

The Soul and Spirit in Animal-Human Experimentations: A Shi'a Muslim Metaphysical perspective

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Abstract

This article seeks to offer a Shi'a Muslim metaphysical perspective on the discussion on human and nonhuman combinations and creations. The issue of combining human-nonhuman material or producing human-nonhuman entities has sparked philosophical, ethical, scientific and legal debate. The debate perhaps represents those natural emotions in human beings when embarking on a new discovery: curiosity, exploration, excitement and concern. What is not always considered is the metaphysical enquiry to this discussion. A being, whether human or animal, is multi-dimensional in nature yet its non-rational processes pertaining to the soul and spirit appear to be largely ignored. Is there a purpose to its development? What happens to the identity and self-consciousness of a being when it is changed? It is these issues which will primarily be considered in this article. As a secondary implication, the article is suggestive of using a metaphysical approach in medical and ethical decision-making, particularly with regards to the nature of human life.

Keywords: Animal; Bioethics; Embryos; Human Being; Human and Nonhuman Creations and Combinations; Islam; Metaphysics; Muslim; Shi'a; Soul; Spirit.

Introduction

"To advance human good and avoid harm, biotechnology must be used within ethical constraints. It is the task of bioethics to help society develop those constraints and bioethics, therefore, must be of concern to all of us." (www.bioethics.gov.uk).

Edmund D. Pellegrino

Chairman, The President's Council on Bioethics

“Allah collected from hard, soft, sweet and sour earth, clay which He dripped in water till it got pure, and kneaded it with moisture till it became gluey. From it He carved an image with curves, joints, limbs and segments. He solidified it till it dried up for a fixed time and a known duration. Then He blew into it out of His Spirit whereupon it took the pattern of a human being with mind that governs him, intelligence which he makes use of, limbs that serve him, organs that change his position, sagacity that differentiates between truth and untruth, tastes and smells, colours and species. He is a mixture of clays of different colours, cohesive materials, divergent contradictories and differing properties like heat, cold, softness and hardness...” (Al-Radi 1986, Sermon 1)

Ali b. Abi Talib

1st Shia Imam, cousin and son-in-law of Prophet Muhammad, 4th Rightly-Guided Caliph

There is wide acceptance amongst biomedical scientists and organisations that embryonic stem cell research potentially promises beneficial treatment for serious health conditions such as Alzheimer's, Motor Neuron and Parkinson's disease, for which at present there is no effective therapy (The Wellcome Trust, Memorandum 6). Whilst some research can be performed on spare embryos in in-vitro fertilization treatment, there remains a grave shortage of human eggs for such research. For continuing research, embryos are an important source and medium.

As such, there is increasing debate surrounding the obtaining of human eggs and embryos (The President's Council on Bioethics). It is felt that the creation of animal-human embryos is a way of addressing such a shortage and allowing vital research to continue. Fergus Walsh of BBC news wrote in an article entitled 'UK's first hybrid embryos created' dated 1st April 2008 that

“Scientists at Newcastle University had created part-human, part-animal hybrid embryos for the first time in the UK. The embryos survived for up to three days and are part of medical research into a

range of illnesses...they were created by injecting DNA derived from human skin cells into eggs taken from cows ovaries which have had virtually all their genetic material removed...the Newcastle team say they are using cow ovaries because human eggs from donors are a precious resource and in short supply...the hybrid embryos are purely for research and would never be allowed to develop beyond 14 days when they are still smaller than a pinhead."

Furthermore, an article in BBC News entitled 'MP's back hybrid embryo research' dated 19th May 2008 stated,

"The (British) government has survived two big challenges to its controversial plans to change the law on embryo research for the first time in 20 years. A cross-party attempt to ban hybrid human animal embryos was defeated on a free vote, by 336 to 176...the bill would allow regulated research using hybrid or "admix" embryos, where the nuclei of human cells are inserted into animal eggs...And, a separate attempt to ban "pure" hybrid embryos that would mix a human egg with animal sperm or vice versa, was also defeated in the Commons by 286 votes to 223, a government majority of 63."

Considering that the focus of this article is the United Kingdom, we would like to question whether the reasons provided by scientists to perform such experimentations are legitimate and ultimately, whether an animal-human creation would be in the best interests of the United Kingdom. This particular worry is magnified when we consider that the United Kingdom is not a signatory to the European Convention on Human Rights and Biomedicine 1999 which states, 'the creation of human embryos for research purposes is prohibited' (article 18.2). The main governing legislation for medical and bioethical advancements, the Human Fertilization and Embryology Act 1990, is not inclined to signing the Convention, despite pressure from religious organisations. In paragraph 18 of the fifth report by the House of Commons' Science and Technology Committee it states,

"It is this second point [i.e the creation of human embryos for research purposes is prohibited] that makes the Convention popular with some witnesses as it would reduce the number of embryos available for research, and would prohibit therapeutic cloning in

particular. CARE, a Christian charity, strongly believes that we ought to sign up to this Convention, 'otherwise the UK will continue to be apart internationally and forfeit the chance to influence in this area'."

The UK's position as an outsider to the Convention is substantiated by the voting results and parliamentary statements on the animal-human creation issue. In October 2008, 308 members of the UK Parliament voted against 183 members to reject an amendment prohibiting animals being inseminated with human sperm. This means an overwhelming majority within parliament were in favour of animals being inseminated with human sperm. This appears to reflect the sentiment since 2005 when the UK House of Commons' Science and Technology Committee stated, "While there is revulsion in some quarters that such creations appear to blur the distinction between animals and humans, it could be argued that they are less human and therefore pose fewer ethical problems for research than fully human embryos." (Conclusions and Recommendations, Select Committee on Science and Technology Fifth Report 2005, para 9) The trend towards experimentation has been substantiated by the fertility scientist, Lord Winston. In the BBC News report of 15th January 2008 entitled, 'Hybrid Embryos challenge fails in Lords', he stated, "95% of the scientific fraternity believe that embryonic stem cell research is necessary." However, this strongly empirical view of humanity can be questioned within its own dimension as well as the metaphysical one that we offer in this article.

The primary question is: *how do we judge the worth of a human being and animal?* (Straughan 1999, 11) Scientifically, if a human being is a 'pile of cells', less ethical problems are present in animal-human creations and combinations. Philosophically, however, if a human being possesses a kind of status that is independent to others (like being rational and moral) and this needs to be preserved, then what becomes of a monkey who can think on the same rational level as a human being? Does this distinction remain? Who defines the rational and physical boundaries of distinct types of human and animal groups? (Draft Human Chimera Prohibition Act of 2005,

s1373) Peter Singer appears to develop Jeremy Bentham's concept of 'pleasure and pain' arguing that anything capable of feeling pain deserves to be treated with moral worth (Singer 1975, 8). Kantians argue that anything possessing rationality and autonomy deserves to be treated as an end, not a means (Kant 1993, 36). Some argue human dignity means nothing as the term is constantly changed and shaped and even if an animal is considered to have the same kind of human dignity, then it should also have the same duties and responsibilities as a human being (UK Animal Procedures Committee 2001, 18-20).

A second question is: *If foreign body parts were transplanted into a human being or animal or an animal-human entity was created or an embryo was experimented on, how would this change affect that being's identity and self-consciousness?* (Pontifical Academy 2001) Transplanting the organ of a pig into a person so that the person can function may pose some ethical problems as to how that person should be categorised. Of course, if he/she functions like a human being, then he/she can be classed as a human being. However, others question what would happen when more vital organs and cells are transferred from an animal into a human being which could affect the very human identity of a person. In the case of reproductive cells, what happens if after procreation, an entity results which cannot be classed as entirely human? This may disrupt the origin of that entity and the descendant line of human from human becomes blurred. If an entity is created, how would that entity psychologically identify itself? If animal brain cells are transplanted into a human being, does the human lose his/her 'self'? If a being is given intrinsic value indicating upon the essential traits of a thing (e.g the humanness of a human), then perhaps this should not be modified seeing as it is crucial to the existence of that being. Yet if no real intrinsic value is given, a being's existence and self-awareness can be freely modified and developed.

The purpose of introducing these two questions is not just to offer a brief insight into the philosophical and ethical

aspects of the animal-human creation debate but to allow us to appreciate that such multi-dimensional questions require multi-dimensional answers. It is important to ask these questions, however far-reaching, because it is entirely possible for humanity to produce such unique advancements. Our aim in this exploratory article is to highlight the potential of classical Shi'i Muslim sources in answering the above questions. This is because at present there needs to be significantly more deliberation on creating a bioethical framework from the Quran and Sunnah and the Shi'i tradition has a lot to offer from its strong philosophical and metaphysical heritage. As such, we wish to introduce the metaphysical perspective to the aforementioned questions by discussing the soul and spirit and will use the United Kingdom's medical, political and legal developments as a case study. This article is a continuation of research on the practical application of the intellect, soul and spirit based on previous articles.

Considering that bioethics is concerned with the essence of human existence itself, our particular focus is on what forces drive our existence. We submit that investigating the soul and spirit are essential because they are key attributes of a being which contribute to its holistic development and existence. Not examining these would be a great failing on our part because we would have ignored the supra-rational processes that take place in a being.

As a final introductory note, explaining some key definitions is crucial. Whilst the term 'nonhuman' is used in this debate, the significant concern is over human and animal creations and combinations. We will therefore be referring to this combination though within the broad context of human and nonhuman material. Thus, for inclusiveness and relevance, the term 'being' will be used throughout this paper. We have defined 'being' as any living organism possessing an actual or potential state of existence, consciousness and life. Though this includes both human beings and animals, our focus is on human beings - whether as fully-fledged beings or a potential beings (such as an embryo or foetus). Two further definitions

are necessary. A 'Human-Nonhuman Chimera' is a biological organism that is made up of genetically distinct population of human and nonhuman cells. In this context it is possible to define a 'Human-Nonhuman Hybrid.' This is a biological organism created through the general use of cells of different human and nonhuman origins.

Secondly, human and nonhuman combinations and creations are wide-ranging and includes all possible combinations from minimal embryo mixing to transplantations of human and animal organs to actual human-nonhuman created entities. This begins from the current and likely combination which is being debated at the moment. As an article in BBC News dated 19th May 2008 entitled 'Q&A Hybrid Embryos' neatly summarizes,

"This is a hybrid embryo which is a mixture of both human and animal tissue. It involves transferring nuclei containing DNA from human cells, such as skin cells, into animal eggs that have had almost all of their genetic information removed. The resulting cytoplasmic embryos - known as admixed embryos - are more than 99% human, with a small animal component, making up around 0.1%. The embryo would be grown in the lab for a few days, then harvested for stem cells - immature cells that can become many types of tissue."

The article continues,

"There are other types of hybrid embryos as well, although research into these alternatives is not thought to be at such an advanced stage. They include 'true chimeras' - this is the addition of one cell from an animal embryo to a human embryo. The subsequent embryo is made up of cells that are either wholly human or wholly animal. 'Transgenic human embryos' - this is a human embryo which has been genetically modified to contain a small amount of animal DNA, for instance one or more animal genes. Each cell would have the usual complement of around 20 000 human genes, and a couple of animal ones. And finally a 'True hybrid' - this is the fertilisation of a human egg by an animal sperm or vice versa. The resulting embryo would be approx 50% human and 50% animal."

The metaphysical perspective discussed in this paper will have all of these combinations in mind.

Finally, all definitions and translations of Arabic to English words are included within this article but we would like to emphasise one definition. The definition of the Arabic word '*nafs*' is an elusive word but the most accurate translation is 'self' or 'soul.' We will at times use these two translations interchangeably but we will show that the 'self' is a more appropriate translation. This is because we believe it has relevance in moral and ethical discussions that may not be rooted in theology or religion.

The Intellect

The metaphysical enquiry rarely appears in practical moral and ethical decision-making perhaps because of its apparently non-rational nature which some may consider too esoteric. For example, one does not easily find spirituality as a significant consideration in hospitals for patients coming to the end of their lives. At this point when doctors are either trying to save lives or advising the patient on the remaining length of their life, issues such as existence, purpose, consciousness, worth, celestial future and inner peace are rarely dealt with in any considerable depth. This is a travesty considering that human beings are multi-dimensional creatures possessing supra-rational thought processes which are used just as much as rational processes (Abbas and Panjwani 2008, 113) So, embarking on research of human-nonhuman combinations requires us to understand a being's supra-rational nature.

However, it is precisely the terms 'metaphysics', 'rationality' and 'empiricism' which are juxtaposed against each other to show the limit of the other, often narrowing our perspective of investigation. We argue that this reductionist epistemological method closes many doors of analysis – particularly those concerned with the very essence and ontology of our being. Intuition, inspiration, self-consciousness, reflection and more may not be 'empirically' observable but they exist as fundamental traits of human nature. Metaphysics is the science of ontology – the science

that investigates the very forces that drive our being. These forces are non-cognitive as well as cognitive and may be directly connected to our biological make-up. It is this explicit connection which we feel can be explored by metaphysics.

In order for us to discuss the soul and spirit, a treatment of the notion of the intellect or *al-aql* is needed because it is closely related to both these entities. Our focus is on two lines of thought. The first is the supra-rational character of *al-aql* in helping us define personhood and self-consciousness. The second is in the realm of 'creative intellect' in creating new frameworks to deal with contemporary challenges.

The first analysis of the 'self' rests on the concept of *al-aql*, defined as 'the intellect.' This is because the intellect is closely related to the 'self' and is often a substitute for it. Although 'reason' is sometimes used to define *al-aql*, it is an inaccurate definition since it exists only as one of the components of *aql*, not *the* component of human thinking. According to notable Arabic lexicographers, *aql* refers to the 'intellect', which literally means the act of withholding, or restraining. Hence, according to B. Mandhur, *aql* means 'to restrain and forbid, and that is opposite to *humq* (stupidity) (Ibn Mandhur 1984, 326). In further elucidations of *aql*, we find the concept of 'differentiation.' For example, Thanwi describes that 'intellect means inborn spirit (mind) in a human being through that he knows, differentiates, and seeks benefit without harm (Al-Munjid, 34-8). And Isfahani states, "The Intellect applies to the power that receives knowledge. It also applies to beneficial knowledge acquired by intellect. According to the first definition, the Prophet (pbuh) has said: Allah has not created anything more precious to Him than intellect. As for the second definition, the Prophet hinted to it saying, "None has earned anything better than intellect. It either guides him towards the straight path or prevents him from the destruction (Isfahani 1983, 341-2)." Finally, Wehr states *aql* means: sense, reason, understanding, comprehension, discernment, insight, rationality, mind and intelligence' (Wehr 1979, 630).

When we examine the Quran, we find how important this 'differentiation' and 'guidance' are. Many verses impress upon people the idea of 'understanding' and 'reflecting' so that they may train the intellect to understand the Reality. For example, 'Behold! In the creation of the heavens and the earth, and the alternation of night and day, - there are indeed Signs for men of understanding' (Quran, 3:190) or and when they meet those who believe they say: We believe, and when they are alone one with another they say: Do you talk to them of what Allah has disclosed to you that they may contend with you by this before your Lord? Do you not then understand?' (Quran, 2:76). For those that do not exercise their intellect, God states: '...they have hearts wherewith they understand not, eyes wherewith they see not, and ears wherewith they hear not. They are like cattle, nay more misguided: for they are heedless (of warning)' (Ibid, 7:179). According to the Quran, not willing or not using the intellect results in a total covering over one's cognitive and non-cognitive faculties. This is why God mentions the hearts (*qulub*), eyes (*a'yun*) and ears (*adhanun*) and being heedless (*ghafilun*). Using the intellect is the unique distinction of a human being. That is why the Quran states, 'We have shaped mankind in the best mould' (Quran 95:4) and 'We bestowed the progeny of Adam specific honour and sanctity' (Ibid 17:70).

Therefore, when the Quran talks of guidance to human beings, it does not talk of it in a purely analytical or empirical sense. It is purposefully holistic and impels people to think and reflect making sure all of their intellectual faculties are harnessed for intuition and inspiration as well as analysis and criticism. This cognitive and non-cognitive range of the intellect is often expressed by certain entities which indicate upon a human being's 'self' or 'self-consciousness.' These entities are the intellect (*aql*), heart (*qalb*), soul (*nafs*) and spirit (*ruh*). Whilst linguistically they can mean different things, in reality each of these terms refers to one important entity – the self. The difference between them lies in how they relate to the self, give expression to it and manifest it.

The Shia Imams have elucidated the definition of *aql* by harmonising this range with transcendental ascension. In Ali b. Abi Talib's philosophical narrations, we find that the intellect is a creative and transcendental force in human beings. He says, 'The Quran consists of a book inscribed, between two covers; it speaks not with a tongue, it cannot do without an interpreter' (Al-Radi 1986, Sermon 125) and 'the prophet of a man is the interpreter of his intellect'. (Tamimi, vol. 1, p. 595, no. 2) He also says, 'the intellect is the messenger of the Real'. (Tamimi, vol. 2, p. 954, no. 33)

What these narrations show is the explicit connection between a human being's intellect and Divine revelation but more than that, there must be a dialectical and creative movement in interpreting the revelation. Revelation is not meant to remain stagnant nor can the intellect do without those aspects of guidance coming from accomplished inspiration and intuition. "The inner prophet of the intellect is meant to affirm revelation experientially, not dogmatically" (Shah-Kazemi 2007, 32). This can be substantiated by Ali b. Abi Talib's statement in *Nahj al-Balagha*: 'Then Allah sent His Messengers and series of His prophets towards them to get them to fulfil the pledges of His creation, to remind them of His bounties, to exhort them by preaching, to unveil before them the hidden treasures of the intellect...' (Al-Radi 1986, Sermon 1). This intellectual movement is meant to lead to a closer relationship with God. In this respect, the Sixth Shia Imam, Ja'far al-Sadiq, emphasised that one who possesses intellect has an intrinsic connection with God. He says *aql* is 'that by which the All-Merciful is worshipped and by which Paradise is earned'. (al- Kulayni 1978, *Kitab al-aql wa'l-Jahl*, pp. 11-13)

Creative intellectual frameworks

The definition of *al-aql* as above is to lay the groundwork for applying the intellect creatively to solve contemporary challenges, such as the one discussed in this article. Our focus on 'creative intellect' stems from the need to develop wholly new disciplines within Islamic sciences such as bioethics from the perspective of this all-embracing, transcendental and

diverse intellect. It is the bridge between the theoretical notion of al-aql as this unique and celebrated characteristic of humankind and its application to develop new frameworks. Our inspiration for emphasising the need for scholarly diversity stems from the personality of Ali b. Abi Talib. When one reads Nahj Al-Balagha (The Peak of Eloquence), a diverse compilation of Ali's sermons and sayings, one sees a multifaceted personality. Ali b. Abi Talib was not just a spiritual and political leader for Muslims. He was a literary figure exemplified by the eloquence of his sermons, a metaphysician - due to this deep understanding of the origin behind things, an ethicist - shown by his conduct and his frequent commentary on how justice and Godliness should be implemented in society and a commentator of the Quran, shown by his understanding of the verses of the Quran and how the revelation should be used in a human being's life. This shows the range of scholarship of the Imam but more than that, it shows that in order to solve society's problems, all kinds of scholarship are needed. Even when we look at the lives of the other Twelve Imams such as Al-Baqir and Al-Sadiq, who were scholars in law, science, ethics and more (and taught these fields to thousands of their students¹) as well as Zayn Al-abidin who produced the mystical work of *Al-Sahifa Al-Sajjadiyah* (the book of Sajjad) and the meta-legal work of *Risalat Al-Huquq* (Treatise of Rights), we find the need for holistic scholarship all the more necessary.

¹ Shaykh Al-Mufid comments that Al-Baqir (the 5th Shi'a Imam) had 'outstanding merit (fadl) in traditional knowledge (ilm), asceticism and leadership. He was the most renowned of them, the one among them who was most esteemed by both non-Shia (amma) and Shia (khassa), and the most able of them.' Mufid, M. *Kitab Al-Irshad - the Book of Guidance*. Muhammadi Trust. P393 With regards to Al-Sadiq (the 6th Shi'a Imam), Al-Mufid states he was, 'the most celebrated, the greatest in rank and the most illustrious of them in (the eyes) of both the non-Shia (al-amma) and the Shi'a (al-khassa). The people transmitted on his authority the religious sciences which travellers carried with them (around many countries) and thus his fame was spread throughout the lands. The learned scholars have transmitted on the authority of no other member of the House (ahl al-bayt) as much as they have transmitted on his authority...they were four thousand men.' Ibid, p408

We find these creative forces at play in sciences other than jurisprudence. Ayatullah Tabatabai, the notable *mufasssir* (commentator of the Quran), jurist and philosopher stated:

“In the same way that from the beginning Shi’ism played an effective role in the formation of Islamic philosophical thought, it was also a principal factor in the further development and propagation of philosophy and the Islamic sciences...In the same manner, in the order of intellectual sciences, there appeared many outstanding figures such as Nasir al-Din Tusi (who was a philosopher and mathematician) and Birjandi, who was also an outstanding mathematician. All the sciences, particularly metaphysics or theosophy (*falsafah-i-ilahi* or *hikmat-i ilahi*), made major advances thanks to the indefatigable endeavour of Shi’ite scholars. This fact can be seen if one compares the works of Nasir al-Din Tusi, Shams al-Din Turkah, Mir Damad and Sadr al-Din Shirazi with the writings of those who came before them.” [Tabatabai 1979, Part II] However, the question is can we point to these strong philosophical figures today?

Perhaps there is a need to use the foundational meanings of the intellect introduced above to develop new frameworks based on the Quran and Sunnah. It is precisely this impetus on which this article has been produced with the acknowledgement that revelation and tradition can offer some searching solutions to the challenges humanity faces. Is it the task of bioethics to in the words of Edmund D.Pellegrino, advance human good’ and in the words of Ali b. Abi Talib, acknowledge the ‘pattern of a human being’? Or is it the task to advance without acknowledging this internal balance that is required for humanity? We will now explore this internal balance pertaining to the soul and spirit within the field of animal-human creations and combinations.

The Soul

The concept of *al-aql* stems from the Shi’i understanding of the dialectical and evolutionary self (*nafs*) as connected to the spirit (*ruh*). Defining the self and spirit from classical Muslim dictionaries is difficult because the Quran has left these two entities as elusive and general (perhaps because it is the task of the individual to discover his/her ‘self’). It says,

“They ask thee concerning the Spirit (of inspiration). Say: “The Spirit (cometh) by command of my Lord: of knowledge it is only a little that is communicated to you, (O men!)’ (Quran, 17:85). We will, however, provide an understanding of these two entities. The soul can be defined in terms of a unique level of identity and self-consciousness that gives a being its distinct and actual essence. Soul has neither genus nor proprium but it is a living substance (*jawhar*). This can be explained by referring to a narration by the first Shi’i Imam, Ali b. Abi Talib, when he was asked about the soul by a faithful companion of his, Kumayl b. Ziyad. The following was the Imam’s reply:

“The souls are four, the growing vegetative soul, the sensually perceiving animal soul, the rational human soul and the Godly soul. Each one of these has five abilities and two properties:

- The vegetative soul has the ability to retain, absorb, digest, repel and growth. Its two properties are to increase and decrease. The origination of this soul is from the liver.

- The sensual animal soul has the ability to hear, see, smell, taste and touch. Its two properties are pleasure and anger. The origination of this soul is from the heart.

- The rational human soul has the ability of contemplation, remembrance, [attaining] knowledge, understanding and alertness; this is the closest resemblance to the souls of the angels. Its two properties are righteousness and wisdom. This soul does not have [a bodily] source from which it originates.

- The Godly soul has the ability to persist after annihilation, [to find] felicity in misfortune, dignity in humility, poverty in needlessness, and perseverance in calamities. Its two properties are pleasure and acceptance [at the decree of God]. The origin of such a soul is from Allah and to Him it returns. Allah the most exalted has said: and when I blow my spirit into him’ (The Quran 15:29) and ‘O contented soul return to your Lord being pleased with Him and He with you’ (Ibid 89:28). Reason will be at the centre of all” (Kashani 1980, 267).

This narration indicates that human beings can uniquely be characterised by the rational human soul but in turn possess animal and vegetative souls in a Godly manner that are progressive and evolutionary i.e human beings are capable of increasingly complex development. The question is whether scientists consider that animal-human creations and

combinations contain this interconnected dimension which is relevant to a being's development. We argue that this development occurs in two ways.

Identity

The first is the being's identity. This is constructed or formulated from each part of the soul that is connected to the being in an observable manner. As Ali b. Abi TALib explains, the vegetative soul originates from the liver and has the ability to retain, absorb, digest, repel and grow. The sensual animal soul originates from the heart and so on and so forth. Taking these two types of souls as initial examples, one can deduce that a person's identity can be constructed on the basis of his interaction with his natural environment. A person's ability to grow, see and touch directly contributes to the formulation of his identity. When we add the rational human soul to his development, we find that a person's knowledge and rational faculties inform who he\she is as a unique individual possessing a distinct physical and intellectual personAlity. So, a child growing up in a pollution-free environment and uses his\her time to read books may be healthier and well-informed than a child not growing up in such an environment. The former child would identify his\her complexities, intelligence and physical well-being allowing him to participate in a range of endeavours which would contribute to his personAlity. Perhaps he\she may play a wide range of sports or participate in an array of English and Maths quizzes thus making him a sportsman or professor, respectively. This example shows that the identity of a being is connected to his soul which in turn is connected to his bodily and intellectual functions. This internal co-relation of the soul and body, along with its outside environment, helps form a being's unique identity as an individual. In this way, the construction of a being's identity is both artificial (since its environment is changeable or accidental) as well as innate because regardless of the specific environment, a being will develop an identity due to the naturally developing faculties of the soul and body.

The second aspect of this development arising from the soul is a being's self-consciousness. By self-consciousness we mean a being's awareness of its supra-rational and metaphysical attributes that allow it to connect with the present transcendental reality around it, which is actually its origin and part of its essence (a being's origin and essence will be referred to as the 'spirit' which will be explained shortly). So, a being's soul does not merely operate in a vegetative, animal or rational manner but in a Godly manner as well, according to Ali b. Abi Talib. It is the Godly aspect of the soul which gives a being its natural transcendental consciousness. So, a being who is self-conscious is aware that within the deep recesses of its nature, there lies supra-rational processes that can be nurtured and used. If activated, they allow that being to examine its origin and true essence which is actually that being's natural course for development.

From the Quranic perspective, the creation possesses this inner transcendental awareness: 'Then set your face upright for religion in the right state-- the nature made by Allah in which He has made men; there is no altering of Allah's creation; that is the right religion, but most people do not know' (The Quran 30:30). This 'nature' has its origin from God and therefore, each being contains a link within itself to the transcendental reality. The rational faculties work in conjunction with a being's supra-rational and metaphysical processes to understand this link and capture the real presence of transcendence. According to sermon 1 of Ali b. Abi Talib, this is because transcendence has no limit or strict definition. He says:

"Praise is due to Allah whose worth cannot be described by speakers, whose bounties cannot be counted by calculators and whose claim (to obedience) cannot be satisfied by those who attempt to do so, whom the height of intellectual courage cannot appreciate, and the divings of understanding cannot reach; He for whose description no limit has been laid down, no eulogy exists, no time is ordained and no duration is fixed. He brought forth creation through His Omnipotence, dispersed winds through His Compassion, and made firm the shaking earth with rocks" (Al-Radi 1986).

Although the verse and sermon are within the monotheistic and Muslim conception of God, a detailed insight is given into the origin and type of metaphysical processes within creation. At the very least, there appears to be a deep level of consciousness within human beings that is linked to a vast transcendental origin. Yet this origin must be understood through both our rational and ultimately, supra-rational faculties. In terms of the Quran, God is this vast transcendental origin and is actively the cause and presence in everything from a thing's beginning to its end. It states: "He bringeth forth the living from the dead, and He bringeth forth the dead from the living, and He reviveth the earth after her death. And even so will ye be brought forth" (The Quran 30:19) and "He it is Who produceth creation, then reproduceth it, and it is easier for Him. His is the Sublime Similitude in the heavens and the earth. He is the Mighty, the Wise" (Ibid 30:27).

Here, we argue that perhaps scientific decision-making needs to be aware of the limit of human beings (both in terms of knowledge and power) in fashioning creation. Secondly, the idea that mankind has an overall purpose for its survival and stable growth. Thirdly, science is not merely an empirical subject but one which deals with the ontology of creation, which increases the scope of knowledge. These three points are relevant because they compel the scientist to deeply reflect when making a decision on experimentation and consider the holistic nature of existence.

Interestingly, the British Science Council recently redefined the field of science. It stated that, 'science is the pursuit of knowledge and understanding of the natural and social world following a systematic methodology based on evidence' (British Science Council, 2009). Contrary to many definitions which only emphasise the role of empiricism and observation, this definition brings the natural and social world closer together as well as includes a broader notion of evidence. One could possibly interpret 'evidence' as also including historical and philosophical deliberations, as long as they are systematic.

Growth

With these definitions in mind, al-aql operates in a comprehensive fashion harnessing the different souls or faculties of the soul to give expression to our growth as human beings. This growth is the returning of our 'selves' to our origin, the spirit. It is this dialectical movement which heightens our own self-awareness to what is ontological, real, and what makes us 'human.' But this requires us to give value to the multifarious nature of the intellect, its connections with our animalistic, vegetative and rational attributes and our internally evolutionary human composition. According to Şadr al-Din Muhammad Shirazi (famously known as Mulla Sadra), the notable Muslim philosopher, knowledge of the self which is the same as knowledge of the soul's Origin and Return, is the gnostic's or mystic's elixir, enabling him to reach the ultimate goal - which is human perfection. He says:

"[Philosophical] demonstration and the Quran agree entirely that learning the divine wisdom (al-hikmah al-ilahiyya) and the knowledge (ma'rifa) of the human self - I mean knowledge of the Origin and the Return - is to win endless subsistence, and rejecting it is the source of eternal loss...This knowledge makes man the possessor of a great kingdom, because it is the most magnificent elixir. It necessitates universal unneedingness (al-ghina al-kulli), the greatest felicity, becoming similar to the Furthest Good (al-tashabbuh bi'l khar al-aqsa) and assuming as one's own the character traits of God (al-takhallaq bi akhlaq Allah)" (Sadra 2002, 6:9)

Our key concern is how the soul of a human being is affected when there is a combined animal-human material in it or if medical experiments were performed on human or animal embryos? Would the combined material affect the entity and growth of the soul, whether it is separable or inseparable from the created or changed being? Let us examine the thoughts of Mulla Sadra as well as B. Sina further.

Concerning the soul's relationship with matter, B. Sina believes that the universal soul parts with a particular faculty of the soul as the material subject is ready to receive it in the process of its growth. Further to this, it is the soul that is responsible for creating motion within matter due to its love for re-ascending to God (Nasr 1993, 207). For Şadr al-Din Muhammad Shirazi, the soul is a power or a form that works on matter not directly but through other forms. This would

mean that the human soul is a power that operates through the vegetative and animal souls. According to him the human soul is not something that is separate from the body and enters within it rather it is something that is produced at a particular stage of the development of the body (Rahman 1976, 199).

In both scholars' comments, the process of growth of a being and the development of the soul within that being's growth are essential. The process of growth can be concerned with a being as a particular mental and physical entity following a line of development (e.g a pig is subject to its common animalistic developments as well as environmental and social developments, the latter being somewhat accidental in nature). The development of the soul can be concerned with the being's actual essence. So a human being or animal possesses their own unique level of identity and self-consciousness. Now, if the soul occurs when the material subject is ready to receive it or at a particular stage and yet experimentations have occurred, would it hinder the identity and self-consciousness of the being, since matter and self-consciousness can be inherently connected? We may find by observing the nature around us as well as in referring to monotheistic scriptures that God has created distinct groups with particular characteristics and functions, indicating upon detail and design. For example, The Quran states, "Verily, all things have We created in proportion and measure" (The Quran 54:49) and in Surah Rahman, God states, "That you may not be inordinate in respect of the measure. And keep up the balance with equity and do not make the measure." [The Quran, 55:8-9] If these are disrupted, then perhaps each being fails to naturally grow and complete itself, in terms of developing and expressing its unique identity and self-consciousness. This shows that animal-human combinations and creations are not merely concerned with material and rational attributes but metaphysical ones as well.

Perhaps a good example of a being's complex and purposeful development is the debate over when a foetus shows signs of life allowing it to be classed as a human being. In a BBC News article by Nick Triggle dated 21st May 2008

entitled abortion: The medical evidence' it stated, "the last time MPs got a chance to vote on abortion - changing the law in the process - was in 1990. Then, as now, the foetus' chances of survival were at the heart of the debate. The upper time limit was reduced from 28 weeks to 24 weeks because of evidence that more and more babies were surviving when they were born at that point. However, other doctors disagree with this limit and argue it should be reduced. Ultrasound pioneer Professor Stuart Campbell, from London's King's College Hospital, said while he was in favour of women having choice, he thought the limit should be reduced to 20 weeks. "Between 20 to 24 weeks the foetus is really quite advanced in terms of its nervous system. It has facial expressions, it can open its eyelids, it will react to a needle being put on its skin." And Professor Campbell, who produced scans four years ago of a 12-week-old foetus apparently walking in the womb, added: "It is developing at such a way that it deserves to keep its hold on life." ²

When we consider these medical opinions and advancements in light of Ali b. Abi Talib's detailed explanation of the depth and functionality of the soul, it can be argued that experimenting with embryos, allowing them to only develop to a particular stage or perhaps in the future, tampering with the appropriate and complex development of any kind of being is

² See the verses and hadith on the development and status of the embryo in Islam. For example: 'He created you (all) from a single person: then created, of like nature, his mate; and he sent down for you eight head of cattle in pairs: He makes you, in the wombs of your mothers, in stages, one after another, in three veils of darkness. such is Allah, your Lord and Cherisher: to Him belongs (all) dominion. There is no god but He: then how are ye turned away (from your true Centre)? [39:6], " Was (man) not a sperm which has been poured out?" (75:37), "We have fashioned the thing which clings into a chewed lump of flesh and We fashioned the chewed lump of flesh into bones then We clothed the bones with intact flesh " (23:14). And the hadith by fifth Shi'a Imam Muhammad al-Baqir (a) who states: "The stage of the fertilised ovum is forty days, the stage of the clot is forty days, the stage of the lump of flesh is forty days. When four months are completed the foetus's destiny and gender are determined. Subsequent to this it is another creature" (Al-Bahrani, 1999, 335).

an interference of that being's naturally developing metaphysical attributes which is directly connected to its physical development. Indeed, the Quran explicitly states the presence of God in the 'fashioning' of creation: "Was (man) not a sperm which has been poured out. After that he was something which clings, then (God) fashioned him in due proportion." (The Quran, 75:37-38)

The Spirit

Within this development of a being, another concept is also relevant and that is the 'spirit.' According to Muslim philosophical and mystical traditions, the spirit is seen as among the primary emanations to come from the Divine essence (Rahmani 1997, 275). The Quran has used the word spirit (*ruh*) in various different ways; among these are the spirit as a creation like the angels but above the ranks of the angels according to various Shi'i traditions which may then be the point of origin of the above philosophical and mystical notion (Kashani 1984, 269-275 and The Quran, 16:2). This description of the spirit is often used in the context of Lady Mary and Prophet Jesus and at times has been used in description of other prophets and believers as a divine aid assisting them. In this context the spirit is often referred to as the Holy Spirit (The Quran, 5:110).

At other times it is used in the sense of a life giving agency of God as in the verses referring to the blowing of the spirit into the statue of Prophet Adam and the blowing of the spirit at the immaculate conception of Lady Mary (Ibid 21:91 and 15:29). It is used as something issued from the command of God of which God has given very little knowledge to us (Ibid 17:75). Imam Ali elaborates on the Divine issuance of the spirit into Prophet Adam,

"Allah collected from hard, soft, sweet and sour earth, clay which He dripped in water till it got pure, and kneaded it with moisture till it became gluey. From it He carved an image with curves, joints, limbs and segments. He solidified it till it dried up for a fixed time and a known duration. Then He blew into it out of His Spirit whereupon it took the pattern of a human being with mind that governs him, intelligence

which he makes use of, limbs that serve him, organs that change his position, sagacity that differentiates between truth and untruth, tastes and smells, colours and species. He is a mixture of clays of different colours, cohesive materials, divergent contradictories and differing properties like heat, cold, softness and hardness” (Al- Radi 1986, sermon 1).

The sermon shows that the spirit is akin to a life-force which illuminates and energises the ‘clay’ of a human being. This positions the spirit as a necessary factor in the creation and development of a human being which has a continual effect, through the soul, on a being’s physical growth and properties.

Finally, the spirit is used as something that descends with the command (*amr*) of God to the earth with the angels and ascends to the heavens (The Quran 97:4 and 70:4). According to a narration of the fifth Shi’i Imam the spirit is of four types: the Holy Spirit, the Spirit of Faith, the Spirit of Desire and the Spirit of Body (Kashani 1984, 269).

Origin

All of the above would designate the spirit at the rank of humans and above. And an overall reading around the subject would convince that at the very least the spirit plays a part in the emergence of the human soul and its subsequent evolution through its process of actuality. Hence, the spirit can be defined as a part and agent of the transcendental world, the true reality. The spirit is the cause for not just the emergence of the soul but is the cause and connector of worldly life to transcendental life. It can be in the form of a Divine Aid assisting God, a life-force/giver and akin to a part of God’s Essence.³ Therefore, if a being’s journey is to complete itself towards a transcendental reality and this requires a stable development of identity and self-consciousness with the issuance of the Divine spirit, any deliberations on animal-human combinations and creations may need to contemplate on this aspect of a being as well.

³ For further information on the spirit from the Qur’an, see 5:110, 16:2, 15:29, 17:75, 21:79, 21:91, 70:4 and 97:4.

The famous narration of Ali b. Abi TALib which states: 'He who truly knows himself, has known his Lord' (ReyShahri 2009, vol 6, 142, no.11923, reported from Ghurar al-Hikam) is of significance here because one can deduce from it the relationship between the soul and the spirit. If we are concerned with developing our identity and self-consciousness, then it is important to know our soul. The 'self' in this narration can be interpreted as the person's soul. So, if a person's knows his soul, he knows his transcendental origin, the spirit. And the spirit is the Divine cause. So, through accessing one's metaphysical nature, one can access one's true and real origin. Furthermore, a person accesses *his* conception or understanding of his origin – not *the* origin. This is because the narration states 'Whoever knows himself, knows *his* Lord' ('his' denoting the dhamir in the Arabic text). This is a personal relationship and a very individual conception of one's Lord. Therefore, it is perhaps important to nurture a being's self-consciousness with his origin so that the being's life is satisfied with a very personal link to the transcendental reality offering it deep purpose and channelled development. If every being possesses this highly personal capacity to form such a link, then animal-human combinations and creations must be able to nurture it, rather than hinder it.

To summarise, the soul is a unique level of self-awareness as well as the source of the attributes of life that the being displays. The soul allows the distinct animalistic and intellectual faculties to develop in a being which then contributes to the growth of the identity and self-consciousness of that being. The spirit is the cause for the emergence of the human soul. When we consider the soul and spirit together, we can appreciate the holistic and organic nature of a being. Whilst life can be considered as solely a rational and physical process, it is deeply and harmoniously connected with its origin (the spirit) and its actual nature (the soul). A being, therefore, uses its soul on two levels. The first is its unique identity or personality as an individual, of which it is aware of. The second is its self-consciousness of the transcendental reality present, which it may not be aware of

because of a lack of actualisation or verification of those metaphysical attributes that it possesses. Therefore, animal-human combinations and creations are not merely scientific processes that affect the intellectual and moral status of a being but its metaphysical status as well.

Conclusion

In conclusion, whether or not one considers revelation as an important intellectual source or has a particular conception of transcendence⁴, it is still necessary to at least consider the dimension and growth of identity and self-consciousness in a being. This is because a being's awareness of itself is not merely associated with its personality or intellectual traits. More than that, there is a deep level of consciousness which is affected when biological experiments are undertaken on all walks of life. An actual or potential being would still experience any positive or negative metaphysical changes when human-nonhuman experimentations, transplantations and other combinations have occurred. When a being feels physical anguish, it is also an anguish connected to the soul.

We therefore submit that animal-human experimentations are not significantly beneficial to humanity because they do not maintain the unique and natural course of identity and self-consciousness in all beings. If there are therapeutic benefits then these must be established with great certainty and should experimentations be undertaken they must be taken without harming the very essence of humanity – the soul and spirit. At present, this certainty has not been established and such experimentations are more dangerous to the stability of human beings rather than being beneficial to their development. In an article in BBC News entitled 'MP's back hybrid embryo research' dated 19th May 2008, ex-minister Edward Leigh who led the fight against the creation of hybrid

⁴ See John Hick's concept of the 'Real' which is an objective reality subjectively interpreted by human beings giving rise to its different and truthful religious manifestations. Hick, John. 1991. *An Interpretation of Religion: Human responses to the Transcendent*. Macmillan Academic and Professional Ltd.

"admixed" embryos, said they were "ethically wrong and almost certainly medically useless". He said there was "no evidence yet to substantiate" claims the work could lead to treatment for degenerative diseases like Parkinson's and Alzheimer's." Furthermore, Fergus Walsh of BBC News reports on 1st April 2008 that Dr David King of Human Genetics Alert stated,

"For anyone who understands basic biology, it is no surprise that these embryos died at such an early stage. Cloning is inefficient precisely because it is so unnatural, and by mixing species it becomes even more unnatural and unlikely to succeed. The public has been grossly misled by the hype that this is vital medical research. Even if stem cells were ever to be produced, like cloned animals, they would have so many errors of their metabolism that they would produce completely misleading data."

It is increasingly clear that more enquiry and research needs to be undertaken by parliament, law-makers and scientists before any reasonable measure of certainty can be established on this issue. Our first step is to take the aspects of identity and self-consciousness of a being seriously – not just in animal-human combinations and creations but in the wider medical and ethical framework. Perhaps the four standardised ethical principles developed by Beauchamp and Childress (autonomy, beneficence, nonmaleficence and justice) can be reinvestigated to acknowledge the multi-dimensional nature of a human being. Autonomy can be rooted in moral self-consciousness and justice can be rooted in the internal human contract of self-examination. These are supra-rational principles which are *a priori* and need to be filtered within medical and bioethical practice. This kind of deliberation may positively affect the bioethicist, scientist, doctor and patient because it gives them a chance to examine the origin and direction of life itself. In cases of abortion and euthanasia, this question is central to the decision of keeping or destroying life. Tampering with the self-consciousness of a being may affect its intrinsic, instinctual and beautiful journey to complete itself with its own identity and as a being connected to the transcendental reality.

Bibliography

1. ABBAS, Qamar and PANJWANI, Sibtain. Summer 2008. *The necessity of spiritual care towards the end of life*. Ethics and Medicine – An International Journal of Bioethics. 24:2: 113.
2. BAKHTIAR, Laleh. 1993. *Traditional Psychoethics and PersonAlity Paradigm – God's Will Be Done*. The Institute of Traditional Psychoethics and Guidance.
3. BBC News. 19th May 2008: *MPs back hybrid embryo research*. http://news.bbc.co.uk/1/hi/uk_politics/7407589.stm
4. BBC News. 19th May 2008: *Q&A Hybrid Embryos*. <http://news.bbc.co.uk/1/hi/health/6233415.stm>
5. BBC News. Nick Triggle. 21st May 2008: *Abortion: The medical evidence*. <http://news.bbc.co.uk/1/hi/health/7409914.stm>
6. BBC News. Fergus Walsh. 1st April 2008: *UK's first hybrid embryos created*. <http://news.bbc.co.uk/1/hi/health/7323298.stm>
7. BBC News. 15th January 2008. *[Hybrid] Embryos challenge fails in Lords* http://news.bbc.co.uk/1/hi/uk_politics/7190530.stm
8. British Science Council <http://www.sciencecouncil.org/DefiningScience.php>
9. CHITTICK, William. 2003. *Mulla Sadra - The Elixir of the Gnostics: A Parallel English-Arabic Text*. Brigham Young University Press.
10. DIXON, Martin and MCCORQUODALE, Robert. 2003. *Cases and Materials on International Law*. Oxford University Press.
11. Draft Human Chimera Prohibition Act of 2005: <http://www.govtrack.us/data/us/bills.text/109/s1373.pdf>
12. European Convention on Human Rights and Biomedicine 1999
13. <http://conventions.coe.int/Treaty/en/Treaties/Html/164.htm>
14. HICK, John. 1991. *An Interpretation of Religion: Human responses to the Transcendent*. Macmillan Academic and Professional Ltd.
15. HILLI, Jamal al-Din Hasan b. Yusuf b. Ali b. Muthahhar Al- (n.d.) *Al-bab al-hadi al-ashar*. Qum: Maktab Intisharat.
16. Human Fertilization and Embryology Act 1990

17. HUSSAIN, Arif Abdul. July 2005. *Ensoulement in the prohibition of abortion in Islam*. Islam and Christian-Muslim Relations Journal. Vol 16, No.3.
18. IBN MANDHUR, M (1984), *Lisaan Al-Arab*, (Dar al Kutob al Ilmiyah).
19. ISFAHANI, Raghieb (1983), *Al-Mufradat fi Gharib al-Quran*, (Dar al-Murtadha: Lebanon).
20. KANT, Immanuel. 1993. *Grounding for the Metaphysics of Morals*. Hackett Publishing.
21. KASHANI, Mohsen al-Fayad. 1980. *Ilm al-yaqin fi usul al-din*. Qum: Intisharat Bidar.
22. KASHANI, Mohsen al-Fayad. 1984. *Usul al-maarif*. Qum: Markaz Intisharat Daftar Tablighate Islami.
23. KAZEMI, Reza. 2007. *Justice and Remembrance: Introducing the Spirituality of Imam Ali*. I.B Tauris.
24. MASON & MCCALL Smith. 2005. *Law and Medical Ethics*. Oxford University Press.
25. MOEZZI, Mohammad (1994), *The Divine Guide in Early Shi'ism: The Sources of Esotericism in Islam*, (Albany: State University of New York Press).
26. MUFID, Mohammad. 1981. *Kitab Al-Irshad – the Book of Guidance*. Muhammadiyah Trust.
27. NASR, Hussein. 1993. *An Introduction to Islamic Cosmological Doctrines*. State University of New York Press.
28. Pontifical Academy. 26th September 2001: *Prospects for Xenotransplantation – Scientific Aspects and Ethical Considerations*.
www.vatican.va/roman_curia/pontifical_academies/acdlife/documents/rc_pa_acdlife_doc_20010926_xenotrapianti_en.html
29. RADHI, Shareef Al-. 1986. *Nahj Al-Balaagha (Peak of Eloquence): Sermons of the Commander of the Faithful, Imam Ali b. Abi Talib*. Tahrir Tarsile Quran Inc. <http://al-islam.org/nahj/>
30. RAHMAN, Fazlur. 1976. *The Philosophy of Mulla Sadra*. State University of New York Press.
31. RAHMANI, Said. 1997. *Tajalli wa – zuhur dar irfan nazari*. Qum: Markaz Intisharate Daftar Tablighat Islami.
32. REYSHAHHI, Muhammad. 2009. *Mizan Al-Hikmah*. ICAS Press.
33. SADOOQ, Mohammed (N.D). *Kitab Al-Tawhid*. Dar al-Murtadha: Lebanon.

34. SADR, Al-Rida al-. 1986. *Al-falsafat al-ulya*. Beirut: Dar al-Kitab al – Lubnani.
35. SADRA, Mulla. 2002. *Asfar Al-Arbaa*. Dar al-Kitab al – Lubnani.
36. Select Committee on Science and Technology Fifth Report
37. <http://www.publications.parliament.uk/pa/cm200405/cmselect/cmsctech/7/712.htm>
38. SHOMALI, Muhammad Ali. 1996. *Self-Knowledge*. International Publishing Co.
39. SINGER, Peter. 1975. *Animal Liberation: a new ethics for our treatment of animals*. Avon Books.
40. STRAUGHAN Roger. 1999. *Ethics, Morality and Animal Biotechnology*. Biotechnology and Biological Sciences Research Council.
41. TABATABAI, Mohammad. 1979. *Shi'ite Islam*. State University of New York Press.
42. TAMIMI, Wahid (ND), *Ghurar Al-Hikam*. Dar al-Murtadha: Lebanon.
43. The Quran
44. TUSI, Ja'far. 1988. *Al-Tibyaan Fi Tafsir Al-Quran*. Dar al-Murtadha: Lebanon.
45. The President's Council on Bioethics. Washington D.C. March 2004: *Reproduction and Responsibility: The Regulation of New Biotechnologies*. <http://bioethics.gov/reports/reproductionandresponsibility/chapter10.html>
46. President's Council on Bioethics. 2008. *Human Dignity and Bioethics*. President's Council on Bioethics.
47. WEHR, Hans. 1976. *A Dictionary of Modern Written Arabic*. Federal Publications, Singapore.
48. The Wellcome Trust, Cancer Research UK, Gurdon Institute of Cancer and Developmental Biology and University of Cambridge - Science and Technology Committee. 20th February 2007: A collective submission. <http://www.parliament.uk/documents/upload/chememosforwebupload.pdf>
49. UK Animal Procedures Committee. June 2001: Report on Biotechnology. <http://www.apc.gov.uk/reference/biorec.pdf>
50. United Nations General Assembly resolution. 10th December 1948: s217 A (III) <http://www.un.org/Overview/rights.html>. Council of Europe

Convention on Human Rights and Biomedicine: ETS No 164.
<http://conventions.coe.int/Treaty/en/Treaties/Word/164.doc>
and European Convention for the Protection of Pet Animals: ETS
No. 125.
<http://conventions.coe.int/Treaty/en/Treaties/Word/125.doc>