

doubts that a person who has been cloned can feel that her progenitor, who genetically would be her monozygotic twin, may become an appropriate parent.

In this paper, the author argues that any individual created through the application of human cloning techniques or other similar techniques or any other type of genetic manipulation will not show the donor's characteristics to the extent of compromising uniqueness. Therefore, claims to such an effect are needlessly alarmist. Moreover, the experiences of a human clone, as well as the experiences of any human being, independently of the method or technique used for asexual reproduction, will be unique and impossible to replicate. The creation of any genetically identical individual will never lead to the replication of the donor's experiences, because genetically identical individuals are not able to have identical experiences. Human experiences are not independent of space and time and, since every human clone will be born in a unique context, cloned human beings experiences will be unique. Therefore, cloned individuals, as in the case of any human being, will be able to develop their own identity, their own personality and the uniqueness of being a human being.

On uniqueness and human cloning

The opponents of cloning have stated that cloning of humans is questionable due to the possible psychological problems that cloned persons may experience, such as lack of a sense of uniqueness and problems related to identity development (Annas, 1998; Kass and Wilson, 1998; Wills, 1998; Baird, 1999; Williamson, 1999; Fung, 2000; McGee, 2000b; Tannert, 2006). However, many have refuted the accuracy of these statements, claiming that it is not known if cloned humans will have psychological problems (Madigan, 1998; Evers, 1999). In this controversy, some of the opponents of human cloning claim that those individuals born or produced through nuclear transfer will have to confront themselves with the problem of knowing that they have been planned to be a copy from another person, and this, states Baird, may diminish their sense on uniqueness (Robertson, 1998a; Baird, 1999).

Baird (1999) also outlined some possible psychological problems and social harm issues associated with human cloning: (i) in individuals originating from transfer of an adult's nucleus, the knowledge that one is the result of cloning may diminish one's sense of uniqueness; (ii) individuals originating from embryo splitting carried in the same pregnancy, such as twins or triplets, may have problems in defining expectations of themselves and for their future, because they know there is another genetically identical individual; and (iii) individuals originating from embryo splitting, which are frozen and implanted at another time or in another woman if donated, may have to deal with the knowledge that they have not originated from an undirected combination of two particular genomes (i.e. someone has determined who they are genetically).

Furthermore, the critics of human cloning argue that cloned children may not have the sense of coming from a maternal and paternal line, with attributes coming from both parents, and may not feel that they are unique individuals. Based on that assumption, the first person born through nuclear transfer cloning would have to deal not only with being a

genetic copy of another person, but with the fact of being a person who does not come from the joining of an egg cell and a spermatozoon.

An opposing view to the critics of human cloning is presented by Madigan (1998), who stated that a person who has been cloned will not be a simple replica of another human being but a unique person. According to Madigan, a human clone is an identical twin delayed in time, i.e. a much younger identical twin, reared in a different environment, at a completely different time and with the benefits of not being treated in the same way. The basic fear of cloning is in regards to the nature of a newly created person and that human cloning will be the creation of an identical copy of a particular person. However, this does not have to be so.

Although human clones may have the same nuclear genes as in the case with monozygotic or identical twins, there is no evidence or reason to believe they will not be unique individuals who will have their own personalities and their own philosophy of life (Madigan, 1998; Pence, 1998b; Shannon, 1998; Wills, 1998; Evers, 1999; McConville, 2001; Strong, 2005a). Taken into consideration the extensive amount of research on twin studies, especially on monozygotic twins, there is evidence that supports the idea that personality differences, identity development and the uniqueness of human clones, created through somatic cell nuclear transfer or by any type of genetic manipulation, will be shaped by the interaction between genetic and environmental factors.

On uniqueness and studies of twins

Several authors (Elliott, 1998; Jamieson, 1998; Resnik, 2001) consider that people with the same genes like monozygotic twins are not the same people. Cloned human beings will have physiological differences, as well as different behavioural traits, which led Shermer (1999) to question why moralists are not crying out for legislation against twinning, when nature can already do the cloning: the result is called identical twins. In addition, some authors such as Pence (1998b) indicate that a cloned person would not be an exact copy of an adult human being. Although the gene structure would be very similar at the molecular level, there will be many differences. Moreover, Pence (1998b) and Strong (2005b) point out that the brain cannot be cloned or duplicated and, most importantly, the experiences of a human being cannot be replicated by cloning. Many of these wrong ideas, such as the duplication of the mind, are captured from pure science fiction, poorly informed politicians and irresponsible journalism.

In the field of psychology, we have no evidence that it is possible to replicate in exact detail individual human experience. Many studies on monozygotic twins indicate that, even when they share a high correlation in terms of intelligence and personality features, these values are not equal and these twins are different in terms of individual experiences (Bouchard, 1997). The individual experiences of identical twins are always different, even when they have been reared together with the same mother, the same father and the same environment, and there is no evidence in the field of psychology that these experiences can be replicated.