

# Prospect

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### About a face

#### **Moral revulsion at the idea of face transplants is misplaced. The science is important**

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ARLENE JUDITH KLOTZKO'S BOOK A CLONE OF YOUR OWN? WILL BE PUBLISHED IN JANUARY BY OXFORD UNIVERSITY PRESS

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There she is across that proverbial crowded room. And she's looking at you. Is she attractive? Is she attracted? You haven't had a date in months. Should you take a chance and approach her?

Your brain is specially equipped to make this sort of decision. In its most primitive part - the limbic system - there is an area that is dedicated to reading facial expressions. Scientists have discovered neurons that fire in particular ways when recognising features of faces so as to distinguish one face from another. They can also detect a person's mood based on his or her facial expression.

We communicate in many ways, but the crucial role of facial expression is perhaps most clear when we have a conversation with someone suffering from a disorder such as advanced Parkinson's disease, where the ravages of the condition have rendered the face an immobile mask. People with severe facial disfigurements necessitating multiple skin grafts not only have a mask-like appearance and restricted facial mobility, but their replacement skin (taken from other parts of their bodies) does not even look like facial skin. Some of these patients are so traumatised by their appearance that their social interactions are severely curtailed or even rendered nonexistent.

Could face transplants represent a realistic option for such people? The surgery itself would be a massive and complex undertaking, lasting almost half a day. As is the case with donation of a kidney or a lobe of the liver or lung from a live donor, there would have to be two teams. The brain-dead donor would be maintained throughout on a heart-lung machine. In the simplest type of operation - and the one most likely to occur first - surgeons would peel away the skin and the underlying fat (what they call a vascularised skin envelope). This would then be attached to the recipient after his own damaged skin and other tissue had been cut away.

If just the skin and fat were transplanted, the recipient's new face would probably be more mobile, more capable of expression and more aesthetically pleasing than a skin graft. But if surgeons went further and transplanted muscle, the challenges would be

enormous and a good result even less certain. The nerves to the muscles of the donor must be severed. Those in the recipient must be cut as well. The muscles would then have to be attached to the bones of the recipient and nerve function restored in the muscle, between the muscle and the central nervous system, and also between the skin and the nervous system. (If just the face and underlying fat are transplanted, only the sensory nerves would have to be cut and then regrown.)

Given the complexity of the task, things could go horribly wrong. Consider this possibility: what if surgeons were able to restore a semblance of physical attractiveness to a person who had been grossly disfigured but left him with impaired facial expression and sensory nerves? His new face would be more like that of a mannequin than a person. Even worse than partial success would be inappropriate functioning - facial muscles that disobey the instructions of the brain and produce frowns instead of smiles.

Last month, John Barker, who heads a plastic surgery team at the University of Louisville in the US, spoke to an audience at the Science Museum's new Dana Centre in London. He was quoted as saying "We believe we are ready... the right team could do it today." On the same day, the Royal College of Surgeons issued a report on face transplantation. Its president, Peter Morris, stated, "we do not feel that the time is right to see this experimental procedure." The college's examination of the issue was precipitated by the public alarm that greeted a statement by British plastic surgeon Peter Butler in November 2002 that he was within 18 months of being able to perform a face transplant on a badly burned boy. Butler has since backed away from this statement. The Louisville team also says it does not intend to attempt a face transplant any time soon.

Problems with muscle function are not the main reason for the caution. The risks associated with the lifelong regimen of immunosuppressive drugs that must be taken by the patient are clear - increased incidence of cancer, accelerated heart disease, and susceptibility to deadly infections. While taking such risks is eminently reasonable when the organ transplant is necessary to save a life - provide a new heart or liver, for example - it is harder to justify for a non-vital transplant such as the face or the hand.

Indeed, the record on hand transplants should give us pause. About 20 have been done to date. The first partially successful operation was carried out on an Australian, Clint Hallam, in Lyon in 1998. He was unhappy almost from the beginning. He complained about the side effects of the drugs - what he likened to perpetual flu. He stopped taking them, the hand deteriorated and it was finally removed. Other patients have adjusted much better and they still have their new hands. The second recipient was a patient of Barker's in Louisville. Matthew Scott is approaching his fifth anniversary with a new hand and is said to be doing well. He can now open a door, tie

his shoe, and pick up coins. He feels heat and cold but not as well as he does with his other hand. He has some fine movements, but not many.

The results of hand transplants do not augur well for face transplants of more than the skin and underlying fats. If only some fine movement was restored a face would not be able to register a range of expression or integrate the personality of the recipient with his new musculature. Moreover, the research done so far does not support going forward. Barker has not tested the success of muscular function after transplant. He has done no work with non-human primates. He has merely transplanted faces from one corpse to another.

A living person with the face of someone who is dead certainly sounds macabre. It reminds us of Frankenstein's monster, who was assembled from bits of the dead bodies his creator found in charnel houses. It is not surprising, then, that the reaction to the prospect of face transplantation is almost uniformly negative.

While there are legitimate moral issues raised by the prospect of face transplantation, they are not in the forefront of public discussion. Instead it is what I call our moral intuitions - the range of attitudes and beliefs, ideals and aspirations that we use to guide our lives and formulate our responses to the world - that have carried the ethical baggage. These intuitions are often the sorts of emotionally charged, metaphorically laden, visceral responses that are evoked by literature and film. (The news about face transplants made many of us think of John Woo's film, *Face/Off*.) Reliance on moral intuitions as a substitute for moral judgements can produce cloudy thinking, bigotry and a rejection of science and its promise for improving human health.

With respect to face transplants the most prevalent moral intuition is the "yuck factor" or "the wisdom of repugnance" as Leon Kass, President Bush's chief bioethics adviser, put in rather more elegant language. But consider the public reaction to the first heart transplant or to the first so-called test tube baby, Louise Brown, who was born 25 years ago in Britain as a result of in vitro fertilisation (IVF). There was utter horror. Now both procedures have very few critics - even Leon Kass has changed his mind about IVF - and they have become a part of mainstream medicine.

So what are the real moral questions surrounding face transplants? Is it right to risk the deadly effects of long-term immunosuppression for anything short of saving a life? Could the public disquiet surrounding the procedure widen the already severe gap between the supply and demand for donated vital organs (hearts, livers and kidneys)? Will people tear up their donor cards out of fear that someone else will wear their face after their death? Will families refuse to consent to any transplant because of the same fear or because of the disfigurement of the corpse that only face and hand transplantation necessitates? And, finally, how can we ensure that a desperate person

- so disfigured that he dreads even going out of his home - can give truly informed consent to an experimental and risky operation?

While this last question applies to a wide range of medical interventions, it is an especially important question to ask in the case of face transplants. This procedure is intended to increase the quality of patients' lives, not to save them. In the memorable words of Barker's spokesman, their team has not quite worked out their "exit strategy" in case of failure of a face transplant. With a failed hand transplant, one would remove the hand and give the patient an artificial hand, a prosthesis.

Although doctors at Louisville have constructed a mask-like prosthesis for a patient whose face, including eyes, was destroyed by flesh-eating bacteria, this was a last-ditch device to save his life and clearly not an acceptable "exit strategy" for a failed face transplant.

The near universal shudder that greets the prospect of face transplants is not a fundamentally moral matter at all. It's about our increasingly precarious sense of identity, the same anxiety tapped by reproductive cloning - you would go on even after your death but it would be another you. Psychological concerns about double and mistaken identity are not new - they have been the staple of comedy for thousands of years. What is new is medicine's ability to give substance to these fears.

What makes you you? In the age of gene-speak, most of us think it is our genes but if that were true, identical twins would be exactly the same and, of course, they are not. Personal identity extends far beyond genetics - to our personalities, behaviour, our memories and, of course, our faces. What would it be like to look in the mirror and see a new and very different face? It would be unsettling, but the disfigured recipient of a face transplant has already endured this experience.

What would it be like for the family of the donor? Could they see someone walking down the street and recognise his or her face as that of their lost loved one? Most experts say no, because the underlying bone structure is so crucial to face recognition. But with the nose, ears, and lips all transplanted to a recipient who had already been matched to the donor by age, sex and race, who knows?

When Michael Jackson comes to mind, the first thing we think about - at least until recently - is his extraordinary surgically modified face. Every feature has been transformed, as has the colour of his skin. The extent of his metamorphosis evokes not only his strangeness in our eyes but the spectre of the super-rich being able to buy young and beautiful faces of the dead. Cosmetic interventions are big business and some people don't seem to know when to stop. The nose job, facelift and tummy tuck have been joined by Botox injections for every wrinkle, liposuction for every sag

and, among my own neighbours on Manhattan's upper east side, cosmetic surgery for the feet so they will better fit into designer shoes.

Whatever we may think about the indulgences of the self-indulgent, face transplantation is a different matter altogether. If it is done, it will be rare. It will be medically necessary. It will carry risks. Research will and should continue. The psychological suffering of the severely disfigured demands it.