma Gandhi, who may be regarded as a Hindu Environmentalist, had stressed the need for simple lifestyles, small scale industry that was more labour intensive, and the use of only what was needed to sustain one's health (*ibid.*). Renard regards Gandhi to be an example of "an ancient heritage of teachings with potentially great impact on the environment" (*ibid.*). Addressing the issue of Biodiversity from a Hindu perspective, Crawford (1995, p.184-185) notes that Hinduism accepts extinction as part of life due to its evolutionary outlook. However, enormous killing is considered as the most serious form of *himsa*⁹ "...the wiping out of whole ecosystems – nature's laboratories of new life forms – constitutes 'the death of birth'." (*ibid.*). According to Crawford, Hindu morality condemns the killing of plants and animals to satisfy human greed (*ibid.*). I note that this may be taken to imply that Hindu morality does not approve of voracious consumption as this often results in the extensive killing of plants and animals.

In line with the theory of Karma⁷ and reincarnation, the Hindu religion regards all of nature to be interconnected, and capable of progressive advancement from matter, to life, to higher consciousness and finally to divine spirit (Coward, 1993, p.50-52). "It is clear that Hinduism views us as having duties not only to humans, of whatever time and place, but also to animals, plants, and elements of the environment, all of which are taken to be God's body, and therefore to have intrinsic value" (*ibid.*). This view seems to me, not only very much in accordance with the current fundamental principle of sustainability, but goes several steps ahead by including animals, plants and the elements as subjects of concern. I suggest, that perhaps this aspect in Hinduism may help in the formulation of a new sustainability principle, 'development that meets the needs of present generations without compromising on the capability of future generations of humans, animals and plants to meet their needs, and without compromising the rights of elements to remain in its natural state.'

The Hindu principle of "restraint" originates from the Hindu's objective of renunciation (Crawford, 1995, p.184). Based on this principle, is the concept of *bhu-rna*¹⁰, which promotes conservation above consumption (Crawford, 1995, p.193). This means that we are to replace what we remove in order to maintain earth's ecological balance (*ibid.*). In the Hindu world, the hero is not the warrior, but the modest (*ibid.*). This does not mean that the pursuit of wealth is discouraged altogether, but it is subject to concerns of morality (*ibid.*). Hindu ethics encourage a path of moderate growth that is selective in nature based on equity and quality (*ibid.*). In addition to this, I note that knowledge, including spiritual knowledge, is considered as the only true wealth among Hindus, because this is the only form of wealth that one is able to take into the next life. The lesser one owns, the richer he is. To Hindus this means detachment from the material world, and this is seen as a need to facilitate progress into the spiritual world.

To bring to the reader's attention another perspective of this religion, I note that a belief in Hinduism that regards the physical world to be a temporary illusion or dream, implies a view that is transcending nature. From one viewpoint, this may be interpreted as a lack of concern for the physical world. The possibility of this is not denied. However, this need not necessarily imply a destructive attitude towards nature among Hindus due to numerous other

teachings in this religion that seeks a non-violent disposition towards all lives. The belief of the physical world as being an illusion is tied to the Hindu's objective to achieve higher consciousness. Attachment to worldly objects needs to be given up for this purpose. This concept, from another viewpoint, may be regarded as one that is pro-environment, since excessive consumption is discouraged.

In summary, the various teachings in Hinduism such as vegetarianism, restraint, service, equity, detachment from material possessions in pursuit of higher consciousness, non-violence, duty to all life forms and elements, and responsibility for one's actions, provides a spiritual appeal to the environmental behaviour of reducing one's consumption. Therefore Hinduism has the potential to play a great role, in addressing the consumption problem.

ISLAM

Islamic View Of Population Control

Traditionally Islam favours procreation, and past events have indicated some form of interruption by Islam in efforts to control population. Crawford (1995, p.165), relating religion to the population crisis, notes how Iran, Egypt and Pakistan faced oppositions to family planning by Muslim fundamentalists. Ganguli (1969, p.211), narrates several scriptural statements from traditional Islam that favour large families: "When a servant of Allah marries, he perfects half his religion"; "Marry and multiply so that I may be glorified in my community over other communities"; "The best man in our community is he who has most wives." Besides these, other social and economic aspects of Muslim life such as polygamy and divorce have also encouraged large families (*ibid.*). To a certain extent this may explain the rapid increase of Muslim populations in some communities. In their analysis of population growth in the Soviet Union between the years 1958 and 1979, Anderson & Silver (1990, p.169-170) report that Muslim women had much higher fertility rate than non-Muslim women. Some local religious leaders did not approve of contraception because they regarded the expansion of the Muslim population as a Prophetic command (Esposito, 1995, p.1978). Critics argue that contraception is against teachings of the Quran¹¹ because it comprises infanticide, denigrates God's divine providence and the belief that He determines the destiny of all, neglects the command to trust in God, and ignores procreation as the main purpose of marriage (*ibid.*). Reacting to Western colonialism and imperialism, some have argued that contraception reduces the number of Muslims; hence, weakens the power of its community (*ibid.*). Some have even accused the West of using birth control programmes to limit the development of the Muslim world, and to repress Islam (*ibid.*).

Although all three respondents were generally aware of population problems, they regarded imbalance in the distribution of people and resources as the actual problems. Their fear that over population may result in a shortage of resources was somewhat diluted by a belief in God's unlimited providence, God's predetermination of world population and the End of the world, confidence in the existence of alternative resources and faith in human intelligence. Two respondents pointed out that if high death rates in certain countries continue, then the predicted increase in world population may not take place. Two of them asserted that it was unequal distribution of the world's resource and its improper use that was the main problem, and not human numbers. One response was, "according to Islam, God created the world in a perfect way; He ensures its sustenance and provides for everyone... so there is no problem." He clarified that the problem arises only when we misuse God's providence. He supported his view by pointing out how in some areas of the world people throw away food, while in other parts people are starving. He also said that it is mentioned in the Quran¹¹ that if humankind misuses the properties of the earth, they can cause destruction that will create problems for themselves. Two of my respondents indicated a belief in the predetermination of the world population increase by God. Although my third respondent felt that there could be limits to earth's carrying capacity, he felt that the problem can be solved by a better distribution of people on the planet. A solution to the problem from my respondents' viewpoint is to simply share the resources and space that God provided. Somewhat in contrast to this, Masri (1992, p.13-16) regards over population to be a major cause of world ecological problems, and notes that Islamic laws have been formulated hundreds of years ago to restrict population growth in cities. However, Masri also notes that famine in many parts of the world is attributed more to the fact that we defied the laws of nature than to over population (*ibid.*). For instance, the breaking of the natural chain of food supplies (*ibid.*).

Although all three respondents acknowledged that from an Islamic viewpoint children are necessary in a marriage, only one of them who had witnessed this in his own country, acknowledged that Islam in the past has contributed to population increase by prohibiting the use of contraceptives. He also pointed out that from an Islamic viewpoint, population is regarded as an asset of the nation provided that the society is managed in a proper way. From

his viewpoint this means that before a child is brought into the world, the parents need to ensure that the child will be provided for with the necessary good life and education to ensure that he or she will grow up to be an asset to the world, and not a liability. He also spoke of the risk of 'the call for procreation' being understood in a different way, especially from an orthodox viewpoint. An increase in the Muslim population, he says, may be regarded as a means of spreading the Islamic religion. He was also of opinion that Islam was mixed with culture, and highlighted the possibility of the religious beliefs being confused with cultural beliefs. "Sometimes, people suffer due to an ignorance of religion." Another respondent's view was that it was not religion, but people's own decisions that result in large numbers of children in families. He clarified that God had given humankind intelligence to decide upon the number of children one should have. He further asserts that Islam does not encourage families to have more children than they can afford, and that Islam stresses the importance of the quality of their lives. He also mentioned that in some places families have more children out of necessity to share the burden of supporting the family, and not for religious reasons.

Although the adaptability of Islam allows the possibility for change when society is faced with environmental problems, controversies surrounding the use of birth control still exist. The Muslim attitude towards population control is related to beliefs and values pertaining to the nature and purpose of society, family, marriage, procreation and child rearing (Esposito, 1995, p.1977). Muslim scholars attempted to narrate God's law for the community in the early centuries of Islam, and produced a set of law, the *Sharia*¹², that united the words of God with human interpretation and implementation His words (Esposito, 1995, p.1977). The difference between God's law and human interpretations or implementations of it justified legal change (*ibid.*). Islamic law is based on four sources, that is, the Quran, the *Sunnah*¹³, analogical reasoning and community consensus (*ibid.*). I regard the incorporation of 'analogical reasoning' and 'community consensus,' as signs of adaptability in Islam. This indicates the possibility for change in Islamic law based on environmental reasons. My respondents unanimously acknowledge the flexibility and adaptability of Islam. One respondent states, "... the Quran is a book of general rules, the details is up to the people." In response to the question of changing religious views surrounding the issue of birth control use, one respondent asserted that this was essential. He narrates, "... in a scientific age, we need to accept scientific reasoning, especially when we are faced with problems." Two respondents regarded contraception as something that has been accepted in Islam, and one of them mentioned that even abortion is allowed under extreme situations. For instance when the parents are not able to provide for another child. In contrast, my third respondent insisted that the use of artificial contraceptive is not allowed in Islam. Hartmann (1987, p.49), also reports similar controversies among Muslims. He notes that some religious authorities maintain that Islam approves of family planning and even abortion, while others regard it to be against the religion. Although some *hadiths*¹⁴ forbid birth control, the majority of the *hadiths*¹⁴ permit birth control by means of *coitus interruptus* (Esposito, 1995, p.1978).

Although progeneration and the establishment of a family are among the main goals of marriage, since early Islamic history, Muslim jurists allowed contraception to limit the size of the family (Esposito, 1995, p.1978). The most common method of contraception discussed in Islamic Law is *coitus interruptus* (Musallam, 1978, p.1264). This acceptance was based on the argument that the method was not infallible, and therefore does not counter God's power (Esposito, 1995, p.1978). Despite the practise of *coitus interruptus*, a woman would still become pregnant if it is God's will that she does (*ibid.*). "That God is all-powerful, and that ultimately no human act can avert a creation He truly intends" is the main argument employed by Muslim jurists to permit contraception (Musallam, 1978, p.1265). If one practises contraception to escape having children and succeeds, this means that God has not intended the birth of a child and conception despite the use of contraception indicates that He has intended the opposite (*ibid.*). I note that this indicates a belief that God has predetermined everything. According to Musallam (1978, p.1265), the early approval of contraception was established based on a combination of the *hadith*¹⁴, knowledge on biology, reasoning by

analogy and consensus of the community scholars. It has also been pointed out that there is nothing in the Quran that explicitly opposes or encourages the use of contraceptives, and this has resulted in diverse beliefs in the religion (Esposito, 1995, p.1978). Some of the reasons that allows birth prevention in Islam include avoidance of material hardship in supporting a large number of dependants, to safeguard property, to ensure the children's education and to ensure the mother's health (Musallam, 1978, p.1266). I take this to mean that Islam generally emphasises the quality of life rather than the quantity of lives. This means that one can also add consequential environmental problems in densely populated areas that reduces the quality of life as yet another reason for birth prevention. On the basis of the legal principle of reasoning by analogy, some modern Sunni and Shiite jurists have also argued that since *coitus interruptus* has long been accepted as a form of birth control, by analogy, other modern methods of birth control should also be accepted (Esposito, 1995, p.1979).

Despite some disagreements, population control for environmental reasons is gaining acceptance among Muslims. Addressing the issue of family planning, The Supreme Teacher, the Grand Mufti of Egypt, issued a statement in January 1937, clarifying that it was allowed for husband and wife by mutual consent, to use both natural and artificial birth control methods to prevent pregnancy (Ganguli, 1969, p.211-212). This was accomplished from the initiatives of the national forum for population control in Egypt at that time. Since the publication of this statement family planning efforts have not faced any serious oppositions on religious grounds (*ibid.*). There were also signs of national leaders supporting such efforts and many studies in India indicate that the majority of Muslims did not reject contraceptives on religious grounds (*ibid.*). One respondent clearly indicated a willingness to encourage birth control for environmental reasons. My second respondent expressed similar willingness, but his concerns were more towards the ability of parents to provide for their children than towards environmental reasons. My third respondent who was of the opinion that only natural methods of birth control were allowed in Islam, was not willing to do this. In contrast, he said that he would advocate instead the words of the Prophet, "... marry a woman who can beget more children." Concern over the consequences of a population explosion, especially in areas with scarce resources, have driven governments in many Muslim countries such as Indonesia, Egypt, Iran and Bangladesh to sponsor fertility control programmes and policies (Esposito, 1995, p.1978). Governments attempting to initiate family planning programmes in Muslim countries, often turn to religious leaders to validate their programs and to gain common support (*ibid.*). This indicates an importance of incorporating a religious appeal in population control efforts.

In summary, I note that Islam emphasises the quality of life and responsible parenthood. These teachings may serve as a spiritual appeal to birth prevention. Although some disagreement still exists within the Muslim community surrounding birth control use, the adaptability of this religion is a positive sign that such views can be subject to change when faced with new problems. If concrete consensus regarding the acceptance of birth control is achieved, it is unlikely that Islam will pose a hindrance to population control efforts.

Islamic View Of Consumption

Although all three respondents were of opinion that people over consumed, and that Islam does not approve this, they did not express fear of exhaustion of resources. This may be attributed to their faith in God's unlimited providence, alternative resources and increased efficiency in resource utilisation. All three respondents were of opinion that the crisis surrounding exhaustion of resources is exaggerated, and they expressed faith in God's divine providence and the existence of alternative resources. Somewhat in contrast to this belief, Masri (1992, p.3-4) points out the possibility of misinterpretation of scriptures in Islam. "The information we were given in our early scriptures on the creation of humanity and the earth has either been misunderstood or has been wilfully misinterpreted" (*ibid.*). Until a few

centuries ago, people believed that space and resources on earth was limitless (*ibid.*). Today, although we are aware of such limits, we continue with our wasteful behaviours (*ibid.*). This refusal to accept hard facts is the main cause of environmental problems (*ibid.*). Two respondents voiced out that Muslims do not fear such happenings in the future because of the belief in the existence of the end of the world. In reply to a question on exhaustion of non-renewable resources as a result of excessive consumption, one respondent said, "... we think that perhaps this is an indication that life is coming to an end as predicted by the Prophet." Therefore, I note that in Islam an environmental catastrophe may be viewed as an indication of the approaching of the end of the world. I point out that if this is regarded as a doing of God, then this may be mistakenly taken to mean that humankind is not responsible for any environmental catastrophe. However, from an Islamic viewpoint, this is not the case. Ouis (1998, p.159) points out that it is stated in the Quran¹¹ (30:41) that "Mischief (*fasad*) has appeared on land and sea because of the deeds that the hands of men have earned that Allah may give them a taste of some of their deeds, in order that they may turn back from evil." Ouis, interpreting the term *fasad* from an environmental viewpoint, states that this term may be taken to mean pollution and environmental destruction (*ibid.*). I add that since humankind's actions such as excessive consumption and wastefulness results in environmental problems, these too may be applied to the term *fasad*.

The notion that past Western colonisation is the reason for environmental destruction in Muslim countries is debatable, and a need to highlight the pro-environmental teachings in Islam is seen. Nasr (1993, p.136-141), blames Western civilisation for the absolutistic view of humankind. Nasr reasons that it is this absolutism that has caused environmental destruction for immediate economic gain, without taking into account the effects it would have on future generations and fellow creatures of the planet (*ibid.*). Nasr points out that Islam does not accept such absolutism (*ibid.*). In discussing the reasons behind the lack of environmental preservation in Muslim countries despite the pro-environment features in Islam, Nasr attributes this deficiency to the adoption of Western science and technology (*ibid.*). Nasr also states that Western colonial domination has caused many Muslim countries to discard many of their divine laws or *al-Shariah*¹², that has many environmental teachings; adopting instead, secular Belgian, French or British codes which do not express much environmental concern (*ibid.*). Perhaps to some extent Nasr's theory that environmental destruction is the result of absolutism of humankind may have been true. However, I question this theory based on the reasoning that environmentally destructive behaviour exists in every society, regardless of a history of colonisation or its type of religious belief. There may be much truth in Nasr's reasoning pertaining to lack of environmental concern within Muslim countries, but what interests me more is the next step. Now that we are aware of the existence of the ecological crisis, what is crucial is immediate actions to rectify the situation. Carrying on a tradition of blaming past western influence for contemporary lack of environmental concern, and developing an attitude that is anti-Western (especially towards western technology) is not going to be of much help, since efficient technology and co-operation between countries is necessary in resolving environmental problems. It would be more beneficial to drastically change our environmental behaviours instead.

Malaysia, a Muslim country (free from British colonisation for over 30 years) continues to destroy its natural environment in the name of economic development, catering to ever increasing consumerism, despite full awareness of the global ecological crisis. For example, in February 1997, the Malaysian Prime Minister approved the Highland Highway construction, a huge development project that would involve the clearing of a vast area of virgin highland forest. Analysing the objectives for the construction, which includes economic, tourism and agriculture development, WWF Malaysia has concluded that alternatives to achieve such objectives are abundant, and there does not seem to be a true need for such a project (Lois, 1996, 78-85). Despite pleas from several environmental agencies the plan to carry out the project still stands. What is lacking in this Muslim country is, I believe, a

better awareness of the environmental ethics within its own religion. Masri (1992, p.12-13), points out Islamic laws on forest conservation. These laws speak of certain allocated areas called *harim* or *hima* where development or cultivation is prohibited (*ibid.*). Another example is instructions concerning trees and animals given by the first successor of the Prophet, Hazrat Abu Bakr, to his troops before sending them for battle, “Do not cut down trees and do not kill animals except for food (in the enemy territory)” (*ibid.*).

Islam disapproves excessive consumption, and various Islamic beliefs that can serve to give a spiritual appeal to the pro-environmental behaviour of reducing one’s consumption is identified. All three respondents affirmed that Islam does not permit over consumption. One respondent pointed out that according to Islamic principles one should not consume more than one needs even if one is rich. Another respondent said, “... Islam is completely against the misuse of resources.” He then highlighted the lack of happiness among people despite the fact that everything produced and consumed today is to create human happiness. He was of view that this is was due to a focus on the material aspects of life, ignoring completely the spiritual aspects. He states that one can only be truly happy when there is a balance between these two aspects. My third respondent asserted that the Islamic teaching that encourages equal distribution of wealth, will somewhat help in reducing consumption. Likewise, another respondent narrates that the concept of surrendering part of one’s income to charity that Islam advocates can play a big role in reducing consumption. He clarifies, “if people abide by this principle, it is unlikely that they will utilise more than what is necessary for subsistence, and they will be more inclined to save money to help others.”

Deen (1996, p.170), relates the Islamic concept of charity with the concept of sustained environmental care, since charity is not only meant for the present generation, but also for future ones. Deen (1996, p.166) translates (Surah 2:29), “He it is Who created for you, all that is in the earth” to mean that the environment is meant to be of service not only for the present generation, but also future ones, since the term “you” refers to all humans without limits of time or place. I note that Deen has pointed out an aspect in Islam that is in line with the sustainability principle that includes concern for future generations. Another viewpoint given by one respondent was that Islam does not encourage the accumulation of wealth, since it is not possible to take material wealth into the after world. Therefore, one should take only what one needs. He also narrates that according to Islam, wealth causes pain to a person in three occasions. First, when earning wealth, second, when leaving it at the time of his death and third, in the after world when he is required to give accounts for his wealth. Considering this Islamic belief, minimum subsistence is encouraged. He concludes by saying “... if you have got means for today, do not think for tomorrow.”

All three respondents asserted that Islam had a great role to play in addressing the consumption problem, provided that people follow the rules of the religion seriously. “If we practised the religion one hundred percent then there will be justice in society, and all problems will be solved.” Another suggestion of how one can reduce one’s consumption was through compassion. “If we feel for other people, and if we realise that there are other people in the world who have nothing to eat, and nothing to wear, then we will do something.” Deen (1990, p.165), notes that environmental ethics in Islam is based on the principle that all human relationships are established on justice and equity. The term *ummah wasat* (balanced society) in the Quran (2:143), “Thus have We made you an *ummah* justly balanced (*wasat*), that ye might be witnesses over mankind...” is taken to mean that the perfect Islamic society is one that is moderate and balanced (Ouis, 1998, p.160-161). Therefore, Islam promotes moderate living on a general subsistence level for everybody, and not unequal living standards where a few people enjoy luxurious lives (*ibid.*). In Islam wasteful behaviour is regarded as sinful (*ibid.*). The Quran urges moderate spending, and forbids lavish and wasteful use of natural resources (*ibid.*). Similarly, Deen (1996, p.169) also points out that wasteful spending is not accepted in Islam. Although Islam permits the use of natural

resources, its utilisation should not involve unnecessary destruction. Deen derives this view from (Surah 7:31), which states “O Children of Adam! Look to your adornment at every place of worship, and eat and drink, but be not prodigal. Lo! He loveth not the prodigals.” Deen explains that to eat and drink refers to the utilisation of the sources of life (*ibid.*). However, such utilisation is not without limits, and these sources must be protected so that their utilisation may be sustained (*ibid.*). This preservation must be carried out selflessly, and not solely for the benefit of humans (*ibid.*). Although these Islamic ethics speak of the natural environment, I see a direct application of these ethics to our consumption behaviour as it clearly indicates that we cannot consume as we fancy; firstly, because it was not all meant for us, and secondly, we need to take into consideration the needs of other living creatures and the needs of future generation. In other words, since Islam advocates environmental protection, one needs to reduce consumption to ensure this protection.

In perhaps an attempt in suggesting a solution, Nasr states,

“It is also important for everyone to realise that since the environmental crisis is global, it requires global attention. The Islamic world must do its utmost to bring its rich intellectual and ethical tradition to bear upon this problem, as the West must realise that there is wisdom within the Islamic tradition concerning nature and the natural environment which can be of great significance for those in the West who are in quest of reformulating a theology of nature” Nasr (1993, p.141-142).

This seems to be noble idea indeed. However, such intents may be more successful, if Muslim countries first start by making changes within their communities, and fully practice the environmental ethics within their religion in order to become an example for other communities. Nevertheless, I am very much in agreement with Nasr’s (1993, p.143) concluding remarks that in response to the environmental crisis, the Islamic world needs to carry out two expansive programmes. Firstly, the spiritual insights of Islam pertaining to the natural order, its religious meaning and its close connection to man’s life, needs to be formulated clearly in a contemporary language, and secondly, the awareness of *Shariite*¹² teachings concerning environmental ethics needs to be spread (*ibid.*). “In addition to passing laws of a civil nature against acts of pollution similar to what is done in the West, Islamic countries must bring out the *Shariite*¹² injunctions concerning care for nature and compassion towards animals and plants, so that environmental laws will be seen by Muslims to be impregnated with religious significance” (*ibid.*). Masri (1992, p.2), notes that there are some five hundred verses in the Quran¹¹ that provides information on the environment and how it should be dealt with.

The Islamic encouragement of simple living, charity, equality and protection of natural environment may serve to give a spiritual appeal to the environmental behaviour of limiting one’s consumption, and therefore Islam has great potential to play a role in addressing the consumption problem.

DISCUSSION AND CONCLUSION

Human Population -- A Problem?

What I found most interesting in my study was that many of my respondents did not regard population number as a problem in itself. Their view was that, it was other factors such as the unequal distribution of world's resources, misuse of resources, excessive consumption and uneven allocation of human settlements that are the "actual" problems. To some extent this viewpoint is justifiable. From an argument purely based on logic, I say that these are the factors that make population number appear to be a problem (Figure 2). It is usually the consequent problems such as poverty, famine, and natural resource depletion (that is attributed partly to inequality in the world), that makes the human number in an area seem to be a problem. If these consequent problems do not exist, and if human settlements are spread out evenly on the planet, then human population number will not appear such a dramatic problem. It is here also that the population problem and consumption problem are interlinked. Theoretically, if everyone consumed only what was needed, there will be sufficient resources for others. If consumption is substantially reduced, there will be lesser consequent environmental problems, and human population will not appear to be a problem. Therefore, if people lived according to the teachings of their respective religions, and practised simple lives, sharing and equal distribution of wealth, the problems often associated with population number will not be so enormous. Based on these points, I assert that addressing the population problem solely in terms of numbers, and attempts focused solely on reducing that number, will not solve the "actual" world's population problems if this is not accompanied with attempts to change political and economical situations to achieve a more just and equal distribution of resources and people. "Actual" problems here refers to the consequent problems that is related with over population. This view is admittedly far from being indisputable. Is it "human population number" that causes the consequent problems, or do the consequent problems cause "human population number" appear to be a problem?

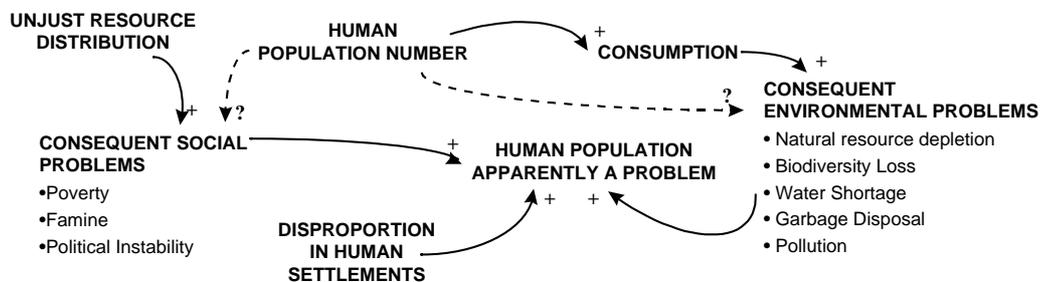


Figure 2: What makes human population number appear to be a problem? *The + sign indicates that an increase in item at arrow's tail results in an increase in the item at the arrow's head*¹. (Adapted from Roberts et al. 1983, p.56).

A Note On Birth Control

Birth control is regarded necessary in population control, in spite of the religious believes surrounding the issue. However, it is important to recognise that artificial means is not the only solution in hand. Although theoretically it is possible to prevent conception through natural means suggested by some religions, such as the rhythm method, *coitus interruptus* and abstinence, the practicality and reliability of the first two methods is doubted, while the third method requires a very high level of spirituality and strong will power, that is unlikely in a commoner. However, I do acknowledge that through a spiritual appeal to birth prevention, there are possibilities that these may become the preferred methods in the future, if

humankind on the whole become attached to the spiritual aspects of life. Still we need to address the problem in hand; and the problem is that, as noted by Kaplan & Tong (1994, p.86) overpopulation problem does not stem from the desire of parents to have more children than they can support, but rather because they do not always have access to the necessary means to prevent undesired conception. On the other hand, we need to acknowledge that promotion of artificial birth control use is not the only way to control population. Latest research in obstetrics and gynaecology indicate improvements in some methods of natural family planning. For example, Dorairaj (1991, p.2066-2067) reports a fairly effective and simple natural family method, referred to as the Modified Mucous Method, that was designed to cater to the cultural needs of illiterate women in India. Recent research has also lead to a general agreement on the status of lactational amenorrhea (breast feeding) as a method of family planning (Howie,1991, p.1990). Queenan & Kamran (1991, p.1979), note that the ovulation method is not widely used despite its efficiency. They also note that biomedical research is being conducted to increase the knowledge, availability, effectiveness and acceptability of natural family planning methods, for instance the development of a home test kit for ovulation prediction (*ibid.*). Queenan *et al.* (1991, p.1977), note how women who resort to natural family planning methods are often uninformed, and hence use the method ineffectively. This indicates the need for natural family planning methods to be improved and taught more efficiently (*ibid.*). I note that due to all the hype surrounding the acceptance of artificial birth control, perhaps we have neglected that there is an alternative solution, that is, improving natural family planning. Instead of pressuring religious representatives to change their religious views, governments do have the option of investing instead in research on effectiveness of natural family planning methods, increasing its knowledge and availability.

A Spiritual Appeal In Addressing The Population Problem

A spiritual approach in addressing the population problem will most likely be one that attempts to reduce population number for environmental and social reasons; while concurrently attempting to reduce the consequent problems through better resources distribution, equality and perhaps a more even allocation of humans on the planet (Figure 3).

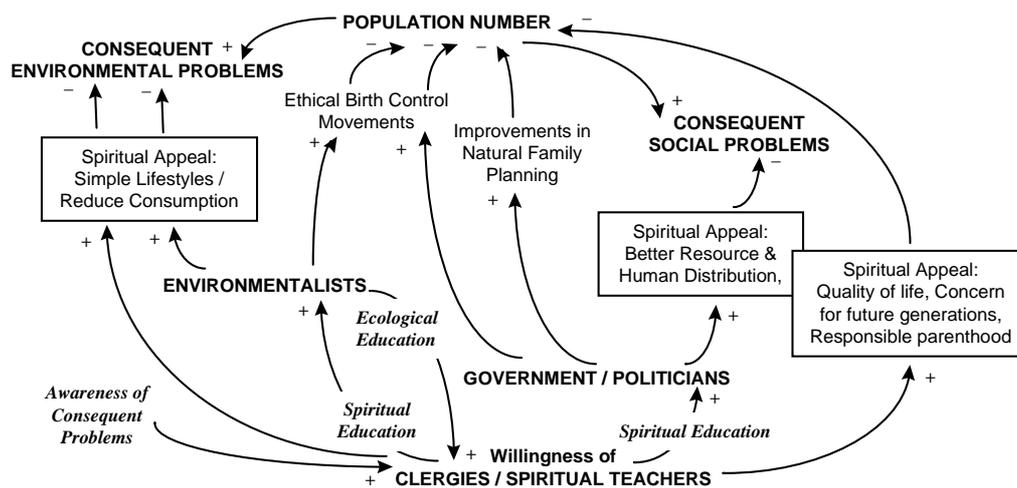


Figure 3: Incorporating a Spiritual Appeal in addressing the Population Problem (See Notes 1. for explanation of symbols used)

Clergies and religious teachers may provide a spiritual appeal to the pro-environmental behaviour of birth prevention through the emphasis on the quality of life, concern for future generations and responsible parenthood. Population can be reduced through the religiously approved methods of natural family planning, abstinence, meditation, delaying marriage and moral education. Besides the awareness of the consequent problems, ecological education may enhance the willingness of clergies to spread environmental awareness. Concurrently, environmentalists and governments may base their population control efforts on ethical birth control movements, and perhaps invest in improvements in natural family planning. Some degree of spiritual education may be necessary for environmentalists and politicians in order to motivate ethically based population control efforts, and to establish better world resources distribution and even allocation of human settlements.

A Spiritual Appeal In Addressing The Consumption Problem

Considering the results of my study, I assert that each religion has something concrete to offer in terms of a spiritual appeal to the pro-environmental behaviour of reducing consumption. This appeal can be made directly to people, or indirectly through media, education, policies and environmental law (Figure 4). For environmentalists and politicians to play a role, some degree of spiritual education may be necessary. As for the part that clergies and spiritual teachers can play, indications of willingness are definitely there. Besides awareness of the consequent problems, ecological education may enhance the willingness of clergies and spiritual teachers to encourage environmental behaviour. A few of my respondents were concerned that religion’s role in addressing the consumption problem will be affective only if people practised religion seriously. I note that for this approach to be effective, people first need to acknowledge that their excessive consumption habits are attributed to a lack of spirituality in their lives, and secondly adopt a more spiritual lifestyle, although this is not absolutely essential.

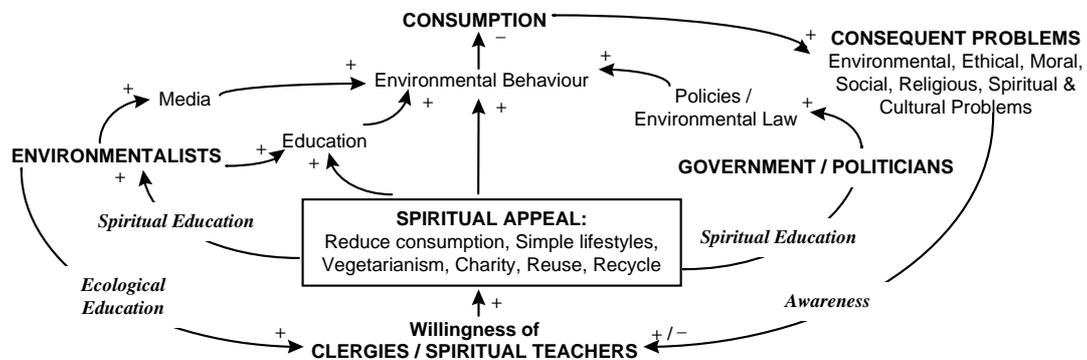


Figure 4: Incorporating a Spiritual Appeal in addressing the Consumption Problem (See Notes 1. for explanation of symbols used).

Since religions tend to favour equal distribution of resources and balanced allocation of people on the planet, I note that religions have a great role to play in the related political decisions. A particular religious view (found in all religions in my study) that supports the principle of sustainability is responsibility towards future generations. In addition to this, Hinduism and Buddhism encourage vegetarianism. I see this as an important area where religion can help in modifying an individual’s consumption behaviour. It would be hard to deny that a vegetarian diet is likely to be more environmentally friendly in comparison with a non-vegetarian one. This can be explained simply through the second Law of

Thermodynamics. Since, some energy is lost, each time it is converted from one form to another, we save more energy when we eat lower in the food chain. When we reduce the number of energy conversions in our 'food production and consumption' processes, it will be possible to feed more people with the same amount of energy. This view is certainly subject to much debate from a nutritional viewpoint, and also from other viewpoints if we take into consideration aspects such as fertiliser use, packaging and transportation that is associated with fruits and vegetable production. However, on the whole it is still more ecologically beneficial to adopt a diet similar to a "primary consumer." Besides this, I note that many people consume far more animal protein than their bodies actually need. I also note that it is often debated that a vegetarian diet is actually healthier. Based on these arguments, I assert that, vegetarianism is something that brings multiple benefits; therefore, this teaching in Buddhism and Hinduism should be highlighted and encouraged.

The origins and causes of consumerism are admittedly multifactorial and complex, but there are signs that a lack of spirituality is a large causal factor. Erickson (1997, p.117-125), notes the many reasons for increased consumption such as 'evidence of financial strength'; 'to maintain status and social distinction'; 'to feel important, powerful, adult and successful'; self-reward; 'compensation for dull jobs, stress and lack of close relationships' and to 'confirm one's existence' (*ibid.*). Shopping has also become a favourite free-time activity (*ibid.*). Erickson, also notes that people buy to fill a spiritual need (*ibid.*). All my respondents were in agreement with the notion that lack of spirituality is one of the factors that results in excessive consumption. Many religious leaders regard unrestrained materialism and consumerism of the contemporary world as an indicator of a "deep spiritual malaise," and a loss of the spiritual and moral aspirations in life and the cosmos (Northcott, 1996, p.36). The urge to consume is driven by "individualism" and an "expressivist culture" that replaces self-expression through morality and spirituality with self-expression through material acquisition (Northcott, 1996, p.73). McLaughlin & Davidson (1994, p.357), regard the seemingly innate urge for more, to be the urge for more life, more experience, more understanding and consciousness, which is the result of a divinely inspired dissatisfaction with whatever has been achieved. A misunderstanding of this urge has caused us to focus on the material realm (*ibid.*). When rightly understood, this urge can be redirected from the quantity of goods to the quality of life (*ibid.*). They reason that when basic needs are fulfilled, the urge for divine evolution eventually redirects the focus of our desire from material to spiritual. I would interpret what McLaughlin & Davidson have attempted to highlight in their writing is that we need to be reacquainted with our "spiritual urge" in order to be rid of our desire for material objects. We need to become aware of our own urge for divine evolution. Our desire for material objects, in my opinion is an acquired characteristic, while spirituality is innate. Our ancestors did not have as many material desires as we do today. Our desire for material objects has been enhanced from generation to generation through aggressive advertising and marketing campaigns. If we become aware that our urge to consume is one that is artificially induced, we will be better able to resist this urge. McLaughlin and Davidson (1994, p.358) are of the opinion that consumerism cannot be overcome by merely requesting people to stop consuming. People need to be inspired by a purpose of life that is noble and fulfilling (*ibid.*). This supports my reasoning for integrating a religious appeal in inducing pro-environmental behaviour.

Consumerism is spread through global modernisation carrying the message that one achieves happiness when one consumes, and that, the more the consumption the more the happiness (Northcott, 1996, p.73). The irony is that, happiness does not increase with affluence, as many past surveys have indicated (Northcott, 1996, p.73; Durning, 1994, p.45). One might have observed that individuals who lead spiritual lives tend to consume less while remaining happy and contented. One may also have noticed that satisfaction gained from material consumption is temporary. Once the initial thrill of purchasing something is over, we feel empty again and we quickly resort to some other purchase to fill that emptiness. With this in mind, I question

the general believe that has been ingrained in the minds of all of us that we need to consume more to be happy. I dare to suggest that we need to reduce consumption not only for the sake of the environment and future generations, but also for the sake of our “true” happiness. We need to first acknowledge the spiritual origins of these feelings of emptiness; perhaps we need to give religion and spirituality a more important place in our lives. On a larger scale political decisions and environmental laws based on religion and spirituality is necessary. At this point, it may not be so clear to the reader if it is spirituality or environmental behaviour that I am attempting to promote in this thesis. I intend to promote both. However, the underlying message that I wish to convey is that if at all religion’s contribution to environmental behaviour modification is to be recognised, a certain degree of acceptance of religion and spirituality as the basis of our lives is necessary. However, it is still important to note that a person does not necessarily have to be religious or spiritual to adopt an environmental behaviour, as they will adopt the behaviour anyway, if it appeals to their conscience.

Feasibility Of This Solution Strategy?

Many would naturally question the practicality and feasibility of this solution strategy. The success of this strategy is likely to be dependent on four conditions. First, the willingness of clergies and spiritual teachers to encourage environmental behaviour. Second, the willingness of clergies and spiritual teachers to practise the environmental behaviours that they preach. They would need to set an example that others can follow. Third, the willingness of environmentalists, governments and politicians to incorporate a “spiritual appeal” in their solution strategies. Fourth, the willingness of people to live more spiritually, or at least to adopt the required environmental behaviours. The brief listing of some of the pro-environmental teachings in religion that I have given in earlier sections of my paper is admittedly far from complete. I have merely shown that signs of the first factor (willingness among clergies and spiritual teachers) exist. Further research would be necessary to determine exactly the feasibility of this strategy.

However, the success of this strategy can be enhanced if we establish and improve areas where clergies, environmentalists, governments and the public can work together to accomplish a common objective, and that is to control population growth, reduce consumption and eliminate the consequent problems. Each party may have a different way of viewing the problem, and a different idea on the best method of addressing it, but the important thing is a common goal. This would therefore require a certain degree of co-operation, tolerance and exchange of information among the four parties. From my analysis I identified the following aspects that may enhance the feasibility of this strategy:

i. A Need To Let Go The Tradition Of Blaming Religion

Historically, not only has religion been associated with anthropocentrism and environmental destruction, but also seen as a major cause of population problems. It seems pointless to me to continue with this tradition of blaming religion to have caused problems without supporting such claims with valid evidences of the quantity of problems actually caused. I see a need to let go of this tradition, and to focus instead on a solution strategy. Often, we read extreme statements such as the one made by Crawford (1995, p.165). Noting how Roman Catholics have opposed family-planning efforts in Mexico, Kenya and Philippines, Crawford regards religion to be the core of the population crisis. Similarly, religion has been associated with environmental destruction. I find that such statements are often not supported with any concrete evidence. They do not say how many people actually decided to have many children because of their religious believes. Moreover, there are many reasons besides religion that influences an individual’s decision to have children. For example, in some less developed countries, children are viewed as an asset, because they work and generate income for their families (Hartmann, 1987, p.x). Parents also look upon their children as a source of support

and security at their old age (*ibid.*). In the past, the governments of Chad, Ivory Coast, Gabon, Guinea Bissau and Mauritania in sub-Saharan Africa, did not support family planning and had adopted pronatalist policies, believing that a growth in population was necessary to ensure national development, prestige and security (Hartmann, 1987, p.50). The Malaysian government had previously proposed a fivefold increase in population in the following 115 years, in the believe that this will facilitate economic growth (*ibid.*). On a more general level the factors that influence population growth in an area may include cultural believes or a lack of education. Similarly, an individual's attitude towards the environment is influenced by various factors. Therefore, my view is that to regard religion as the centre of the population crisis or ecological crisis is somewhat unjust. What I am pointing out here is that one needs to first determine the actual percentage of the religious contribution to a problem before making general accusations. Even if such accusations can be verified, it would be of little interest to me. I suggest that it is no longer necessary to dwell on past environmental problems caused in the name of religion. Instead, it is more beneficial if we look into ways on how we can rectify the situation, and that is by not only identifying what is anti-environment in religions, but also what is pro-environment in religions. In the following step, we need to bring about a resurgence of the pro-environmental qualities in religions.

ii. A Need For Education

A need for ecological education among clergies and spiritual education among environmentalists and politicians is noted. Although from one viewpoint it is justifiable why some clergies and spiritual teachers don't regard population number as problem, from another viewpoint, the fact that they do not consider population number as a threat to the environment, could be due to a lack of ecological knowledge. Ecological education may help clergies in widening their knowledge; consequently, their perception of the problem. It may seem to the reader that I am somewhat inconsistent in my discussion. I highlight that the population problem is not one that has a single solution, but one that that needs to be approached from various angles. From a spiritual point of view, it is sad, that humankind have resorted to live economically and socially segregated in the same planet that we share biologically and ecologically. One may say that an ideal human society is one where people live united in all aspects, as a single human society. Although not totally impossible, it is highly unlikely that such a state of serenity will fall upon the planet in the near future. Until the period when humanity will reach a stage where legal and economical systems are based on total equality and sharing, and until this gives rise to an ideal human society, we need to resort to other means and strategies to address the problems in hand. Therefore, the need for population control still stands. In one particular case in my study a clergy acknowledged that people consumed more than they should, but he did not regard that as a problem. One may attribute this also to a lack of ecological knowledge. For clergies and spiritual teachers to efficiently spread environmental awareness, I stress again that ecological education is necessary.

Oelschlaeger (1994, p.5), notes that generally environmentalists are sceptical to the idea that religious narratives can be a solution to the ecological crisis. The reasoning given by Environmentalists, according to Oelschlaeger, is the Judeo Christian theory of dominion over earth leading to a disbelieve of humans as an integral part of the ecosystem (*ibid.*). Since only Judeo Christianity is mentioned, I note that such notions may be considered insubstantial. Perhaps this indicates that religious theories have not been given careful and thorough consideration. If this is so, I suggest that there is a need for religious or spiritual education among environmentalists and politicians.

I note one example of constructive exchange of knowledge that may help in addressing the population problem (see Figure 3). Environmentalists may provide knowledge on ecology, and clergies and religious teachers may provide knowledge on ethics and morality. This will

ensure that clergies have the required scientific knowledge to base their reinterpretations of religion on, and attempts to control population by governments or environmentalists are done ethically, with respect to individuals' rights and human dignity. This will help in avoiding the enforcement of involuntary population control methods, as has been done in the past.

iii. A Need To Review And Reinterpret

There are signs that indicate that religious beliefs need to be reviewed and reinterpreted, to rectify past misunderstandings, to clarify uncertainties, to make religion adaptable to new problems and to make religion practicable in modern times. One example is the possibility of a misunderstanding of scriptures resulting in population problems and environmental destruction. Considering the view that "high population" only appears to be a problem, it is understandable that most of my respondents denied that their respective religions contributed to the population problem. I can also relate to the fact that it would be hard for a 'man/woman of God' to believe that the words of God may have caused any kind of environmental destruction. One who has faith in God would naturally refuse to believe that He would intend for us to destruct the very terrestrial environment that was designed to support us in the first place. However, as expressed by a few of my respondents and other religious commentaries, it is very likely that we have misunderstood scriptures. One also needs to recognise that ancient interpretation of scriptures was suited to contemporary situations; therefore, not all will be applicable or practicable in the modern world especially when we are faced with global problems. Therefore, I stress that it is important for old scriptures and religious beliefs to be reviewed and reinterpreted when necessary.

iv. A Need To Enlist And Publicise Religious Environmental Ethics

When there are indications of lack of awareness of pre-existing environmental ethics, or lack of clarity of environmental ethics within the religions, I suggest that this indicates a need to identify and enlist these ethics. Some of the initial puzzled response from some of my respondents when faced with environmental questions, perhaps indicates a lack of awareness of the environmental ethics within their respective religions. Some of them even admitted that these problems were not something they thought about, from a religious perspective. The link between religious views and human consumption is sometimes not directly visible. This is noted in instances where religious views regarding environmental protection is given without mentioning consumption. If a person does not personally chop down trees from virgin forests, or discard toxic substances into the environment, it does not necessarily mean that he or she does not have a part to play in environmental pollution and destruction. Every item that we purchase, every product that we consume however small or trivial it may appear to be, has its environmental consequences, if we take into account all the other factors involved such as the origins of the raw material, its transportation, its production, its packaging, the energy used, etc. Therefore when religions speak of protection of the natural environment, it is important to make known the indirect links with human consumption. This suggests that there is a need to identify, clarify and enlist the environmental ethics in the various religions. These ethics may be included as part of sermons and religious speeches addressing the public. A section could be devoted to 'Religious Environmental Ethics' in text books on Environmental Ethics, Environmental Behaviour or Sustainable Development. 'Religious Environmental Ethics' can also be made a part of the curriculum of environmental education in schools and universities. In the case of the consumption problem, we need to identify, make known and publicise the religious views of the problem (direct and indirect), and call on to people to develop their spirituality instead of indulging in lavishness and excessive material pleasures. In the case of the population problem, we need to make known the various religious views, surrounding procreation and emphasise the call for responsible parenthood. People also need to be re-educated that some old views related to procreation are not applicable anymore in an overcrowded world.

v. A Need For Righteous Objectives

The objectives of population control for monetary reasons, may in some instances be conflicting with religious views, since religions tend to encourage charity, equality and simplicity. Such objectives may also in some instances defy the objective of reducing consumption. It is an irony that despite the problems it causes, consumption is often regarded as an indicator of economic development and hence regarded as a positive sign. Durning (1994, p.41), notes that the primary objective of national economic policies is to increase consumption, and this is almost universally positively regarded. Questioning the term 'development,' it seems to me that its meaning today has been restricted to one that means financial prosperity alone. This gives rise to the notion of an "optimum population." As narrated by Ganguli (1969, p.202), when maximising per capita income is the major aim of a country, the appropriate population level may be called "income-optimum population." "From the economic point of view, which is practically the only point of view taken into consideration by deliberations of international agencies, the optimum population is that which makes possible the greatest production and greatest consumption of goods per person" (*ibid.*). I note that if this is the scenario, the objectives of limiting population growth contravenes the objectives of limiting consumption. I note that population control efforts that is based purely on monetary objectives, may not receive much support from a religious viewpoint, and perhaps not also from an environmental viewpoint. I assert that in order to ensure a truly sustainable planet through religion and spirituality, we need to have objectives that are righteous. Therefore, population control should be mainly for reasons such as ecological limits, protection of natural environments and to overcome social problems.

Importance of Religion And Spirituality In Solution Strategies

Although I base my conclusions on mere signs of a possibility of this approach, I assert that it is important to incorporate religion and spirituality to accomplish a wholesome multidimensional approach in addressing the global consumption and population problems. I highlight to the reader that the idea of incorporating spirituality in solution strategies to global environmental problems is not one that is new. Many scholars have given commentaries that not only stress the importance of religion and spirituality as a solution strategy but indicate that it is essential to bring about the required changes in behaviour. Robert Muller, who worked for the United Nations for over 30 years, speaks of a need for a global spirituality, and in his book, *New Genesis*, he states "I believe that the religions have many of the answers which the political world is seeking, because they have been there many more years than the United Nations" (Muller, 1982, p.134). People tend to obey laws and regulations passed by governments even if they do not agree with it, but if they see that they can get away without getting caught, they break the laws (Masri, 1992, p.20). God's laws on the other hand are accepted by people's free will (*ibid.*). "The worldly-wise experts can help us with facts and figures, but it is faith that can bring about within us a change of heart and a revolution in thought" (*ibid.*). Oelschlaeger (1994, p.6), believes that religion offers an irreplaceable function in the process of resolving the environmental crisis. One role is in motivating people to change daily habits that are ecologically damaging (*ibid.*). The second function is to encourage the election of political leaders who are genuinely concerned about environmental problems (*ibid.*). Scientific predictions of environmental crisis alone do not possess the motive power to change human behaviour and disposition towards nature (Northcott, 1996, p.37-39). Northcott asserts that "... only the recovery of a spiritual, moral and cosmological awareness of our place in the natural order, and of the independent ethical significance of that order rooted in particular religious traditions, can enable our civilisation to begin to shift its priorities and values in a more ecologically harmonious direction" (*ibid.*). Northcott points out how in modern Western societies, communal life and private morals are sought without the guidance of religion, and without acknowledging God (*ibid.*). This results in an increasing

unwillingness to acknowledge the moral responsibilities and duties that sharing a planet entails (*ibid.*). Further consequences of this are that our feelings of responsibility towards future generations, to not consume, waste and pollute the planet's resources, no longer restrain our quest for individual satisfaction, material comfort, pleasure and luxury in the present (*ibid.*). Northcott also asserts that environmental protest without spirituality will not endure.

“Rebellion against one kind of establishment is no basis for a new social and moral order. The hope that we can find peace in human life and harmony with the natural world needs the anchor, the spiritual sustenance, of the religious traditions of the world, for without that transcendent reference, environmental protest is still at risk of cynicism and boredom, despondency and hopelessness” (Northcott, 1996, p.38-39).

I note that these views emphasise that incorporating religion and spirituality in our solution strategies is important. Moreover, there are signs that religion and spirituality is becoming increasingly important to people. Northcott (1996, p.37) states that there appears to be a revival of religious and spiritual interests, as we approach the end of the twentieth century. He further narrates,

“Religious fundamentalism and new religious movements abound in every part of the world, while Christianity, Islam, Hinduism and Buddhism are undergoing dramatic revivals in many parts of the non-Western world. ... many young people in the West are becoming vegetarian and increasingly look to relations with the natural world, and the animal world, as a sphere of meaning and spiritual purposiveness, rejecting the ‘work and spend’ ethic of modern consumerism. Indeed the environmental movement in its more radical manifestations involves a deep quest for wisdom, ritual order and spiritual value in nature. It is not then simply a question of religious special pleading to suggest that the spiritual vacuum and the ecological crisis of modern civilisation are closely related” (Northcott, 1996, p.37).

Since it is evident that religions do offer a wealth of knowledge concerning environmental ethics, and to some degree there is an acceptance that religion and spirituality is necessary to bring about behavioural changes, environmental movements all over the world need to look into the possibilities of incorporating these teachings as part of their solution strategy in addressing global problems such as excessive consumption and over population. In other words, spiritual development needs to be made a component of sustainable development for a true sustainable planet.

Suggestions for further research

As a sequel to this research, I propose an extensive investigation of the willingness of clergies to encourage environmental behaviour in other parts of the world, especially in countries that are religiously inclined. The environmental ethics in every existing religion also needs to be identified. A wholesome research should also sought to find out people's response to such religious environmental ethics, and the willingness of environmentalists and governments to incorporate these ethics as part of their solution strategy. In such research, it is important to note that the discussed problems and its religious implications may vary from country to country, and sometimes even within a country, due to varied local influencing factors. It is also important to note that a clergy's education level, personal experiences and country of origin may to some extent influence their overall knowledge, and therefore may also influence their disposition towards environmental issues. A research such as this if conducted on a transnational level, needs to take into account these factors.

NOTES

- 1 Causal-loop diagram symbols: The arrow symbol (\rightarrow) indicates causation. The item at the tail of the arrow causes a change in the item at the head of the arrow. The (+) sign near the arrowhead indicates that the item at the tail of the arrow and the item at the head of the arrow change in the same direction. If the tail increases, the head increases. The sign (-) near the arrow head indicates that the item at the tail of the arrow and the item at the head of the arrow change in the opposite direction. If the tail increases, the head decreases. The symbol \textcircled{R} found in the middle of a closed loop, indicates that the loop continues going in the same direction, often causing either systematic growth or decline, moving away from an equilibrium point. This is called a positive feedback loop or a reinforcing loop. The symbol \textcircled{B} found in the middle of a closed loop, indicates that the loop changes direction, causing the system to move toward equilibrium. This is called a negative feedback loop or a balancing loop (Adapted from Roberts et al. 1983, p.56).
- 2 The biblical text, referred to as a theory of domination over nature, is Gen.1:28: “And God said to them 'Be fruitful and multiply, and fill the earth and subdue it; and have dominion over the fish of the sea and over the birds of the air and over every living thing that moves upon the earth’” (Harrison, 1999, p.86)
- 3 Upanishad - any of a group of philosophical treatises contributing to the theology of ancient Hinduism, elaborating on the earlier Vedas (American Heritage College Dictionary, Third Edition, 1997, p.1482).
- 4 Crawford (1995, p. 221) defines *dharma* as morality, duty, law or righteousness, while Jhingran (1989, p.205) refers this word to mean duty.
- 5 Crawford (1995, p. 221) refers to *Mahabharata*, as one of India’s two great epics that encompass discussions of morals.
- 6 Veda(s) - any of the oldest Hindu sacred texts, composed in Sanskrit and gathered into four collections. (American Heritage College Dictionary, Third Edition, 1997, p.1495)
- 7 Karma - the total effect of a person’s actions and conduct during the successive phases of the person’s existence, regarded as determining the person’s destiny in Hinduism and Buddhism. (The American Heritage College Dictionary, Third Edition, 1997, p.740)
- 8 Crawford (1995, p.221) defines *asrama* as ‘stage of life’.
- 9 Crawford (1995, p.221) refers to *himsa* as ‘causing pain or killing out of anger’.
- 10 Crawford (1995, p.221) refers to *bhu-rna* as obligations to the ‘Bhumi’, humankind’s terrestrial home.
- 11 Quran [Arabic: *qur’³n*], Koran - the sacred text of Islam, considered by Moslems to contain the revelations of God to Mohammed (The American Heritage College Dictionary, Third Edition, 1997, p.753)
- 12 *Sharia / al-Shariah / (Shariite)* - The Islamic code of law based on the Koran (The American Heritage College Dictionary, Third Edition, 1997, p.1253)
- 13 *Sunnah* - The way of life prescribed as normative in Islam, based on the teachings and practices of Mohammed and on exegesis of the Koran; Mohammed’s way of life viewed as a model for Moslems. (The American Heritage College Dictionary, Third Edition, 1997, p.1361)
- 14 Musallam (1978, p.1265) refers to *hadith* as a report of an act or saying of the Prophet.

REFERENCE

- Anderson, Barbara A. and Brian D. Silver. 1990. "Growth and Diversity of the Population of the Soviet Union." *The Annals of the American Academy of Political and Social Science* 510: 155-177.
- Arraj, James. 1989. *Is There A Solution To The Catholic Debate on Contraception?* USA: Inner Growth Books.
- Brown, Lester R., Christopher Flavin and Hilary French. 1998. *State of the World 1998: A Worldwatch Institute Report on Progress Toward a Sustainable Society*. New York/London: W.W. Norton & Company.
- Brown, Lester R. and Hal Kane. 1994. *Full House: Reassessing the Earth's Population Carrying Capacity*. The Worldwatch Environmental Alert Series. New York/London: W.W. Norton & Company.
- Brown, Robert McAfee. 1969. "Humanae Vitae: A Protestant Reaction". In *Contraception: Authority and Dissent*. (ed.) Charles E. Curran, 193-215. New York: Herder and Herder.
- Callahan, Joan C. 1998. "Birth Control Ethics." *Encyclopedia of Applied Ethic* 1:335-351. USA: Academic Press.
- Chandrasekhar, S. 1968. "How India Is Tackling Her Population Problem." *Foreign Affairs* 47(1):138-150.
- Cohen, Joel E. 1995. *How Many People Can The Earth Support?* New York/London: W.W. Norton & Company, Inc.
- Coward, Harold. 1993. "Religious Responsibility". In *Ethics & Climate Change: The Greenhouse Effect*. (eds.) Harold Coward & Thomas Hurka, 39-60. Canada: Wilfrid Laurier University Press.
- Crawford, S. Cromwell. 1995. *Dilemmas of Life and Death: Hindu Ethics in North American Context*. New York: State University of New York Press.
- Dalai Lama and Jean-Claude Carrière. 1994. *Violence & Compassion*. New York: Doubleday, Bantam Doubleday Dell Publishing Group, Inc.
- Daly, Herman, E. 1996. *Beyond Growth: The Economics of Sustainable Development*. Boston: Beacon Press.
- Deen, Mawil Y. Izzi (Samarrai). 1996. "Islamic Environmental Ethics, Law, and Society." In *This Sacred Earth. Religion, Nature, Environment*. (ed.) Roger S. Gottlieb, 164-173. New York: Routledge. (Article originally published in 1990)
- Dhavamony, Mariasusai. 1995. "Hinduism." In *Dictionary of Fundamental Theology*. (ed.) René Latourelle, 427-432. New York: The Crossroad Publishing Company.
- Domènech, Josep M., Seamus Dunn and Witold Tulasiewicz. 1993. "Catholicism and its Educational Mission." In *World Religions and Educational Practice*. (eds.) Witold Tulasiewicz and Cho-Yee To, 84-103. London: Cassell.
- Dorairaj, Kathleen. 1991. "The Modified Mucus Method in India." *American Journal of Obstetrics and Gynecology* 165(6, Part 2): 1977-1978.
- Durning, Alan Thein. 1994. "The Conundrum of Consumption." In *Beyond the Numbers: A Reader on Population, Consumption, and the Environment*. (ed.) Laurie Ann Mazur, 40-47. Washington, D.C./Covelo, California: Island Press.
- Eckberg, Douglas Lee, and T. Jean Blocker. 1989. "Varieties of Religious Involvement and Environmental Concerns: Testing the Lynn White Thesis." *Journal for the Scientific Study of Religion* 28(4): 509-517.
- Erickson, Rita J. 1997. *"Paper or Plastic?": Energy, Environment, and Consumerism in Sweden and America*. Connecticut, USA: Praeger Publishers.

- Esposito, John L. 1995. "Population Ethics: Religious Traditions, Islamic Perspectives." *Encyclopedia of Bioethics* Vol. 4: 1977-1981. New York: Simon & Schuster Macmillan.
- Flick, Uwe. 1998. *An Introduction to Qualitative Research*. London: Sage Publications Ltd.
- Ganguli, H.C. 1969. "Religion and the Population Explosion." In *Religious Pluralism and the World Community*, (ed.) Edward. J. Jurji, 193-221. Leiden, Netherlands: E. J. Brill.
- Greely, Andrew. 1993. "Religion and Attitudes toward the Environment." *Journal for the Scientific Study of Religion*.32 (1): 19-28.
- Gross, Rita. 1998. *Soaring And Settling: Buddhist Perspectives on Contemporary Social and Religious Issues*. New York: The Continuum Publishing Company.
- Guth, James L., Lyman A. Kellstedt, Corwin E. Smidt and John C. Green. 1993. "Theological Perspectives and Environmentalism Among Religious Activists." *Journal for the Scientific Study of Religion* 32 (4):373-382.
- Harrison, Peter. 1999. "Subduing the Earth: Genesis 1, Early Modern Science, and the Exploitation of Nature." *The Journal of Religion* 79(1): 86-109.
- Hartmann, Betsy. 1987. *Reproductive Rights and Wrongs: The Global Politics of Population Control & Contraceptive Choice*. New York: Harper & Row Publishers.
- Hayden, Tom. 1996. *The Lost Gospel of the Earth: A Call for Renewing Nature, Spirit & Politics*. San Francisco: Sierra Club Books.
- Hehir, J. Bryan. 1995. "Population Ethics: Religious Traditions, Roman Catholic Perspectives." *Encyclopedia of Bioethics* Vol. 4:1977-1981. New York: Simon & Schuster Macmillan.
- Howie, Peter W. 1991. "Breastfeeding: A natural method for child spacing." *American Journal of Obstetrics and Gynecology* 165 (6, Part 2):1990-1991.
- Ikeda, Daisaku. 1976. *Dialogue on Life: Buddhist Perspectives on Life and the Universe*. Tokyo: Nichiren Shoshu International Centre.
- Jhingran, Saral. 1989. *Aspects of Hindu Morality*. Delhi: Motilal Banarsidass Publishers Private Limited.
- Kanagy, Conrd L. and Fern K. Willits. 1993. "A Greening of Religion? Some Evidence from a Pennsylvanian Sample." *Social Science Quarterly* 74(3): 674-683.
- Kaplan, Lawrence, J. and Rosemarie Tong. 1994. *Controlling Our Reproductive Destiny: A Technological and Philosophical Perspective*. London: Massachusetts Institute of Technology Press.
- Kwitny, Jonathan. 1997. *Man of the Century: The Life and Times of Pope John Paul II*. New York: Henry Holt and Company, Inc.
- Louis, Isabelle. 1996. "The Proposed Highland Highway Project:An Environmental Nightmare." In *State of The Environment in Malaysia*. (ed.) Ong Beng Gaik, 78-85. Malaysia: Consumers' Association of Penang.
- Masri, Al-Hafiz B.A. 1992. "Islam and Ecology" In *World Religions and Ecology: Islam and Ecology*. (eds.) Fazlun Khalid and Joanne O'Brien, 1-24. London / New York: Cassell Publishers Limited.
- McLaughlin, Corinne and Gordon Davidson. 1994. *Spiritual Politics: Changing the World From the Inside Out*. New York: Ballantine Books.
- Meadows, Donella H., Dennis L. Meadows and Jørgen Randers. 1992. *Beyond The Limits: Global Collapse or a Sustainable Future*. London: Earthscan Publications Ltd.
- Muller, Robert. 1982. *New Genesis: Shaping A Global Spirituality*. New York: Doubleday & Company, Inc.

- Musallam, Basim F. 1978. "Population Ethics. Religious Traditions: Islamic Perspectives." *Encyclopedia of Bioethics*. Vol. 3: 1264-1269. New York: The Free Press, A Division of Macmillan Publishing Co., Inc.
- Nasr, Seyyed Hossain. 1993. *The Need for a Sacred Science*. United Kingdom: Curzon Press Ltd.
- Noonan, John T. Jr. 1986. "Contraception." In *The Westminster Dictionary of Christian Ethics* (eds.) James F. Childress and John Macquarrie, 124-126. Philadelphia: Westminster Press.
- Northcott, Michael, S. 1996. *The Environment & Christian Ethics*. New York: Cambridge University Press.
- Novak, Michael. 1969. "Frequent, Even Daily, Communion" In *The Catholic Case for Contraception* (ed.) Callahan, D. New York: Macmillan.
- Oelschlaeger, Max. 1994. *Caring For Creation: An Ecumenical Approach to the Environmental Crisis*. USA: Yale University.
- Ouis, Soumaya Pernilla. 1998. "Islamic Ecotheology Based on the Quran." *Islamic Studies* 37(2): 151-181. Pakistan: Islamic Research Institute. International Islamic University.
- Paul II. 1991. "Encyclical Letter *Centesimus Annus*" Given in Rome, at Saint Peter's, on 1 May, the Memorial of Saint Joseph the Worker, in the year 1991. http://www.vatican.va/holy_father/john_paul_ii/index.htm. (10 Sept. 1999).
- Paul VI. 1967. "*Populorum Progressio*, Encyclical of Pope on the Development of Peoples March 26, 1967" http://www.vatican.va/holy_father/paul_vi/encyclicals/index.htm (10 Sept. 1999)
- Paul VI. 1968. "*Humanae Vitae*. Encyclical of Pope Paul VI on the Regulation of Birth". *The Papal Encyclicals 1958-1981*. USA: Mc Grath Publishing Company, p.224-236.
- Queenan, John T. and Kamran S. Moghissi. 1991. "Natural Family Planning: Looking ahead." *American Journal of Obstetrics and Gynecology* 165(6, Part 2):1979-1980.
- Queenan, John T. Victoria H. Jennings, Helena von Hertzen and Jeffry Spieler. 1991. "Natural Family Planning: Current Knowledge and New Strategies for the 1990s: Introduction." *American Journal of Obstetrics and Gynecology* 165(6, Part 2):1977-1978.
- Rao, K.L. Seshagiri. 1978. "Population Ethics. Religious Traditions: A Hindu Perspective" *Encyclopedia of Bioethics* Vol. 3: 1269-1272. New York: The Free Press, A Division of Macmillan Publishing Co., Inc.
- Rayan, Samuel. S.J. 1990. "Theological Perspectives on the Environmental Crisis". *Religion and Society*, Vol. XXXVII (2): 18-34. India: Christian Institute for the Study of Religion and Society Publications Trust.
- Renard, John. 1999. *Responses to 101 Questions on Hinduism*. New York: Paulist Press.
- Reynolds, Frank E. and Charles Hallisey. 1987. "Buddhism: An Overview." *The Encyclopedia of Religion* Vol. 2: 334-351. New York: Macmillan Publishing Company.
- Roberts, Nancy, David F. Andersen, Ralph M. Deal, Michael S. Garet and William A. Shaffer. 1983. *Introduction to Computer Simulation: A System Dynamics Modeling Approach*. Oregon, Portland: Productivity Press.
- Sebaly, Kim P. 1993. "Provision for Hinduism in Modern Education." In *World Religions and Educational Practice*. (eds.) Witold Tulasiewicz and Cho-Yee To, 33-53. Cassell: London.
- Shamsavary, Parisima, Gulam Nabi Saqeb and Mark Halstead. 1993. "Islam: State, Religion and Education." In *World Religions and Educational Practice*. (eds.) Witold Tulasiewicz and Cho-Yee To, 144-160. London: Cassell.

- Simon, Julian L. 1990. *Population Matters: People, Resources, Environment, and Immigration*. Brunswick, New Jersey: Transaction.
- Singer, Sanford S. 1994. "Birth Control." *Ethics* Vol. 1: 91-91. USA: Salem Press, Inc.
- Taylor, Steven J. and Robert Bogdan. 1984. *Introduction to Qualitative Research Methods: The Search For Meanings*. New York: Wiley-Interscience Publication, John Wiley & Sons Ltd.
- Toynbee, A. 1972. "The Religious background to the Present Environmental Crisis" *International Journal of Environmental Studies*. 3: 141-146.
- United Methodist Church. 1992. *The Book of Resolutions of the United Methodist Church*. (ed.) Neil M. Alexander. Nashville, Tennessee: United Methodist Publishing House.
- United Nations Population Fund. 1999a. "The State Of World Population 1999: 6 Billion: A Time For Choices." <http://www.unfpa.org/swp/1999/chapter1bchart.htm> (12 Oct. 1999).
- United Nations Population Fund. 1999b. "The State of World Population 1999. Chapter 2. Population Change and People's Choices: Population Growth and Environmental Concerns." <http://www.unfpa.org/swp/1999/chapter2e.htm> (12 Oct. 1999).
- Warwick, Donald P. 1995. "Population Ethics: Elements of Population Ethics: Is there a Population Problem?" In *Encyclopedia of Bioethics*. Vol. 4: 1956-1962. New York: Simon & Schuster Macmillan.
- White, Lynn, Jr. 1967. "The Historical Roots of Our Ecologic Crisis" *Science* 155 (3767): 1203-1207.
- Witten, Marsha G. 1995. "Where Your Treasure Is: Popular Evangelical Views of Work, Money and Materialism." In *Rethinking Materialism: Perspectives on the Spiritual Dimension of Economic Behaviour*. (ed.) Robert Wuthnow, 117-141. Michigan: William B. Eerdmans Publishing Company.
- Wogaman, J. Philip. 1995. "Population Ethics: Religious Traditions, Protestant Perspectives." *Encyclopedia of Bioethics*. Vol. 4:1994-1999. New York: Simon & Schuster Macmillan.
- Woodrum, Eric and Beth L. Davison. 1996. "Images of God and Environmentalism" *Research in The Social Scientific Study of Religion* 7: 75-93.
- World Commission on Environment and Development. 1987. *Our Common Future*. New York: Oxford University Press.
- Wylie, Turrell V. 1987. "Dalai Lama" *The Encyclopedia of Religion*. Vol. 4: 200-202. New York: Macmillan Publishing Company.

APPENDIX

Awareness of the environmental problems of population growth and consumption.

1. The United Nations projected that over the next 50 years world population will reach 9.4 billion, which is 3.6 more people than today. What is your opinion about this?
2. Environmentalists often talk of earth's limited carrying capacity in relation to human population growth. What is your opinion about this? (Often accompanied by explanation of the term 'earth's limited carrying capacity').
3. What is your opinion about people's consumption behaviour today?
4. Some say that at current levels of consumption, the earth may run out of some of its resources very soon. What is your opinion about this?

Awareness of the relationship between religious teachings and environmental problems.

1. Some have regarded religious beliefs to be a part of the population problem. Do you agree with this? Why? (Often accompanied with explanation and supported with examples or claims).
2. What are the official views that you know of relating to population growth?
3. What is your personal opinion about this?
4. Some say that the lack of spirituality is the reason for excessive consumption among people. Do you agree with this? Why?
5. What are the official views that you know of relating to consumption behaviour?
6. What are your personal views relating to people's consumption behaviour?
7. Do you think religion can play a role in solving some of these problems? How?

Openness to alternative interpretations / Flexibility / Adaptability of Religion

1. Some have suggested that sometimes religious teachings has to be reviewed and if necessary modified, in order to adapt to changing situations, especially when faced with environmental problems such as those that we have discussed. For example birth control is regarded as necessary to control population growth and therefore religious beliefs surrounding this issue need to be reviewed. Do you agree with this? Why?
2. Does the religion that you represent have such flexible features?
3. What is your personal opinion about birth control?

Willingness to encourage the pro environmental behaviour of birth control and moderate consumption.

1. Is it possible to discuss issues such as birth control and consumption within the church / temple / mosque? Has this been done before?
2. Have the public been included in such discussions?
3. Would you advice people to reduce their consumption for the sake of the environment?
4. In what ways do you think consumption can be reduced?
5. Would you advice people that they should limit the number of children for environmental reasons?
6. What methods of population control would you recommend?
7. Would you consider spreading similar environmental awareness through the media, education in schools and politicians?