Stem cell research, personhood and sentence

Dr Lisa Bortolotti is a research associate in the Centre for Social Ethics and Policy (School of Law) at the University of Manchester. Her research interests are in philosophy of mind, philosophy of science, philosophy of psychology and applied ethics. She has written on the notion of rationality, theories of interpretation, delusions and animal cognition. She works now at the EURECA project on delimiting the research concept and research activities. The project, funded by the European Commission, is co-ordinated by Professor John Harris and has eight project partners across the European Community.

Lisa Bortolotti¹, John Harris

Centre for Social Ethics and Policy, School of Law, Williamson Building, Oxford Road, University of Manchester, M13 9PL, UK
¹Correspondence: Lisa.Bortolotti@manchester.ac.uk

Abstract

In this paper the permissibility of stem cell research on early human embryos is defended. It is argued that, in order to have moral status, an individual must have an interest in its own wellbeing. Sentience is a prerequisite for having an interest in avoiding pain, and personhood is a prerequisite for having an interest in the continuation of one’s own existence. Early human embryos are not sentient and therefore they are not recipients of direct moral consideration. Early human embryos do not satisfy the requirements for personhood, but there are arguments to the effect that they should be treated as persons nonetheless. These are the arguments from potentiality, symbolic value and the principle of human dignity. These arguments are challenged in this paper and it is claimed that they offer us no good reason to believe that early human embryos should be treated as persons.

Keywords: embryos, personhood, sentience, stem cells

Introduction

In this paper an argument is put forward for the permissibility of stem cell research on human embryos on the basis of the view that beings with interests about their own well-being are appropriate candidates for direct moral consideration. All sentient beings have an interest in avoiding pain and should not be caused pain unnecessarily. Sentient beings that are also rational and self-conscious can have an interest in their own continued existence and their existence should not be terminated unnecessarily (Harris, 1985).

This paper will identify the criteria that a being needs to satisfy in order to count as sentient or as a person. Given the criteria, it will be suggested that recent developments in the assessment of pain and consciousness in non-humans increase to the likelihood of answering the two distribution questions: who is sentient and who is a person? Then the framework will be applied to the context of stem cell research and it will be suggested that it is permissible to conduct stem cell research on early human embryos, because in the first 14 days human embryos are neither sentient nor in possession of those capacities necessary for sentient beings to qualify as persons.

In this paper, indirect moral obligations to human embryos will not be considered, but three arguments will be responded to against the permissibility of stem cell research on embryos. These are derived from three reasons why human embryos might be entitled to respectful treatment: (i) embryos are potential persons; (ii) treating embryos disrespectfully violates the principle of human dignity; (iii) embryos have a symbolic value that commands respect. It is argued that none of these objections threatens the paper’s conclusion.

Why are personhood and sentience morally relevant?

It seems reasonable to assume that only individuals with a mental life of a certain complexity are entitled to direct moral consideration. Competing moral approaches (contractualism, rights theories and utilitarianism) build into their system a way of tracking this relationship between mental capacities and moral status, but often this relationship is not made explicit. In the account that will be defended here, only individuals that...
have an interest in their own well-being are entitled to direct moral consideration.

The use of the word ‘interest’ in this context can be confusing. There is a sense in which it is in the interest of my plants that I water them regularly but this is not the relevant sense of ‘interest’. My plants do not have a mental life of the right complexity to form the desire to be watered, and so they are not themselves concerned about their own well-being. As the person in charge of watering the plants, I might think that what I do is in their interests because I value my plants, but they are not aware of their own value, they do not value themselves (Harris, 1985). Consider another example. One might think that it is in the interest of a city to have some ugly buildings demolished. Now, what this means is that the city would look better if those buildings were not there, but the city itself has no desire for the demolition, unless by ‘city’ we refer to the collective of its inhabitants, who can have a number of desires about the place where they live and a number of beliefs about how to improve it. So when we talk about morally relevant interests, we talk about the interests of those individuals that can have beliefs and desires about their own well-being.

The next question asks which interests are to be taken into account and the answer is, those interests that reflect the individual’s concerns. A fox might not be interested in going on living until next Tuesday, because it is not likely to have the concept of death and cannot conceive of itself in the future. A young woman who has just given birth to her son might have the desire to go on living until the son becomes self-sufficient. But both the fox and the young woman might be interested in not being burnt in a fire that they can see or feel and immediately fear. So the woman values her own life in a way in which the fox does not, but both the woman and the fox value not being in pain and danger.

Since our direct moral obligations track the first-order beliefs and desires that constitute the individual’s interest in its own well-being, we have a direct moral obligation not to cause any unnecessary pain to the woman and the fox, but we don’t have a direct moral obligation to preserve the life of the fox. When it comes to persons who have a desire to go on living, then their valuing their own life creates a moral obligation to preserve it. A person, being able to conceive of itself as a subject of experience, can have a concept of its own existence as unique and lasting in time, and have beliefs and desires about its own continued existence. This means that there is more to the direct moral obligations we have towards persons than refraining from causing them pain and other unpleasant or distressing experiences.

Naturally there can be indirect moral obligations to preserve the existence of sentient and sentient beings, but they will not be discussed here.

What is personhood?

In ordinary language we identify persons with human beings, but the notion of a person is not co-extensive with the notion of a human being. More specifically, whereas an individual counts as a human being if it belongs to the species Homo sapiens, it counts as a person not by virtue of species membership, but of the capacities it possesses. That means that there are cases of human beings who are not persons and possibly cases of persons who are not human. It is arguable that human infants and human adults in persistent vegetative state do not have the capacities required for personhood, whereas forms of intelligent extraterrestrial or artificial life and some non-human primates might satisfy the criteria for personhood.

The definition of person is to some extent controversial but there is widespread agreement that the capacities required for personhood include rational thought and self-consciousness. These are highly theoretical notions and some have argued that they are not going to be amenable to precise definition, but we believe there are grounds for optimism. We might not fully understand the mechanisms that underpin rationality and self-consciousness but we have an increasingly clear notion of what types of behaviour are expressive of these capacities. We shall come back to this issue in the next section.

There are (at least) three common uses of the term ‘rationality’ that could be relevant to the notion of personhood. An individual might be regarded as (instrumentally) rational if it can engage in means-end reasoning, that is, if it can identify the means by which its ends can be fulfilled, and pursue those means. Suppose Angela wants a newspaper and there is a newsagent across the road. Given her goal, it would be rational for her, all things considered, to cross the road and visit the newsagent. In this sense non-human animals can also be rational as where a cat silently stalks its prey or sets an ambush.

Further, an individual might be regarded as rational if it can think well, that is, if the reasoning in which it engages does not violate any fundamental principle of logic. Suppose Bert believes that black and white people are equal. Yet, Bert is heard talking in pejorative terms about a black woman who has just moved into his neighbourhood. One might argue that Bert’s beliefs do not form a consistent set, and violate the principle of non-contradiction. Bert is at risk of inconsistency (not to mention prejudice!).

Finally, we have the most demanding notion of rationality which requires not just the conformity of an individual’s behaviour to given standards (of instrumental rationality, good reasoning etc), but the responsiveness of the individual to such standards. What we mean is that, coming back to the case of Bert, he will count as rational if (i) he has a consistent set of beliefs and preferences and (ii) he makes sure they are consistent because he appreciates that otherwise he would be violating a fundamental rule or value of rationality. The rational being, in this third more demanding sense, is the being which has the capacity to follow norms of rationality because it appreciates their normative force. In the context of the elucidation of personhood, the capacity for responsiveness to norms is required. This capacity underpins moral agency, which is another criterion for personhood in some contractualist frameworks (Rawls, 1971; Scruton, 2000).

When it comes to self-consciousness, it is important to provide an account of the differences between (i) the capacity to have conscious experiences and react appropriately to external stimuli and (ii) the capacity to have a sense of self, that is, an awareness of one’s own existence in the past, in the present.
and in the future and of one’s own uniqueness. The former capacity is often called sentience. It is something that we as normal humans share with many non-human animals. A dog is aware of the food he eats and the other creatures around him, but is not aware of who he is, of what makes him unique as the individual who had experiences in the past, is having them now and will have them in the future. Normal adult humans have the sense of self that is required for personhood. When I see a chair, I have the conscious visual experience of a chair, I am aware of the chair being there and I know what a ‘chair’ is, I know that a stool and a settee fulfil similar functions, I know how to use a table as a chair (and vice versa), in short I have the concept of a chair. But I can also be aware that I have that experience, that it is me seeing the chair, the same me who ate spaghetti last night. This is the sense of self that is required for personhood and that allows one to have one’s own thoughts or experiences as objects of thought.

Typically, persons, as rational and self-conscious beings, have beliefs, desires and preferences and are autonomous, that is, they can act on their own decisions. That is why persons are often defined in terms of their capacity to decide what they will do in circumstances in which they have a choice and are able to act as moral agents.

The distribution question and assessment of personhood

How do we decide which individuals are persons? If an individual is rational and self-conscious, then it is a person. But some fear that self-consciousness or rationality cannot be measured, and therefore that they cannot be useful as standards of personhood. This sometimes amounts to the rejection of the moral significance of the notion of persons. However, in the last 40 years excellent progress has been made in the attempt to refine these concepts and provide more precise behavioural criteria.

In the psychological literature on reasoning, in cognitive ethology and comparative psychology, interesting experiments have been devised to investigate, respectively, the reasoning competency of human subjects (Nisbett and Ross, 1980; Kahneman et al., 1982) and the presence of self-awareness and problem-solving capacities in other animals (Griffin, 2001). Just one example will be used to illustrate how philosophically informed empirical work can shed light on the assessment criteria for personhood that are needed to answer the distribution question.

One capacity that is deemed relevant to self-consciousness (though by no means sufficient for it) is the awareness of one’s own body. To establish whether other animals manifest this awareness, primates have been tested on their capacity to recognize their own image reflected in a mirror. We do use mirror images of ourselves on an everyday basis and almost automatically. However, this is a capacity that is very sophisticated and that is acquired in the course of our normal development. Human adults affected by delusions of mirrored self-misidentification or mirror agnosia lose this capacity following a trauma in the frontal region on the right side of the brain, the region responsible for emotional processing, higher cognition and personality traits.

In front of the mirror, chimps and orangutans initially attack the mirror thinking that the mirrored image is another ape. Monkeys never come to realise it is their own reflection, but chimps and orangutans make that step within a couple of hours to a couple of days, depending on the individual. Then they use the mirror as a tool to groom parts of the body they can’t normally see and they behave in ways that would not be possible without a mirror, such as touching repeatedly a part of their body that had been painted in red by human trainers while they were asleep (Anderson and Gallup, 1999; Keenan, 2003).

This is just an example of how some elements of the sense of self can be detected in cases in which verbal reports are not available. These criteria can be used to answer the distribution question and ultimately will help us decide which species and which individuals are candidates for the moral concern reserved to persons. If we were to discover that some animals do satisfy the criteria for personhood, then we would also have a direct moral obligation to respect their desire to go on living and to refrain from confining them. These constraints would limit the use of animals in experimental research. Now the majority view among scientists is that, although some animals can solve novel problems, communicate, teach their offspring and deceive others, the criteria of rationality and self-consciousness are still far from being satisfied. Therefore it is thought that there is no direct moral obligation to preserve the life of non-human animals, as they could form the desire to go on living only if they had a fully developed sense of self. The scientific contributions collected by Cavalieri and Singer (1994) in The Great Ape Project constitute a noteworthy exception to this view.

What is sentience?

A brief definition of sentience was offered earlier when the distinction was made between the capacity to have experiences and react appropriately to external stimuli (sentience) and the further capacity to be aware of oneself as a distinct individual whose existence began sometime in the past and will extend into the future (self-consciousness). In making that distinction it was assumed that sentiment and consciousness stand for the same capacity and that being sentient consists in having conscious experiences. Sentience will be discussed further here because in the literature on animal welfare and in applied ethics in general this notion is used ambiguously to pick out two different capacities.

In one sense of ‘sentience’, the notion does not involve phenomenal consciousness (or knowing what it is like to have a certain experience). It is just discriminatory reactivity, that is, the capacity to react to external stimuli. Plants and computers can do that, without being aware of the qualitative aspects of the stimuli they react to. Having phenomenally conscious experiences requires the awareness of some qualitative aspects (or qualia) of the experiences we have, for instance the brightness of a colour we visually perceive. We assume other humans are phenomenally conscious as we are, but whether some non-human animals are phenomenally conscious is an open debate (Carruthers, 1992). Note that not all philosophers believe that phenomenal consciousness is a respectable notion, and some have argued that the existence of qualia as such is a myth (Churchland, 1988; Dennett, 1988).
The other characterization of sentience as the capacity to feel pain or pleasure includes, or is agnostic about, the presence of phenomenal consciousness. While plants and computers can react to external stimuli in an appropriate way, they do not feel pain or pleasure because they lack the internal structure that allows for pain or pleasure to be sensed. When it comes to non-human animals, no general statement can be made. Some animals have a nervous system similar to ours, and are likely to feel pain when confronted with adverse stimuli, whereas other animals do not. The question of how similar to us they need to be in order to be ascribed pain sensations will be discussed in the next section.

Sentence in the latter sense will be discussed for two reasons. First, we don’t believe the notion of phenomenal consciousness, if legitimate at all, is particularly useful. Second, the latter is the sense in which most philosophers and others concerned with animal welfare use the word. Since what matters for direct moral consideration is the presence of beliefs and desires about one’s own well-being, feeling pain is a necessary condition for wanting to avoid the cause of pain. The capacity to feel pain is what seems to us morally relevant, but some philosophers choose a different approach (Carruthers, 1999).

Distribution question and assessment of pain

It has become customary in any contribution to the literature on animal welfare to ridicule the Cartesian view according to which animals are automata. But if we find it extremely implausible that cats and dogs could be viewed as machines without sentience, we still have a mechanistic picture of the behaviour of many other animals.

We need an answer to the distribution question: how widely is sentience distributed, what animal species (or individuals) have sentience? One way of answering the question is to establish some criteria for pain and see which animals satisfy these criteria.

According to the human-centred approach, non-human animals can be considered able to feel pain if (i) they have the same mechanisms that are responsible for pain in humans and (ii) they behave in ways that are similar to the ways in which humans behave when they are in pain (Bateson, 1991). For sake of simplicity, (i) will be referred to as the physiological criterion and (ii) as the behavioural criterion.

Among the relevant factors, Bateson highlights the way in which the nervous system works, the existence of parts in the nervous system dedicated to the avoidance of damage, the relative size of the brain and cognitive capacities. In some cases, this list of factors is unsatisfactory and does not help reach a conclusive answer: for instance, insects have a complex nervous system, but no fibre system equivalent to the pain fibres of vertebrates. Moreover, Bateson notices that there are cases in which the decision to protect a species is based purely on behavioural responses. The cephalopods (e.g., octopus and squid) are invertebrates and have a complex nervous system that is very dissimilar to that of humans. However, their behavioural responses are so sophisticated that scientists have decided to give them the benefit of the doubt.

So cephalopods have been protected under the Animals Scientific Procedures Act of 1986 and cannot be used for research that is likely to cause pain.

Recently the results of some experiments on the rainbow trout have suggested that it can feel pain (Sneddon et al., 2003). This is quite a breakthrough, as a common view is that mammals, birds, reptiles and amphibians, but not fish, are sentient. Sneddon also recognizes the presence of behavioural and non-behavioural criteria for pain. She emphasizes the physiological criterion: she claims to have found pain receptors in the trout that are similar to those found in amphibians, birds and mammals. But she concedes that the presence of nociceptors is not sufficient to establish that the rainbow trout can feel pain. To demonstrate pain perception it is necessary to show that the trout’s behaviour is adversely affected by a potentially painful experience and that the exhibited behavioural changes are not reflex responses. Now, the distinction is not easy to make, but a reflex response (such as blinking) is produced as the routine result of a single neurological reaction to a single stimulus, whereas non-reflex or operant behaviour results from complex neural causes. In the latter case, Sneddon claims, the animal avoids the stimulus as a consequence of learning that the stimulus is associated with an unpleasant experience.

In the experiment conducted by Sneddon, bee venom or acetic acid was injected into the lips of some rainbow trout, whilst other fish were injected with saline solution or merely handled to form control groups. All fish had previously been conditioned to feed at a feeding ring in their tank where they were collected for handling or injection. The trout into which bee venom was injected demonstrated ‘rocking’ motion, which reminds us of the kind of motion seen in stressed higher vertebrates like mammals, and the trout injected with acetic acid were also rubbing their lips onto the gravel in their tank. The fish into which acid and bee venom were injected took almost three times longer to resume feeding compared with the saline and handling control groups.

Is the rocking back and forth evidence that the trout is in pain or is it just a reflex response? Sneddon thinks it good evidence for pain; others deny it. (We do not comment on the ethics of conducting such experiments at all but such a comment would have to take account of a balance between the protective benefits that would flow from establishing that a class of creatures could feel pain against the harm done to the experimental subjects.)

The problem is that it is not easy to interpret the behaviour of other species. When it comes to humans, we have many resources available. We can rely on verbal reports and, if that is not possible, we can observe distortion of the face, pallor, attempts to remove the source of stimulation and so forth. Less visible signs are, for instance, dilatation of the pupils, increased heart rate and body temperature. The effects of analgesics and anaesthetics provide further evidence (Bateson, 1991). Not all of these behavioural responses can deliver insights into the mental states of other animals. So what resources do we have to assess pain in non-human animals?

There is no agreed answer to this question. One suggestion comes from the literature on animal consciousness in cognitive...
ethology. Although no ultimate definition of consciousness is available, the best evidence we have for the presence of consciousness in non-humans – and therefore conscious sensations of pain – is flexibility of behaviour. Allen and Bekoff (1997) suggest that consciousness comes in degrees, and that conscious states can be legitimately ascribed to those systems whose behavioural responses exhibit multimodal integration, i.e. those systems that have the ability to access a common representation through different sensory pathways and are better at error detection. An interesting example is provided by Sterelny (2000) who distinguishes between detection and representation. The behaviour of an organism that detects x is not as sensitive to feedback as the behaviour of an organism that represents x, as the former might depend on a single cue. For instance, ants dispose of the bodies of their dead nest-mates because they detect the oleic acid that decay produces. They have no other perceptual mechanism that helps them track whether their nest-mates are alive or dead. That means that in an environment in which their only cue, the presence of the acid, is disrupted, their hygienic behaviour will not occur. Flexibility of behaviour, defined in terms of multimodal integration, is a promising way of making a meaningful distinction between the behavioural responses of sentient and insentient beings.

The case of experimental research on animal subjects

There is an ongoing debate about the use of non-human animals in farming, hunting, fishing, the entertainment industry, educational settings, toxicity tests and scientific research in general. This paper will focus only on the debate on the use of non-human animals in scientific research and assume that at least some animals are sentient.

The typical utilitarian position is to consider both the (ethical) benefits and costs of scientific research and consider it permissible if the benefits outweigh the costs. According to Singer (1993), many factors need to be taken into account: how many individuals are experimented upon, to what extent they are going to be adversely affected by the experimental procedure in terms of both pain and distress, to what extent the research outcomes will be beneficial and whether alternative methods of research that do not involve animals are available. Deontological positions such as Regan’s (1985) hold that animals that are subject-of-a-life have utility trumping rights of life and respect. In this category he places with confidence mammalian animals and argues that the benefit of the doubt should be extended to birds and some other species. His position is that no mammalian animal should be used for research, regardless of the benefits. However, he makes an important exception. He says that where mammalian animals do not have those capacities that characterize a subject-of-a-life, then experiments are permissible as long as some conditions obtain. To clarify this point, let me quote him on the definition of subject-of-a-life:

‘[subjects-of-a-life] have beliefs and desires; perception, memory and a sense of the future, including their own future; an emotional life together with feelings of pleasure and pain; preference- and welfare-interests; the ability to initiate action in pursuit of their desires and goals; a psychophysical identity over time; and an individual welfare in the sense that their experiential life fares well or ill for them’ (Regan, 1985).

Now we find this definition questionable in many respects and there is some reason to doubt that most humans can satisfy all these diverse requirements, let alone other mammalian animals. But leaving that aside, Regan rightly observes that newborn and soon-to-be-born mammalian animals do not meet the standards of subjects-of-a-life. Therefore he claims that he has no direct objections to using them in research, as long as the laboratory animals used to produce the newborns, the embryos or the fetuses are treated with respect and this practice does not foster attitudes that would promote the use of mature mammalian animals in research.

On the basis of the view that has been endorsed here, causing unnecessary pain to sentient beings is to be avoided. Our position on research on sentient beings will be that it is permissible if there are clear and important benefits to be expected from the experimental results, and if pain is not caused to the experimental subject. Trivially, if the subjects are not sentient, the latter constraint does not apply. It has been seen in this section that even those philosophers who most strongly oppose research on animals make concessions for research that has potential beneficial results for the welfare of humans and non-humans, and sanction the scientific use of insentient animals under certain conditions. These considerations can shed some light on the debate on the use of human embryos in stem cell research, as will be seen in the rest of the paper.

When does sentience begin in humans?

What are the criteria on the basis of which we can assess sentience in human embryos? Two criteria have already been discussed, physiological and behavioural, for the assessment of pain in non-humans. When those criteria are applied to human embryos, it is found that human embryos to be used in stem cell research, as will be seen in the rest of the paper.

Let’s consider the physiological criterion first. In order for the embryo to be aware of a pain sensation, at least the following anatomical structures need to be in place: (i) sensory receptors capable of responding to a painful stimulus; (ii) nerves to conduct the impulses generated in these receptors to the spinal cord; (iii) nerve fibres within the spinal cord, which transmit these pain impulses to the brain. Behavioural evidence for these structures to be there is the presence of reflex responses as they require the nerves that emerge from the spinal cord to be intact and functional. The nerves responsible for carrying sensations from the skin to the spinal cord develop by the end of the seventh week of gestation (e.g. lip tactile responses have been observed after that time), and the thalamus, to which nerve fibres transmit pain impulses, is said to be functional from the eighth week of gestation. But as we saw before, the presence of reflex responses is not itself sufficient for pain perception. On some accounts of sentience in embryos, the formation of all the structures necessary for pain perception appears much later in the timetable of prenatal development, when synaptic connections within the brain are established. This would happen in the third trimester of pregnancy.

Even after considering the physiological and behavioural
criteria for sentience in embryos and fetuses, there is no agreement on the answer to the question of when sentience begins. The earliest possible time at which embryos might be able to perceive pain sensations is set at around the eighth week of gestation. The embryos used for stem cell research are not older than 14 days, so such research certainly does not involve sentient beings and it should not be constrained by the ethical considerations that apply to research on sentient animals. If the issue of research on sentient embryos should emerge, then the same constraints that apply to research on sentient animals should apply. It would be permissible if there were clear and important benefits to be expected from the experimental results and if pain were not caused to the embryo.

When does personhood begin in humans?

Personhood begins in humans when human beings start having a sense of self and responding to standards of rationality. The requirements for personhood are acquired gradually and are related to the capacity to ascribe mental states of a certain complexity to oneself and others. It is very difficult to point to an age at which these capacities are manifested.

Children seem to gain full awareness of self some time during their second year of life (Lewis and Brooks-Gunn, 1979; Kagan, 1981). Children under 2 years of age are of course conscious but lack full awareness of themselves as distinct from others. Towards the end of the second year they start using personal pronouns, recognizing themselves in mirrors and displaying self-conscious emotions such as shame (Zelazo, 2004). Moreover, children under 3 years of age have been found to fail the false belief task (Wimmer and Perner, 1983). The significance of the experimental results is controversial, but one interpretation is that children cannot distinguish their own perspective as observers of a story from the perspective of one of the fictional characters in the story. Versions of this experiment have been designed to test the capacity to ascribe mental states to others in non-human animals.

Although there is no ultimate test for the capacities involved in self-consciousness, these empirical studies rule out that human embryos and fetuses are persons. As they do not satisfy the requirements for personhood (rationality and self-consciousness), they do not qualify as persons and, in our view, do not have an interest in their own continued existence. In the literature there is a frequent appeal to the idea that human embryos and fetuses are potential persons. The argument has the following general structure: if embryos develop normally and without interference, they are likely to acquire in the future those capacities that characterize persons. So we should treat embryos as we treat persons. We shall briefly assess potentiality arguments here. First we shall examine the notion of ‘potential’ and then turn to the consequences that potentiality arguments have for stem cell research.

There is a weak notion of potentiality, according to which A is a potential B if A is a causal element in the production of B. This notion of potentiality is far too broad for two main reasons. First, it does not suggest how far back we should go in ascribing potential personhood. If what matters is the end of the process (B) and its status as person, then all the causal agents involved in the process have an equal claim to potential personhood, even spermatozoa. Secondly, it would follow from the weak notion of potentiality that a human somatic cell is a potential person, as a person can be obtained from it through cloning. It is implausible to argue for such a proliferation of direct moral obligations on the basis of potential personhood (Harris, 1985; Sandel, 2004).

These objections have prompted a more rigorous notion of potentiality (Hursthouse 1987). According to this latter notion, A is a potential B if (i) A will produce B if A develops normally; and (ii) the B so-produced will be such that it once was A. Although this is a better formulation than the previous one, there are still some serious problems. What does it mean to be produced or to develop ‘normally’ or ‘naturally’? Cloning is a natural procedure in some respect, as it occurs in nature without human intervention in the creation of monzygotic twins. Stone (1987) offers a definition of normal development. A develops normally if it primarily follows to the end the developmental path that is determined by its nature and that leads to B, a member of its kind at the adult stage. Apart from the evident circularity of this definition, what strikes us is the second clause that seems to suggest that there is continuity of identity between A and B or that A and B are the same individual at different stages. If this is the case, then early human embryos up to approximately 14 days lose their claim to being potential persons, as twins may be formed, and the embryo may give rise not to one but to two or more persons.

The upshot of potentiality arguments is that it is wrong to prevent the development of an embryo because the embryo has the potential to become a person. This relies on the assumption that we should treat a potential person as we treat a person. But we have direct moral obligations towards persons by virtue of their interests in their own well-being. Is it justified to grant the same moral status to early embryos that have no interests in their own well-being? The potential person has no interest in growing up, given the notion of interest that was explored at the start of this paper. This is also known as the logical problem with potentiality arguments. If B has rights because it satisfies a certain condition, it does not follow that A has the same rights because it could satisfy that condition in the future. In short, we are all potentially dead meat but that surely does not mean that we have powerful reasons to treat one another as if we were already dead meat. So the potentiality argument fails to show that we should treat human embryos as persons. One might have other reasons to regard human embryos as worthy of respect and we shall turn to those in the next two sections.

The principle of human dignity

There are two other arguments to support the idea that embryos should be treated with respect and they can give rise to objections to stem cell research on human embryos. The former derives from the endorsement and application of the principle of human dignity and the latter relies on the symbolic value of the embryo.

According to the principle of human dignity, in a formulation that can be found in Kant (1785), human life should never be thought of merely as a means but always also as an end.
Inspired by Kant’s formulation, some might argue that human embryos cannot be just treated as a means to further research. On this view, using embryos for stem cell research is a violation of the principle of human dignity as it is a form of instrumentalization of human life (Kahn, 1997).

It is important to notice as a preliminary move that Kant’s idea often now termed ‘instrumentalization’ can be used to condemn practices such as slavery, by which we treat other humans as means only, but it is not helpful in other contexts where we treat others both as a means and as an end at the same time (e.g. family relationships, friendship and so on).

This limitation of the principle in its Kantian formulation has been noted by Harris and Sulston (2004) who suggest a utilitarian interpretation of human dignity. They endorse Bentham’s idea that each human being should have equal standing with respect to rights and interests (Bentham, 1789). This interpretation does away with the notion of instrumentalization as a violation of human dignity, but emphasises two other aspects of human dignity: (i) each life counts equally and (ii) each life matters.

Both the interpretations of the principle of human dignity that have been considered here could be used against the use of human embryos in stem cell research. Relying on the Kantian reading of the principle, one could argue that no human life can be used merely as means. If human embryos count as a form of human life, and they certainly do, then it is not permissible to utilize them just as a means to harvest stem cells. Appealing to the utilitarian formulation of the principle, one could claim that the life of human embryos matters as much as the life of any other human being, and embryos have the same interests and rights as other humans do.

Notice that in both cases the objection relies on dignity being an attribute of human life as such. But as has been argued so far, there is nothing intrinsically valuable about belonging to the species Homo sapiens. Granting rights and interests on the basis of species membership alone seems to be totally arbitrary and it is comparable, as a practice, to granting rights and interests on the basis of race or sex. It amounts to a form of prejudice on the basis of which discrimination can be made. The reason why we find human life valuable and we want to protect it is that the typical human being has those capacities that have been described as morally relevant and that are required for sentience and personhood.

Therefore the objections to stem cell research on embryos from the principle of dignity beg the question of what the scope of the principle is. As the principle is worded as a principle of human dignity, one might work under the supposition that it is humanity that determines whether something or someone has certain rights and interests. But humanity is valuable only in so far as it stands for those capacities that are plausibly valuable. When it comes to the value of life and the dignity of life, we should make sure that no person is used as a means only (Kantian formulation) or that all persons count as equal with respect to their rights and interests (Bentham’s formulation).

The symbolic value of human embryos

A second influential view concedes that only sentient beings, of which persons are a subclass, are appropriate candidates for direct moral consideration. According to this point of view, presented by Steinbock (1992), embryos are not persons but they are not like any other bodily tissue either. They should be granted respect as developing forms of human life. So embryos have no moral status but they have moral value and can be granted indirect moral consideration, like trees or works of art. Steinbock argues that human embryos command respect because they represent the beginning of human life, similarly to human remains that command respect as they represent the end of human life. To show our respect for human remains we follow culturally dependent rituals that celebrate the end of a human life. It is hard to establish what obligations the respect for embryos places on us on the basis of their symbolic value.

For both Steinbock (1992) and Robertson (1995), human embryos occupy that space in between fully-fledged persons with rights and interests, and insentient beings with no symbolic value. So the respect we owe to embryos is not as great as the respect we owe to beings with interests.

Steinbock argues that we ought to respect embryos by defmiting their use to morally significant purposes. She pushes the analogy with autopsies on cadavers or with the use of dead bodies for the purposes of medical education: certain practices are allowed when there is a good reason to perform them. So there is no objection to using human embryos in stem cell research, as this kind of research has the goal of saving human lives and counts as morally significant. But there would be objections to the use of embryos for more trivial or futile ends, as for instance toxicity testing of cosmetics. Robertson (1995) endorses a very similar view and claims that the value of embryos must give way to the interests of persons that can be promoted via scientific research.

But combined with an on-off notion of respect, according to which respect does not admit of degrees, the view that embryos have symbolic value could generate an objection to embryonic stem cell research. The argument would be as follows: (i) if we owe any respect at all to embryos, we owe them the same amount of respect as we owe to human persons; (ii) we treat persons respectfully by never using them merely as means; (iii) embryos have symbolic value and demand respectful treatment; (iv) so embryos should never be used merely as means, even though our ends are morally significant. This is a ‘utility trumping view’ of symbolic value and would be a direct challenge to the permissibility of stem cell research on embryos.

Both views rely on the notion of symbolic value that needs to be made precise and cannot be merely illustrated solely by means of analogies, as analogies are always imperfect. Even conceding that the way in which entities acquire symbolic value is always to some extent arbitrary, an important question remains. How does symbolic value equate to moral value? No convincing account of the moral significance of symbolic value has been provided so far. As Jonathan Glover has noticed at a recent conference in Venice (20–22 November 2003), symbolic value, as analogized by Steinbock by reference to the...
American flag, only protects flags if a particular attitude to them is uncontroversial. Glover pointed out that whereas Americans may universally reverence their flag, the British tend to have a rather jokey, irreverent attitude to theirs, often printing it on underpants and bras. It follows that symbolic value may permit a wide range of responses including irreverence and instrumentalization.

Conclusion

The utility trumping view leads to deep tensions in our ethical framework. How could we justify granting utility trumping rights to sentient beings such as early embryos, and not granting utility trumping rights to sentient beings merely on the basis of symbolic value? This is surely not a coherent option for anyone who believes that moral significance firmly rests on the individual’s interests in its own well-being. Another problem with this latter interpretation of symbolic value is that, in the context of stem cell research, by respecting embryos we might be disregarding the interests of fully fledged persons whose serious medical conditions could be improved by the outcome of stem cell research. If we granted embryos utility trumping symbolic value we would have to justify a position according to which the respect we owe to beings with symbolic value outweighs the ethical demands of persons.

This paper has defined personhood and sentience and argued for their moral significance. It then challenged three common arguments for the claim that embryos should be treated as persons: potentiality arguments, violation of the principle of human dignity and symbolic value of embryos. These arguments are often turned into objections to stem cell research on human embryos, but it has been demonstrated that these objections are unconvincing as they stand and do not exempt embryos from use or creation as research subjects.

References


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