# ON REPLICATING PERSONS: ETHICS AND THE TECHNOLOGY OF CLONING

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When Ian Wilmut's little lamb, Dolly, was introduced to the world in February of this year, many around the world trembled. Biotechnology had previously dismissed as impossible the whole project of cloning mammals from specialized adult tissues. True, it was known that DNA coding for the whole organism is present in every cell, but experts had widely believed that the process of specialization itself—cells becoming bone, brain, or breast—disqualified such "used" DNA for new reproductive work. Wilmut, whose name will be long remembered in the pantheon of world-shakers, persevered despite received opinion, and showed how it could be done.

His recipe—not difficult by contemporary biotechnological standards—was as follows. First, a specialized adult cell (in this case a mammary cell from the udder of a white-faced Finn Dorset ewe) was starved of nutrients to make it quiescent. Second, all DNA strands from an ovum taken from a Scottish Blackface ewe were removed, thus eliminating all Blackface genetic characteristics from the egg cell. Then, when these were prepared, the quiescent mammary cell, with all its Finn Dorset DNA intact, was inserted under the delicate membrane covering the much larger ovum. Then the two cells were given an electrical shock to open their pores and start development. The contents of the smaller mammary cell, containing the Finn Dorset code, came through the open pores of the egg cell, and the Blackface ovum—thus tricked into believing it had been fertilized—started to divide according to instructions received from the its new Finn Dorset DNA.

Here the normal stages of *in vitro* development took over. At first an embryo's cells merely replicate themselves, without specializing, but after six days they draw themselves into a hollow ball, called a blastocyst, a formation appearing just prior to the cells starting to differentiate into the organism that is to be. At this point, the Wilmut team implanted the developing embryo into the uterus of a Blackface ewe. In due course, after a normal pregnancy, the

Blackface surrogate mother gave birth to the charming little white faced Finn Dorset lamb we know as Dolly, so named in honor of the (parenting) mammary gland's most prominent human exponent, Dolly Parton. And emerging together with lamb 6LL3 (as Dolly was more prosaically known), came the genie of adult mammalian cloning, now irreversibly released from its bottle of presumed technical impossibility.

The world received the news of Wilmut's triumph with a mixture of wonder and alarm. Although the Roslin Institute, near Edinburgh, where Wilmut's team did its historic work, was aimed exclusively at finding genetic ways of improving farm animals so as to benefit humans with better meat, eggs, milk, and wool, the immediate reaction was (predictably) anthropocentric in other ways. Though Wilmut may have had sweet dreams of engineering cloned cows capable of giving low-fat milk straight from the udder, many who learned about Dolly fretted over the nightmare of Frankenstein's monster.

Public opinion polls taken in the United States soon after the announcement showed a two-thirds rejection of cloning. (NBC News*Wall Street Journal*; see *New York Times*, June 15, 1997). Asked whether cloning is "a good thing or a bad thing," 64% of Republicans polled answered "a bad thing"; and in a rare burst of bipartisan harmony, 65% of Democrats answered in the same way. Only 23% and 21%, respectively, thought it was "a good thing." Though this poll did not directly refer to human cloning, an earlier one, conducted only a few days after Wilmut's announcement, and focusing on human cloning, revealed that 87% of Americans believe that the practice should be banned, while 93% personally would not choose to be cloned (ABC News, February 24, 1997).

Reasons for dismay and revulsion are not hard to find. Some are repelled by the narcissism that might run rampant if the rich and powerful were to start cloning themselves on ultimate ego-trips in search of biological serial immortality. Others worry that monied interests would be sure to make clones of great athletes and other idols of pop culture—rock singers, movie stars, and the like—and, even worse, that temporary, parochial standards of beauty and human excellence might be frozen into flesh. This could skew the human population and diminish the rich robustness of our species' gene pool. Inevitably, racist preferences would surface and those with the power of this technology would use it (with clear consciences, perhaps) to distort human genetic history, reflecting their conscious and

unconscious prejudices.

Even more grisly fears prompt this widespread revulsion. Some imagine cloning as creating a great underclass, the Clones (or "Replicants" as the film, *Blade Runner*, called them), who would be at the mercy of the class of "real people," produced in the old-fashioned sexual way. Some assume that these deliberately engineered beings will remain property of their makers, ultimately being enslaved to their designers. Some, even more terrifyingly, think of the Clones as being maintained as mere organ farms, manufactured and raised for their spare parts by persons anticipating the need for transplanted hearts or kidneys, livers or lungs. Growing one's own genetically-identical stand-by spare parts would defend against organ rejection and assure a ready supply in case of need.

For some, in contrast, the announcement of Dolly's appearance spread joy. In my class on "Technology and Values," February 1997, already engaged with issues of biotechnology, one undergraduate woman student's instant reaction was that at last the world could be "rid of men." In the future, a woman could use some of her own tissue to provide the DNA for her own replication, then incubate her identical twin offspring in her own womb! She welcomed this development wholeheartedly. Some of my male students were less enthusiastic.

The fantasy aura surrounding these thoughts about cloning are not to be dismissed merely because they sound like science fiction. What is fiction in one generation becomes fact in another. The Wilmut success opens another door for human ethical decision and poses immense questions that the public and politicians are ill-prepared to answer. Many long for the genie to be safely back in the bottle. But technology has rolled on and we must grapple as best we can with the new situation.

It may help to realize that cloning is not in fact quite so new as the reports from Edinburgh make it seem. For some time cloning has been going on quite uncontroversially with plants. Replication by adult tissue rather than by sexual breeding is a useful tool, posing few if any ethical or metaphysical problems. If an experiment with a plant goes bad, we have few qualms in disposing of the failed materials.

Something quite close to cloning from adult tissues has also been proceeding in animal science. *In vitro* fertilization has been widely practiced for some time. The dividing of fetal tissue to make what amount to twins—or still more identical embryos—in a petri dish, and bringing these to term, is another useful technique for experimenters and breeders. It was a huge step to the cloning of adult DNA, but as with many achievements in science, it now fits into a context already waiting for it.

In animal science many more benefits can be hoped for, if adult cloning can be perfected. For one example, the livestock breeder's time-table will be greatly speeded if a known adult specimen can be replicated. The investor faces less risk and less wait for the investment's return. Again, when a desired trait is found in a specimen, this trait can be securely preserved by cloning and passed on, without worrying about Mendelian randomness. Still more, with genetic manipulation and cloning, animals can be engineered to produce scarce substances, such as insulin, needed for medicine. Perhaps organs suitable for a transplant into ailing humans can be designed with the help of clone technology. On July 24, to bring this down to earth, the Wilmut team reported several more lambs successfully cloned. But these, Dolly's successors, include a human gene in their organic makeup. Transgenic medicine is well on its way.

These anticipated benefits will not escape ethical scrutiny. For a genetically engineered sheep or (more likely) pig some day to donate its heart to an ailing human, it must be sacrificed. Animal rights questions will inevitably arise, since cows and sheep and pigs are intelligent organisms, sentient, and subjects of their lives. Not just the circumstances of their slaughter, but also the care and well-being of cloned animals—like the care and well-being of their naturally bred counterparts—is an ethical question posed sharply for those who take seriously human obligations to minimize suffering and maximize satisfactory experience wherever found. Such questions prick our conscience, but cloning alone is not the cause.

To some degree the same familiarity may be felt regarding the ethics of cloning human beings. Not all issues are unprecedented. One of the concerns of the National Bioethics Advisory Commission, in advising President Clinton to prohibit by law any American research involving the implantation of cloned human embryos in women's wombs, was the likelihood of generating human

monstrosities, and thus becoming entangled with the sensitive issues that would follow failed experiments: e.g., Should these experimental mistakes be aborted? Euthanized? Institutionalized? We can be sure there would be many mistakes. In order to produce Dolly, the Wilmut team began with 277 fused cells, of which only 30 began to develop. Twenty-nine blastocysts were implanted in surrogate wombs, but of these only one managed to grow into a healthy lamb. In any technological development, wastage is a certainty. But what do we do when the "waste matter" is a viable human embryo? Before this quasi-familiar ethical quagmire the National Commission decided to draw back, though (interestingly) they did not recommend prohibition of privately funded research on pre-implantation-stage human fetal tissues. Fusing human eggs, initiating the multiplication of human cells in early embryological studies, may go forward, though not by public funding.

In another way, the ethical issues are as familiar as identical twins. In respect to their genetic identity, such twins, derived from the same egg, have much in common with clones. They share exactly the same DNA code. They are not literally clones, in the sense that they are neither engineered nor asexually produced. And they also differ from Dolly's case in that, until now, identical twins have normally shared the same uterine environment and have been of the same age. Dolly's "twin," the ancestral adult whose DNA code Dolly exactly shares, was six years older and did not spend time in the womb with her. In a post-Wilmut world, we need to be able to speak about identical twins of different ages, born at widely separated times, possibly to different mothers.

Let us make the realistic assumption that cloning human beings will be accomplished before long, somewhere in the world, with or without well-intentioned but unenforceable regulations. The technical barriers, as biotechnology goes these days, are not particularly high. The lure to be the first is extremely strong. And there will be many rewards besides fame. Especially since experimentation will be allowed to go on, just up to the implantation of an otherwise viable embryo, we can be sure that the temptation to implant will be irresistible. Of course there will be failures and wastage, but not everyone has a conscience about such things, and sooner or later (my guess is sooner) there will be born a human Dolly, the first of many.

How shall we treat the first cloned human neonate? Will it be the

property of the laboratory team or the company that engineered its existence? Will it arrive trailing a cloud of patents? This would follow the lamb model of cloning. But this is genetically a human baby. Are we ready to slide into the habit of treating some humans as chattel? For the greater part of human history some humans have owned other humans. Only recently, post-enlightenment, have the dominant societies of the world rejected chattel-servitude in principle. Even today there remains much slavery in the world. How much worse than ironic it would be if biotechnologies of our post-enlightenment era were to return us to these ways of thinking and thus to these practices. But this seems to be the presumption of those who picture clones as property, clones as unconscious zombies, or clones as being farmed for their organs.

We must recognize that huge pressures are exerted by triumphal capitalism, these days, to look at everything through the image of the marketplace and with proprietary reflexes at the ready. If we engineer and manufacture something, it is our property, is it not? A clone is something engineered and manufactured. *Q.E.D.:* we should be able to dispose of clones in any way we find convenient. Is this not obvious?

I hope others' ethical intuitions shout with me: No, not at all! Here philosophers of technology are especially qualified to raise ethical protest. For something to be the product of a technological process—for intelligent purpose, that is, to have been a significant factor in that thing's causal history—does not automatically strip it of its inherent value. On the contrary. The principle of justice requires that significant inequalities in treatment should be condoned only where morally relevant differences justify discrimination. Are there such differences between clones and non-clones? It seems hard to imagine what they could be. The body of a cloned human individual will differ from his or her older "twin" (the DNA donor) only historically, in respect to the first stage of the ovum, as fused rather than fertilized, followed by a few days of development in a petri dish. Is this early genetic history enough of a difference to justify loss of civil rights, second class status, or even death from involuntary donation of vital organs? Is such a difference morally relevant at all?

We cannot read the answer from any ancient text. This is an unprecedented issue and society needs to decide. Some societies, alas, have made trivial differences the basis for major discriminations. At one time the Greeks

tried to justify enslaving the barbarians because they did not speak proper Greek; modern white Westerners tried to justify enslaving men and women on the flimsy basis of different skin color. But after years of agonizing conflicts, the dominant judgment has now (at least temporarily) jelled that these are not morally relevant differences. We should be warned by the word, "temporarily," not to suppose that ethical decisions, once made, are secure forever. On the contrary, they need continual reaffirmation if they are not to be lost.

When clones appear among us, if we think of them under the model not of livestock but of human identical twins, it may help us recognize that human clones will be, above all, human *persons*. We would shudder to think that one identical twin could claim the use the other as a mere organfarm. Each twin has equal right to his or her own organs. This seems obvious, but why? Is the reason merely that they are of the same age, or nearly? If one should be an hour older than the other, would this warrant chattel ownership? If not, why should the mere passage of time between births constitute a morally relevant reason for harmful discrimination?

Take the other differences. Is having spent a few days in a petri dish, as an embryo, enough to strip an adult of the protections of human and civil rights? In an era of test-tube babies, the negative answer is obvious. Their early genetic history may be artificial, but these babies are no fakes. Real children come from the process, no matter how much the interventions of intelligence played a causal role in their coming to be. (See Ferré, 1995, pp. 32-35.)

Finally, could the mere absence of a father from the clone's *immediate* genetic history (there was paternity at some point) count as a morally relevant difference, one warranting enslavement or other such discriminations? How could such an argument be sustained? The full complement of human DNA is present in a clone. In the clone's case, it was not brought about by the usual sexual lottery. That is all. This difference does not make the resulting individual any the less complete. We need not be radical feminists, like my student—so ready to rejoice in the irrelevance of males—rightly to reject the chauvinist idea that the mere lack of a father would morally justify inflicting harm on an otherwise whole human person.

The intuition remains, then, that human clones will be human persons.

They will deserve every consideration, every right, every protection that any other person can rightly claim. But is there a deeper basis for this intuition? And, contrariwise, is there something about cloned persons that *justifies* discriminating them from livestock—in this case, from Dolly? Dolly is uncontroversially someone's property, as our moral intuitions tell us human clones should never be, if they are persons. But is this just? If the principle of justice *prohibits* non-clones from discriminating against clones, how can the same principle *allow* discriminations between human clones and lamb clones? Why, in a deeper sense of why, should we feel under obligation to treat persons differently from livestock? Without a morally relevant difference, the discrimination would be arbitrary and unjust. This leads us from the ethics to the metaphysics of personhood.

On entering uncharted waters, society needs trained philosophers, at least to function as critics of ill-considered answers to metaphysical questions carrying heavy ethical freight. Popular metaphysics abounds. The President of the United States offered a metaphysical preamble to his recent order banning the use of Federal funds for human cloning research when he said: "Any discovery that touches upon human creation is not simply a matter of scientific inquiry. It is a matter of morality and spirituality as well. Each human life is unique, born of a miracle that reaches beyond laboratory science. I believe we must respect this profound gift and resist the temptation to replicate ourselves (quoted by Jeff Rubin, ABC News, June 4, 1997).

This statement could doubtless start a philosophical dialogue, but no philosopher will be content with it as it stands. President Clinton cites "uniqueness" as a clue to the morally relevant difference between persons and non-persons; and uniqueness is indeed an outstanding trait of persons, but what is crucial is not *mere* uniqueness but, rather, the *kind* of uniqueness that persons can enjoy. If any of the current protagonists can lay claim to sheer uniqueness, it is Dolly, the first successful mammalian clone. But Dolly will not gain the vote, or protection against being treated as chattel—too valuable in practice (but not, as the meat industry sees it, in principle) to waste as lamb chops—as a result of her mere uniqueness. Dolly is unique, but not with *personal* uniqueness.

President Clinton also cites a "miracle." That is a word harder for philosophers to assess. In one of its senses a miracle is wholly opaque to reason,

and meant to be so—a discussion-stopper thrown in the path of understanding. Philosophers, as critics of obfuscation, are obliged to point this out. But this need not be the intent of the word. In another accepted sense of the term, every new life is an occasion for wonder and awe—a miracle of complexity brought to functioning unity through differentiation and internal relatedness. In that sense, however, Dolly's origins—not just those of human persons—are worthy of awe and wonder, too. This miracle of life by itself does not make Dolly a person, but it reminds us that nonpersonal animals (and other living things) may be worthy of far more respect than our current market practices allow.

One positive function of President Clinton's statement is to challenge, in a highly visible way, the widespread popular metaphysics of reductive scientism, his implicit opponent and the target of his denial that the human cloning issue can be considered "simply a matter of scientific inquiry." The president's evocation of "morality and spirituality as well" makes it clear that the categories of eliminative materialism are in his estimation not comprehensive enough to undergird the making of satisfactory public policy.

I agree with this estimation. But all of us in philosophy are aware how strong the gravitational pull of eliminative materialism can be, even for those who struggle to escape it. Consider, for example, the recent invasion of our field by zombies—or, more accurately, by thought-experiments about zombies (See Chalmers, 1996.) On the surface, these may seem innocent fun, but they actually reveal deep inadequacies in what might be called the underlying modern metaphysical paradigm.

The crucial modern presumption, which nearly all fashionable philosophers seem to share, is that when it comes to the elementary constituents of the natural universe, their "default condition" is to be completely bereft of internality—just like zombies, for which, in David Chalmers's (1996, p. 96) now-famous phrase, "all is dark inside." Or (in a nice twist on Tom Nagel's famous phrase, 1974, PP. 435-450), "There is nothing it is like to be a zombie." This paradigm of default darkness makes the fact of widespread experience in nature a huge—and yet-unsolved—problem for those who remain stuck in this modern world-model. (See Ferré, 1996.)

Owen Flanagan, from Duke University's departments of philosophy,

psychology, and neurobiology, and Thomas Polger, from Duke's department of philosophy, beautifully illustrate this stuckness in their article, "Zombies and the Function of Consciousness" (Flanagan and Polger, 1995). In it they extol the usefulness of zombie thought-experiments on the ground that these will spotlight "consciousness inessentialism," which they adopt. Given this, they show that within their paradigm, for which darkness is the default and experience completely inessential (i.e., nothing would happen otherwise if all awareness were eliminated from the world), the problem is not merely to show *how* "brain states could give rise to phenomenal states" (though they acknowledge this has proven hard enough), but even worse, to show *why* "it is that there came to be conscious creatures at all. Why did evolution result in creatures who were more than just informationally sensitive? There are, to the best of our knowledge, no good theories about this." (Flanagan and Polger, 1995, p. 325). They stipulate that we are indeed conscious. But then they add: "Assuming this is true, but that it is also true that there was no metaphysical, logical, or nomic necessity in making us so, why did Mother Nature settle on 'being subjects of experience' as a good solution strategy for us, and quite possibly for numerous other mammals and other genera?" They have no answer. And, given their assumption that experience is metaphysically, logically, and nomologically irrelevant, there is little likelihood that they will find one.

Chalmers adds the explicit assumption of "explanatory irrelevance" to his treatment of inessential consciousness, which follows inevitably from his unquestioning acceptance of the default darkness of nature together with a further assumption of the causally closed character of the physical order. For any activity that seems to require explanation in terms of experiential awareness, he concludes, there must be a full explanation that leaves experience out of account. "We certainly do not know the details of the explanation now," he admits, "but if the physical domain is causally closed, then there will be some reductive explanation in physical or functional terms" (Chalmers, 1996, p. 178). That will be the explanation that fully accounts for how zombies can do and say everything that we do and say, while remaining in the default state of darkness; it also (unfortunately) will on this assumption also be the explanation which fully accounts for all our own *non*-zombie behavior and speech—leaving our mysterious consciousness to flutter irrelevantly as an extra domain of brute experiential fact.

This sort of talk drives John Searle and Daniel Dennett—allied for once—into frenzies of rejection, for quite different reasons. Dennett rejects Chalmers-type zombies as unimaginable, since for him they represent a distinction without a difference from our actual human situation. For him the important differences are between *simple* "dark" behavior-emitters, like luna moths (which he will agree to call zombies, if he must), and *complex* "dark" behavior-emitters, like ourselves, which he prefers to call "zimboes" (Dennett, 1995). Flanagan and Polger were mistaken, according to Dennett, in supposing that there is any difference between "experiential sensitivity" and "informational sensitivity." Therefore, Dennett concludes, "Flanagan and Polger compound this mistake when they go on to ask what the adaptive advantage of consciousness (as contrasted with mere 'informational sensitivity') would be." Dennett is so whole heartedly in favor of the modern paradigm of interior darkness that he rejects any difference between zimboes and ourselves. If this be *reductio ad absurdum*, he suggests, then make the most of it. Very well. I accept his defiant invitation. With Searle, Chalmers, Flanagan, *et al.*, I believe "absurd" is exactly the right word—indicating a complete dead-end for the modern paradigm of default darkness.

John Searle turns his own *reductio* weapon against Chalmers's zombie-talk, characterizing it as a futile effort to paste together reductive physicalism, functionalism, and Strong AI with the undeniable, self-luminous facts of subjective phenomenal experience. Searle, unlike Dennett, takes the phenomenal as primary; and unlike Chalmers and friends, takes functionalism as ill-considered theory. What seems to irk Searle most is the presupposed explanatory irrelevance of consciousness—the "consciousness inessentialism"—that underlies taking zombies seriously, even in thought. Getting married is a behavior that could be exactly mimicked by my unconscious zombie twin; thus, when I get married, the explanation, according to the absurd irrelevance theory, can have nothing to do with my being consciously in love with my bride. Even *feeling* a toothache pain must on this theory be explanatorily irrelevant to my *saying*, "I feel a toothache," since my speech is "a physical event in the world like any other and has to be explained entirely by physical causes" (Searle, 1997, p. 48). Chalmers's commitment to the fashionable functionalist program prompts him to drive over the cliff rather than admit the road has ended. Searle concludes: "It is to Chalmers's credit that he sees the consequences of his views; it is not to his credit that he fails to see that they are absurd."

I mainly agree with Searle. Apart from theoretical blinders it should be obvious that experience is a causal ingredient and an explanatory factor in the physical world. The philosopher's job is not to deny the obvious but to try to understand how it is the case. I just wish that Searle had not weakened his case by gratuitously joining his opponents in accepting the modern paradigm of darkness as the default condition in nature. Searle says, "Consciousness is above all a biological phenomenon and is as restricted in its biology as the secretion of bile or the digestion of carbohydrates" (1997, p. 50).

But that is too little to say. It is true that the only consciousness of which we are directly aware is based in our own biology. But our capacity for awareness of ourselves, the world, and unrealized possibilities—and our capacity to make new things happen on that basis of that awareness—is qualitatively and causally incommensurable with bile and digestion. Our human level of conscious awareness is grounded in a biological process made possible by the complex biology of the distinctively human body-brain system. But it is not in the least absurd to imagine that simpler biological processes may involve simpler, dimmer orders of awareness. Nothing is more plausible than acknowledging the (often not-so dim) sentience of our companionable pets. Chimpanzees and dolphins are near the top of the awareness scale, anchored at the complex end (so far as we now know) by humans, but it is not at all obvious where the other end may lie—or if there is any end beyond which entities lack all semblance of interiority. Further, speculating in the context of relational quantum physics and self-ordering chemistry, there is no absurdity in applying dynamic, evolutionary, organic categories at all levels in nature. Why not take something like low-level, preconscious feeling as primitive—the default condition for what it is like to be an entity?

No less speculative, the modern paradigm, assuming darkness as the norm for the inwardness of things, has gotten us nowhere in solving the problem of consciousness. Zombie talk and its fruitlessness—worse, its danger, if human clones (in part as its result) are imagined to be dark inside—should suggest to open-minded philosophers that the time is ripe for a new try at conceiving what it is like to be anything at all. We cannot really imagine what it is like to be something that "there is nothing it is like" to be. Why not reverse the default condition? Why not give a try at thinking in a sustained way about the universe as *organismic* "all the way down" in structure, *evolutionary* "all the way back" in

time, and capable of evolving conscious *persons* at the high end of a natural continuum of causally and explanatorily relevant awarenesses? I propose, in other words, that we consider the ethics of the new cloning technology in terms of an alternative worldview, something I call "personalistic organicism."

In a paper like this, I cannot possibly marshal convincing arguments in support of this worldview as a whole. I hope my 1,200 page trilogy, *Philosophy and Value* (Ferré, 1996 and forthcoming) will have that effect. But let me point to the helpful light that personalistic organicism can shed on the human cloning issue—and, in the same context, how it reflects further on questions about the status of animals, like Dolly, in our nonhuman natural environment.

Personalistic organicism rises from the synthesis formed by weaving together (1) the priority of personal values with (2) the profoundly comprehensive "philosophy of organism" pioneered by Alfred North Whitehead. Whitehead's personal self is a tightly knit sequence of what he calls the "dominant" or "ruling" occasions in the temporally successive, but internally related, society of experiential durations that constitutes the conscious, purposive, and morally responsible human psyche. No occasion is purely physical or purely mental. All are bipolar. In simple environments, the mental pole is practically negligible, but in extremely complex ones, especially within the human body, mentality is stimulated to significant levels of activity. This bipolar self is intimately tied, by internal relations, to floods of preconscious experience, amplified and funneled through the body's organs. As this experience becomes more complex and intense, the mental pole is increasingly drawn into play. As it rises toward consciousness, its achievements of experiential synthesis acquire ever greater intrinsic value. The human brain, with its billions of neurons in multiple networks of relatedness, is the most complex structure in the known universe. This living complexity is the feeding ground for what constitutes the human person. The body's organs, as living sub-societies, select, intensify, transduce and transmit to the brain their modes of experience, gathered from within and without the body, thereby providing rich cascades of information—often in tension—demanding active harmonization innovated by the conscious ruling occasion, itself located at some nodal focus of all this complexity during its moment of subjective self-actualizing. The intensity of contrasts becomes so great that as consciousness awakens, present actuality can be explicitly contrasted with absent possibility. This contrast allows the initiation of novel valuations—positive

and negative—about the possible. Sometimes the lure (or threat) of new possibilities is pursued with such a steady subjective aim toward the future that by directing body and mind, the personal self can gradually weave concrete actuality for the world out of what once had been only abstract dreams. In this way, personal values shape history.

This thumbnail sketch is too compressed to do justice to the philosophy of organism's account of the human person. But providing details is not possible here. The present point, rather, is what happens when personalistic organicism is asked about human cloning, and about Dolly.

First, personalistic organicism, as a variety of *organicism*, will need to acknowledge the profound relevance of Ian Wilmut's embryological work for the possible replications of human beings. The lure of this possibility, as I said earlier, is almost surely going to result in its actualization. Perhaps the implorings of childless couples, or grief over the impending loss of a dying child—or other less benign motives—will furnish the steadiness of subjective aim, but, whatever the impulsions, we should be prepared for the arrival of human clones among us. As I have argued, these clones will be full human beings. But if personalistic organicism is correct, these full human beings will, as they develop toward maturity, be *partially self-creating* of themselves as the persons they become. *This* is the "miracle" in personhood, that each person is to a significant degree opaque to predictive science because each person is partially self-determining, within the twin constraints of the capacities provided by genetic endowment and the opportunities and challenges provided by environment. The miracle of personhood is that neither nature nor nurture—nor any combination of the two—is fully determining. Thanks to the unique complexity of the human organism, human mentality is capable of recognizing and naming regularities of experience, giving rise to language and thus to the powers of dealing freely with possibilities even in their quite remote absence from the concrete immediate environment. Possibilities, once actualized, lead to new, fractally branching trees of actuality and to still more possibility, making identical twins different persons, and assuring that identical clones—having even less in common than identical twins, who share the same uterine environment—will also be quite different persons from their ancestors, or from other cloned "twins," however much alike their DNA may be. Personalistic organicism puts a full stop to the notion that *persons* can be replicated. Human organisms can and almost certainly will be cloned. But

human persons, never.

Second, personalistic organicism, as a variety of *personalism*, needs to express what about human personhood makes for the morally relevant difference between human persons and other sentient subjects of a life like Dolly (including other normally bred farm animals, and wildlife, too). I believe the difference is not absolute; it lies—like degrees of awareness—on a continuum; but nonetheless this difference is real and vital. The key difference is in the intrinsic value possessed by experience that is freed, primarily by language, to soar in domains of symbolism and possibility unleashed from the givens of surrounding actuality. This freedom is the necessary condition and source of human purpose, the capacity to plan for a far-off time. On this capacity the whole of civilization depended and remains dependent. This is also the source of human awareness of death, adding that special personal intensity of value to passing finite events. This is the source of ecstasy; the source of agony. Here at last is the special sort of personal uniqueness that distinguishes each human person from every other, and all human persons from other sentient beings, whose mental lives are tied more tightly to the here and now.

But here personalistic organicism—while illuminating the morally relevant difference that justifies treating human persons with special dignity, born of the special capacity to plan and be responsible, to suffer guilt and create symphonies—does not deny intrinsic value to nonpersonal centers of longing and curiosity, need and satisfaction, such as Dolly and other sentient organisms.

Materialistic monism, at one extreme, grants no intrinsic values anywhere in nature. Traditional dualism, at the other extreme, protects human persons from zombie status, but fares no better on Dolly, if only human spirits are granted intrinsic value. But personalistic organicism can distinguish *degrees* of value, honoring personhood as special without denying genuine intrinsic values in the world of nature. From a full Whiteheadian point of view, the whole of nature is vibrant with value, down to the least pulse of cosmic energy, but this is not the issue here. At least obvious sentience has value. Dolly counts for something in herself. She is the subject of a life. Though she has mental powers, she is not a personal subject. She cannot soar mentally far from her sheep pen; she does not know she is mortal; she does not claim the special dignity of self-creative personhood—that is, it does not violate her status to be the property of another, as

long as her owner is attentive to her needs. She is a clone, but she is also a sensitive organism. She cannot claim to have *rights*, since such abstractions are not part of her vocabulary, but morally responsible human agents do have *duties* toward her, as part of their duty to act with appropriate respect for all value, wherever found.

When human clones appear among us, they will be owed duties, too. At first they will be infants, and will depend (like Dolly) on others. These caregivers will be obliged to respect the great value of these infant clones as human beings and thus potential persons. After a while, given suitable nurture, they will realize their potential, will learn language, and will be able to claim rights—full human rights—for themselves. In so doing, they will be confirming the validity of their claim, since in making this claim they will be functioning as only persons can. Although cloned, they will not have "replicated personalities." "Replicating persons" turns out to be a theoretical impossibility. As human persons, they share in the miracle of their own self-creation.

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