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EDITORIAL

GODSEND OR GOD'S END?

Okay, so it's not going to win any Academy Awards and go down in cinematic history as a work of art, but seeing this year's Lion's Gate movie *Godsend* is an interesting exercise. And, the film has caused quite a stir among some members of the biotechnology guild.

The official website is something to see (www.godsendthemovie.com). Complete with a link to the "GodsendInstitute," a *faux* fertility center, the website abstracts the narrative that informs the screenplay.

Paul and Jessie Duncan (Greg Kinnear and Rebecca Romijn-Stamos) are parents of Adam, their only child, who dies tragically. Dr. Richard Wells (Robert De Niro) presents the couple with a Faustian bargain: even though the procedure is illegal, if they will agree to the terms, he will clone their son in his clinic, the Godsend Fertility Clinic. Without spoiling the movie for you, I can say that with the exception of some frightening twists and turns along the way, the issues the movie raises are predictable by those who are familiar with the cloning debate. Of course, not everyone is familiar with the cloning debate.

Some of the issues are well-presented; some are pure fiction. For instance, cloning does not include a mind meld between the clone and the cloned. There is no reason to believe that just because one person has the same DNA as another that they would share memories or experiences. And the idea of transferring the contents of one's mental states from one person to another relies on a reductionism beyond belief.

Arguably, reviews of the film were more entertaining than the movie itself. Bioethicist Art Caplan said that he is concerned that the movie rehearses harmful myths about cloning and opined that "There are no legitimate scientists out on deserted islands trying to clone for fun and profit, and even if there were, their chances of successfully making a living human person are remote if not zero" (<http://www.msnbc.msn.com/id/4865240/>).

Former director of the National Institutes of Health, Harold Varmus, revealed more than a little agitation about the movie in his *New York Times* editorial when he claimed that "...in the new movie 'Godsend,' the horrors do not arise from the biological dangers that have led responsible scientists and knowledgeable citizens to oppose human cloning. Horror flows instead from the malicious act of a diabolical doctor—an act that, unlike cloning itself, lacks any significant scientific basis" (<http://www.nytimes.com/2004/05/02/movies/02VARM.html>).

In the words of yet another playwright: "Methinks they dost protest too much." Caplan failed to define "legitimate" scientist and at least left open the slim possibility that someone might be able to bring a cloned child to terms—and for good reason. He realizes that it *could* happen. Varmus knows that bad science and bad scientists do exist, even if most scientists are themselves very nice people. Media-addicted andrologist Panos Zavos is a reminder that scientists are not immune to bouts of megalomania. At least once per quarter Zavos must have his fifteen minutes of fame as he announces some novel venture in human cloning.

Both Caplan and Varmus seem to ask us to do what the film asks us to do: suspend our disbelief. Human cloning for research purposes is benign, they say. *Godsend* will confuse the public. In their priestly roles of bioethicist and scientist, Caplan and Varmus claim to interpret the movie for the public, telling the public what to think about its content.

But, the movie is merely a thought experiment. And like the movie *GATTACA*, this film asks us to consider what the world might look like if certain decisions were made along the way, or, worse, if certain indecision prevailed. One doubts that director Nick Hamm believed that he was portraying all the facts about cloning (though the description of the procedure itself seems fairly accurate). It is after all, science fiction.

Doubtless, public naivety about matters of science raises real concerns about the future of science, and, as importantly, about science policy. For this reason, audiences should take what they see in the movie with a grain of salt. The movie should stir them to investigate the science and ethics of cloning for themselves. Then, they themselves can separate the fact from the fiction.

But one thing seems certain. Cloning is no *Godsend*. The most frightening line in the film may be when Kinnear's character says to Dr. Wells, "What you're talking about is illegal, not to mention potentially immoral." Potentially immoral? Cloning a human being for the purpose of dissection in the research lab or for nurturing in the crèche is *actually* immoral. Only in a postmodern worldview are matters as grave as human cloning "potentially immoral."

C. Ben Mitchell, PhD

Editor

A NEGLECTED SOLUTION TO THE PROBLEM OF THE METAPHYSICAL AND MORAL STATUS OF THE HUMAN-ANIMAL CHIMERA

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Introduction*

Biotechnologies that seek to create human-animal chimeras raise many interesting philosophical questions, and these questions are of different kinds. Some of these questions are primarily *metaphysical*, focusing on the nature and proper biological classification of human-animal chimeras. Some of these questions are primarily *moral*, focusing on ethical aspects of the creation and treatment of human-animal chimeras. Finally, some of these questions are primarily *epistemological*, focusing on how we can *know* or *reasonably believe* certain things about human-animal chimeras.

These various philosophical questions are not completely independent of one another; they relate to each other in various complicated ways. Still, it is helpful when possible to keep the questions distinct in our minds. The purpose of this present essay is to treat one specific metaphysical question and one specific moral question. The *metaphysical* question is whether it makes sense to consider the possibility that the human-animal chimera could be a member of two different species at the same time. The *moral* question is what moral status we should accord to a being if we believe that being *is* in fact a member of two different species.

The answers I offer to these two philosophical questions will rely on a particular sort of Christian theology—namely, what is often referred to simply as “orthodox” Christian theology and what C. S. Lewis called “mere Christianity.” This theology has among its central claims two which relate directly to this essay: the claim that Jesus is one person possessing two natures, and the claim that God is three persons possessing one nature. We can accent these two claims by referring to the view as *duophysite Trinitarian* Christian theology. Since I wish to avoid cumbersome formulations throughout the paper, I will simply refer to this view below as “what Christians believe,” and since I count myself and many of my readers as adherents of this view, I will often use the first person plural voice, speaking of what “we” believe. If the reader does not share these assumptions, she should simply substitute the longer phrase, “duophysite Trinitarian Christians” in the appropriate places.

In answering the *metaphysical* question posed above, I argue that the doctrine of the Incarnation, and in particular the doctrine of the two natures of Christ,

provides good reasons for thinking that such a two-species creature is possible. Just as Jesus was fully human and fully God, it makes sense (even if it never in fact comes about) that a human-animal chimera could be fully a member of species *a* and fully a member of species *b*. In answering the *moral* question, I argue that the doctrine of the Incarnation helps us arrive at what I will call the *Maximum Respect Principle*: namely, that if the moral status of an *a* (something with nature *a*) is greater than the moral status of a *b* (something with nature *b*), then a thing with both natures has the moral status of an *a*.

Methodology

I believe that a Christian response to the issues raised by human-animal chimeras should embody at least three features: it should be unapologetically theological, multi-disciplinary, and forward-looking. First, Christians should be deliberate and unashamed about integrating their theological knowledge with conceptual issues in the various sciences and the various branches of philosophy. When so integrating, our approach should go beyond what J. P. Moreland calls the “doxological approach” and should embody what Thomas Morris calls “theological realism.” According to the doxological approach,

The Christian integrator holds to and teaches the same beliefs about his/her subject matter that non-Christians accept but goes on to add praise to God for the subject matter. Thus, the Christian biologist simply asserts the views widely accepted in the discipline but makes sure that class closes with a word of praise to God for the beauty and complexity of the living world.¹

Moreland rightly recognizes that although the doxological approach is good as far as it goes, it does not go far enough. He therefore goes on to develop and utilize a fuller and more comprehensive approach in articulating a robust Christian anthropology. This is the sort of approach described by Thomas Morris:

The Judeo-Christian religious tradition is not just a domain of poetry, imagery, mystical transport, moral directive, and noncognitive, existential self-understanding.... I [take for granted] *theological realism*, the cognitive stance presupposed by the classical theistic concern to direct our thoughts as well as our lives aright. It has been the intent of theologians throughout most of the history of the Christian faith to describe correctly, within our limits, certain important facts about God, human beings, and the rest of creation given in revelation and fundamental to the articulation of any distinctively Christian world view. In particular, reflective Christians throughout the centuries have understood their faith as providing key insights into, and resources for, the construction of a comprehensive metaphysics.²

Second, a Christian perspective should be collaborative. Collaboration should be pursued between Christians trained in disciplines such as theology, philosophy, molecular biology, and biblical exegesis. We have much to learn from each other, and our contributions should be shared and shaped in the crucible of critical discussions across the disciplines. This is not merely a roundtable for the

expression of different viewpoints, as if mere diversity for the sake of diversity was the goal. Rather, we should be open to listening to others in the hopes that they might encourage us in those aspects of our own approach that are on the right track, correct us in those aspects of our own approach that are wrong, and fill out those aspects in our own approach that are too thin.

Third, a Christian perspective should be forward-looking. While it is important to out-think our current critics, put out the immediate ethical fires around us, and ameliorate present injustices, we cannot stop there. We should be thinking ahead of our future critics, preventing future fires, and setting up the intellectual barricades to stop or slow the injustices of tomorrow. For example, before cloning was even a remote technological possibility, it was appropriate for Christians to think about the moral and metaphysical status of clones. Since today's science fiction is often tomorrow's science fact, we should be willing to be bioethically prophetic in ways that mirror the paradigm prophets of our faith. God's prophets were both forthtellers *and foretellers*, proclaiming *and predicting* according to God's word. While our task as Christians engaged in bioethics is not necessarily to deliver inspired messages from God, nevertheless we should both speak to the present and to the future in using the claims of the Christian worldview to influence the world.

Human-Animal Chimeras: The Standard Options and the “Both/And” Solution

Let us begin with the metaphysical question: namely, whether it makes sense to consider the possibility that a being could be a member of two species at the same time. It is important to be clear about what this question asks. It is not asking about whether the technology of the future will ever allow us to combine the genetic material from a human and the genetic material from a mouse in such a way that a new viable creature is formed possessing a genetic “mix” from these two creatures. Even if the genetic mix were to involve (say) 50% of the genetic material from the human and 50% from the mouse, the question I am asking is not whether this will be technologically possible or not. It may well prove to be possible, but only time and technology will tell. What I mean to ask is whether a being with such a 50/50 genetic mix, or indeed whether *any* being of *any* mix, could ever properly be said to be *both* human *and* mouse.

One of the reasons for asking this question is that I think most people automatically assume the answer is *no*. In discussions of chimeras, the question usually thought relevant is whether the entity is a human *or* a mouse. The assumption that it could not be *both* is usually taken for granted. But is it true that the only options for classifying such a chimera are (1) the chimera is a human, (2) the chimera is a mouse, or (3) the chimera is neither human nor mouse? Is it not possible that (4) the chimera is *both* fully human *and* fully mouse? Let us call (4) the “both/and” solution. The “both/and” solution is a *neglected* solution to the problem of the metaphysical status of the human-animal chimera.

Reason for Resisting the “Both/And” Solution

One of the reasons for resisting the “both/and” solution is the idea that no individual thing can be a member of two biological *species*. Since biological species have often been thought to be paradigm examples of *natural kinds*, another way of putting this idea is that no individual thing can be a member of two distinct natural kinds. Since natural kinds have often been thought to be paradigm examples of groups of things distinguished by their different *natures*, a final way of putting this idea is that no individual thing can have two different natures.

Throughout the history of philosophy and theology, the concept of a *nature*, or an *essence*, has been both important and disputed. One of the easiest ways to grasp the idea of an *essence* is to consider what has been dubbed the distinction between *essential* properties and *accidental* properties. This distinction, and its relationship to a thing’s *nature*, is explained well by an example of J. P. Moreland and Scott Rae’s, in their book *Body and Soul*:

If something (say Socrates) has an accidental property (e.g., being white), then that thing can lose the property and still exist. For example, Socrates could turn brown and still exist and be Socrates. Essential properties constitute the nature or essence of a thing; and by referring to essential properties, one answers in the most basic way this question: What kind of thing is x? Socrates is a human kind of thing. In general, if x loses its essential properties, x ceases to exist.³

To see why this way of understanding a *nature* or *essence* might provide an obstacle to the possibility of a chimera possessing *two* natures (or *two* essences), we need to examine a second, and closely related, way to grasp the idea of an essence. This second way is to consider how an essence helps explain a given organism’s growth and development. According to a historically dominant and still very plausible view, an individual organism—for example, a dog named Fido—is a paradigm example of an individual *substance*. On this view, the sequence of lawlike developmental changes which go on in an individual substance like Fido are ultimately explained by the *nature* of that individual substance—in this case, Fido’s *doghood*. Although these lawlike changes are not reducible to the laws of chemistry and physics, nevertheless chemical or physical processes are employed by the nature as means for realizing the nature’s own latent potential. The “inner nature” of a given substance can thus be understood as “a dynamic principle of activity or change immanent within the individual substance.”⁴

So the *first* way of grasping the idea of a nature is to understand it as the cluster of essential properties which a thing must have to continue existing, and the *second* way of grasping the idea of a nature is to understand it as a principle of change which guides a thing’s growth. Bringing these two approaches together yields the result that a thing’s nature, as Moreland and Rae put it, “set[s] limits to the kind of change a thing can undergo and still exist and be counted as an example of its kind”:

If a substance breaks these limits, we say that the substance no longer exists. For instance, as a caterpillar changes into an adult butterfly, the

organism's inner nature specifies the precise sequence of stages the organism can undergo in the process of growth. If the organism goes beyond the boundaries of such a change—say if the caterpillar turned into a fish—we would not say that the caterpillar still exists as a fish; rather, we would say that the caterpillar ceased to be and a fish came to be.⁵

I think this result may present a potential obstacle to viewing a chimera as possessing two natures. To see why, imagine taking a caterpillar, putting it into a lab, and progressively giving it genetic material from a fish over a period of several years. If it “turned into” a fish as a result of this process, the caterpillar would have been transformed in such a way that its “caterpillar nature” vanished and a “fish nature” emerged. During the process of transformation, there would be no time at which the thing is *both* a caterpillar *and* a fish—not at the beginning, not at the end, and not at any stage in between.

Perhaps this underlying idea could be formalized in a principle. One such principle might read as follows:

Principle of Just One Nature at a Time: If something (x) possesses nature a at time t_1 , and comes to possess nature b at time t_2 , then x ceases to possess a at t_2 .

Someone committed merely to this principle would still have room for a creature to exchange one nature for another nature. Unfortunately, this principle is too weak to capture what Moreland and Rae are saying in the above quote. Suppose the caterpillar was named Moe. If Moe “turns into” a fish, what really happens is that Moe *dies* somewhere along the line, and *something else* (which we could call “Shmoe”) comes into being. In other words, the creature at the beginning of the process is not literally the same creature as the creature at the end of the process: the “ x ” at the beginning does not continue on to the end. Perhaps we could capture their underlying idea in a second principle:

Principle of Just One Nature for a Thing to Continue Existing: If something (x) possesses nature a at time t_1 , and then “turns into” something possessing nature b at time t_2 , then x ceases to exist at t_2 , and what possesses nature b is not x but some other thing y .

Someone committed merely to this second principle would still have room for a creature to *begin to exist* with two natures from the start (for example, if a male gamete from a creature of species a fertilized a female gamete from a creature of species b). But this second principle closes off the possibility of a one-natured creature becoming a two-natured creature. Furthermore, to justify itself, this second principle might need to appeal to a third principle:

Principle of Just One Nature for a Thing: If something (x) possesses nature a at time t_1 , then x must not possess any other nature at time t_1 .

Someone committed to the third principle would not even have room for a creature to *begin to exist* with two natures from the start. I think most people who believe in the second principle are in fact presupposing the third principle. But whether or not the second principle *must* rely on the third, one thing is certain:

the third principle stands in clear tension with the “both/and” solution to the problem of human-animal chimeras. For according to the “both/and” solution, some thing (*x*) can possess two natures at the same time.

Reason for Embracing the “Both/And” Solution

Initially, then, there seems to be a reason for resisting the idea of something possessing two natures. But now consider the Incarnation, especially the hypostatic union. According to “orthodox” Christian theology (as defined above), Jesus, the God-man, possessed both a divine nature and a human nature. The Incarnation presents us with an example of the possibility of something possessing two natures at the same time. Perhaps we should not be so quick about closing off this possibility in the case of the human-animal chimera.

Thomas Morris is an example of a recent Christian philosopher who has written a good deal in defending the doctrine of the Incarnation against several sorts of objections. One of his arguments defending the logical coherence of this doctrine is worth examining closely because it makes several important distinctions that can be applied directly to the metaphysical question we are trying to answer.⁶ His argument is a response to a common objection to the logical coherence of the doctrine of the Incarnation. The objection goes something like this: God is essentially omnipotent, omniscient, and omnipresent, but human beings are essentially *limited* in power, knowledge, and presence; therefore, God could not be (or become) a human being.

The first thing Morris notes about this objection is that it utilizes a distinction between accidental and essential properties. However, claims Morris, “a property can be essential to an object in either of *two* ways”:

[1] It is part of an *individual’s* essence if the individual which has it could not have existed without having it.

[2] It is a *kind* essential property if its exemplification is necessary for an individual’s belonging to a particular *kind*, for example, human-kind. Human nature, then, consists in a set of properties severally necessary and jointly sufficient for being human. And the same is true of divine nature.⁷

This distinction between *individually*-essential properties and *kind*-essential properties will be important both for Morris’ defense of the Incarnation and for my defense of the possibility of two-natured chimeras.⁸ To illustrate the basic idea behind this distinction, recall Moreland and Rae’s example of Socrates. Socrates may have the *kind*-essential property of *being human*, but he might also have an *individually*-essential property such as *being snub-nosed*, or *being the teacher of Plato*, or *being Socrates*. Morris claims that the critic of the Incarnation

begins with the simple truth that there are properties humans have which God could not possibly have, *assumes* that these properties, or at least some of them, are essential properties of being human, properties without which one could not be fully human, and then *concludes* that God could not possibly become a human being.⁹

Morris then questions the critic's main assumption by invoking a second distinction. Among characteristic human properties, some are *common* (e.g., having ten fingers) or even *universal* (e.g., standing under fifteen feet tall), but that does not make them *essential* (e.g., something can be human even if it does not have ten fingers, and in the future someone might grow to a height of 15'4" without thereby forfeiting her humanity). This distinction between common (or universal) properties and essential properties has clear relevance to the critic's main assumption. For although *being limited in power* is a common or (apart from Jesus) universal property of human beings, why should we think that this property is an *essential* property of human beings? In particular, even if we assume (as Morris does) that *being limited in power* is an *individually-essential* property for those human beings who have it (like Socrates), why should we think that *being limited in power* is a *kind-essential* property, a property without which one could not be truly human?

To complete his argument, Morris introduces a final distinction that builds upon the previous two:

An individual is *fully human* just in case that individual has all essential human properties, all the properties composing basic human nature. An individual is *merely human* if he has all those properties *plus* some additional limitation properties as well, properties such as being less than omnipotent, less than omniscient, and so on.¹⁰

This *merely x/fully x* distinction can be illustrated by the similarities and progressive differences between a diamond, a turtle, and a human. A diamond is *fully physical*, since it has all the properties essential to being a physical object such as mass and spatio-temporal location. A turtle is fully physical but (unlike a diamond) not *merely* physical, since it is an organic being having properties of animation: it is *fully animate*. A human is fully physical and fully animate, but (unlike a turtle) not *merely* animate, since it has an array of distinctive properties (rational, moral, aesthetic, and spiritual) which other organic entities lack: it is *fully human*. By virtue of being *fully human*, a human belongs to what Morris calls a "higher ontological level" than a turtle, and if a given human belongs to no higher ontological level than that of humanity, it is *merely* human as well.

Finally, with these various distinctions in place, Morris can apply them to the logical coherence of the doctrine of the Incarnation. He is worth quoting in full here:

According to orthodox Christology, Jesus was fully human without being merely human. He had all properties constitutive of human nature, but had higher properties as well, properties constitutive of deity.... What is crucial to realize here is that an orthodox perspective on human nature will categorize all human properties logically incompatible with a divine incarnation as, at most, essential to being *merely human*. No orthodox theologian has ever held that Jesus was merely human, only that he was fully human. It is held that the person who was God Incarnate had the full array of attributes essential to humanity, and all those essential to divinity.... He is not the theological equivalent of a centaur, half God and half man. He is fully human, but not merely human. He is also fully divine.¹¹

It is time to relate Morris' distinctions to the case of the human-animal chimera. Consider a being formed by combining the DNA of a human and the DNA of a cow. The suggestion that there is something logically incoherent about this being having *both* a human nature *and* a bovine nature has the same form as the suggestion that there is something logically incoherent about Jesus having *both* a human nature *and* a divine nature. Consequently, the reply to both suggestions has the same form. Just as it makes sense to say that Jesus could be *fully* human and *fully* divine, it makes sense to say that the chimera could be *fully* human and *fully* bovine. The only obstacle to this suggestion with the chimera is the idea that anything that is *fully* human must be *merely* human. But Morris' defense of the Incarnation shows that this idea is simply not true.

Reconciling Morris and Moreland and Rae

If I am right about the coherence of two-natured chimeras, how then should we respond to Moreland and Rae's claims about the way an essence places limits on the sorts of changes that an organism can undergo? As I shall now argue, I actually think we can *agree* with their presentation, and I think we can see that it does not lead to any difficulties with either Morris' defense of the Incarnation or with my suggestion about two-natured chimeras. The apparent tension can be dispelled like a fog.

To begin with, let us return to the distinction Morris makes between *individually-essential* properties and *kind-essential* properties. This is the difference between

(1) x being F, and x having property P essentially,

and

(2) all F's having property P essentially.

For example, this is the difference between

(1a) Socrates being human, and Socrates being limited in power essentially

and

(2a) All humans being limited in power essentially.

As Morris shows with the Incarnation, (1a) could be true even if (2a) is false. Hence in general (1) could be true even if (2) is false. (1a) and (2a) could be substituted with

(1b) Socrates being *fully* human, and Socrates being *merely human* essentially

and

(2b) All *fully* humans are *merely* humans essentially.

The results would be the same; (1b) could be true even though (2b) were false. The falsehood of (2b) is what allows us to say that the Incarnation is logically coherent.

But now recall that Morris introduces us to the *merely x/fully x* distinction by examples. One of those examples involved a turtle. Therefore, imagine a turtle named Franklin who, according to Morris, is both *fully* animate and *merely* animate. The (1)/(2) distinction in Franklin's case could be put this way:

(1c) Franklin being *fully* animate, and Franklin being *merely* animate essentially

and

(2c) All *fully* animate beings are *merely* animate essentially.

(2c) is obviously false; if it were true, all human beings would be *merely* animate. This is not too surprising, for even if (1c) were true, this would not imply (2c). Another way to put this (1)/(2) distinction in the case of Franklin is as follows:

(1d) Franklin being *fully* turtle, and Franklin being *merely* turtle essentially

and

(2d) All *fully* turtles are *merely* turtles essentially.

Putting it this way tightens up (1d)/(2d) so that they resemble (1b)/(2b). Once again, even if (1d) were true, this would not imply (2d). (2d), if true, would make it impossible for a turtle to have two natures. Something like (2d), reformulated for some particular nature, is what we would need to believe in if we were to claim that a being with that nature could not ever be or become a two-natured chimera. Something like (2d), reformulated to cover all natures, is what we would need to believe in if we were to claim that two-natured chimeras are logically incoherent.

But why should we think (1) is *ever* true? Perhaps because some positive properties seem to be clear examples of individually-essential properties: *being Socrates*, for example, is a property that Socrates seems not to be able to exist without having. This is a thorny issue, and we need not solve it here. Rather, for our purposes, it is enough to ask why we should we think (1) is ever true when P is viewed as a *negative* property. Why should we think that any individual organisms actually have these *limitation* properties essentially? In other words, why should we think that any individual organisms are *merely* anything?

This question becomes both more pressing and more exciting once it becomes clear that Morris does not even need the presupposition of individual essences in order to make his argument for the Incarnation. All he needs is the claim that Jesus can still be omnipotent *even if* Socrates and the rest of us are limited in power essentially; whether Socrates and the rest of us *really are* limited in power essentially is completely beside the point. More generally, all Morris needs is the claim that Jesus can still be *fully* human *even if* he is not *merely* human; whether

or not there *really are* any *merely* humans is completely beside the point. And what this amounts to, staggering as it may seem, is that Morris does not even need the category of *merely* human to make his argument for the Incarnation. This opens up the possibility that there *are* no *merely* human beings! Lest this possibility be dismissed as a philosopher's fancy, we do well to recall the words that C. S. Lewis wrote at the end of "The Weight of Glory":

It may be possible for each to think too much of his own potential glory hereafter; it is hardly possible for him to think too often or too deeply about that of his neighbour. The load, or weight, or burden of my neighbour's glory should be laid on my back, a load so heavy that only humility can carry it, and the backs of the proud will be broken. It is a serious thing to live in a society of possible gods and goddesses, to remember that the dullest and most uninteresting person you can talk to may one day be a creature which, if you saw it now, you would be strongly tempted to worship, or else a horror and a corruption such as you now meet, if at all, only in a nightmare. All day long we are, in some degree, helping each other to one or other of these destinations. It is in the light of these overwhelming possibilities, it is with the awe and the circumspection proper to them, that we should conduct all our dealings with one another, all friendships, all loves, all play, all politics. There are no *ordinary* people. You have never met a mere mortal...¹²

The upshot of this thought for chimeras is this: just as there is no need for the category of *merely* human, so too there is no need for the category of *merely* turtle. What applies to turtle applies to each and every biological species. It is possible to be *fully* a member of any particular species without being *merely* a member of that particular species. For any essence or nature *E*, it is possible to be *fully E* without being *merely E*.

Let us turn now to Moreland and Rae. To begin with, there is a difference between cases

(C1) an organism *x* coming into being with two natures

and

(C2) *x* being transformed from a one-natured being at time t_1 into a two-natured being at t_2 .

Many discussions of chimeras involve cases like (C1), but Moreland and Rae's discussion (of the caterpillar turning into a fish) only seems to be in tension with cases like (C2). But even this tension with (C2) is only a seeming tension. For it would be impossible for a caterpillar to turn into a fish only if all caterpillars are *merely* caterpillars in such a way that they cannot have the property *being fishy* and still exist. Just as Morris thought that he, Socrates, and nearly all other humans (except Jesus) have both the kind-essential property of *being human* and the individually-essential property of *being limited in power*, Moreland and Rae may be assuming that all caterpillars have, in addition to the kind-essential property of *being a caterpillar*, the individually-essential property of *being non-fishy*. But notice, to assume that *all* caterpillars have this individually-essential

property is to collapse the distinction between kind-essential properties and individually-essential properties; it is, in effect, to make *being non-fishy* into a kind-essential property.

I just said that Moreland and Rae *may* be assuming this. But *do* they actually assume this? *Must* they? The answers, I think, are maybe and no. All Moreland and Rae say is that “if the caterpillar turned into a fish...the caterpillar would cease to exist and the fish would come to be.” But the phrase “if a caterpillar turns into a fish” could mean either

(a) “if the property *being a caterpillar* is no longer exemplified”

or it could mean

(b) “if the property *being a fish* is now exemplified”

or it could mean

(c) both (a) and (b).

If (a) or (c) is what Moreland and Rae mean by “if a caterpillar turns into a fish,” then what they say is not in tension with the case (C2) above, of *x being transformed* from a one-natured being at time t_1 into a two-natured being at t_2 . Whenever the property *being a caterpillar* is no longer exemplified, it is clear that we do not have a transformation from a one-natured being into a two-natured being; what we have is a transformation from a one-natured being of one kind into a one-natured being of another kind.

Moreland and Rae’s statement is in tension with (C2) only if they mean (b) by “if a caterpillar turns into a fish” rather than (a) or (c). But I do not think Moreland and Rae intend to insist on (b) over against (a) or (c). Consider, for example, their statement on the page right before the passage quoted earlier. Moreland and Rae are finishing their discussion of yet another way of characterizing an essence, namely by using the notion of a hierarchy of capacities, in which a substance’s lower-order capacities and higher-order capacities “culminate in a set of its ultimate capacities that are possessed by it solely in virtue of the substance belonging to its natural kind: for example, Smith’s ultimate capacities are his because he belongs to the *natural kind* ‘being human.’” Moreland and Rae continue:

A substance’s *inner nature* or *essence* includes its ordered structural unity of ultimate capacities. A substance cannot change in its ultimate capacities; that is, it cannot lose its nature and continue to exist. Smith may replace his skin color from exposure to the sun and still exist, but if he loses his humanness—his inner nature of ultimate capacities that constitutes being human—then Smith ceases to exist.¹³

Clearly, Moreland and Rae’s emphasis is on how *losing* your essence causes you not to exist. Their emphasis is not on how *gaining* a second essence causes you not to exist. Since I think it a mistake to view Moreland and Rae as insisting on (b) over against (a) or (c), I do not think their statement is in tension with (C2).

They are not insisting that whenever a caterpillar takes on a fish nature, the caterpillar nature is obliterated. Rather, they are saying that *given the fact* that the property *being a caterpillar* is not exemplified when the property *being a fish* becomes exemplified, *it follows* that the caterpillar that used to be there is there no longer and a fish that had previously not been there is now there.

A caterpillar has an essence, “caterpillar-ness,” which is constituted by certain essential properties. If the caterpillar were to *lose* these essential properties in the process of taking on the essential properties of a fish, then the caterpillar nature would vanish (and, indeed, the caterpillar would cease to exist). But if the caterpillar *maintains* these essential properties through the process of taking on the essential properties of a fish, then the caterpillar would continue to exist, only now as fully caterpillar, fully fish. More formally, all we need is to modify the “Principle of *Just One Nature for a Thing to Continue Existing*” (see above) into a “Principle of *the Same Nature For a Thing to Continue Existing*”:

Principle of the Same Nature for a Thing to Continue Existing: If something (x) possesses nature a at time t_1 , and then “turns into” something possessing nature b at time t_2 , then x continues to exist at t_2 only if x continues to possess a at t_2 .

This modified principle clearly does not presuppose the problematic principle examined above, namely, the *Principle of Just One Nature for a Thing*. Therefore, Moreland and Rae should not be construed as claiming this problematic principle.

I conclude that we can wholeheartedly follow *both* the presentation of Thomas Morris *and* the presentation of J. P. Moreland and Scott Rae, by making ever-so-slight addenda to each. With Morris, all we need to do is recognize that no organism needs to be thought of as *merely* a member of its current species. And with Moreland and Rae, all we need to do is recognize that a caterpillar could become a fish *as long as it remained a caterpillar*.

Moral Status of a Two-Natured Chimera

To sum up the argument thus far: one of the interesting questions raised by human-animal chimeras is a metaphysical question: namely, whether it makes sense to consider the possibility that the human-animal chimera could be a member of two different species at the same time. Although this is a neglected solution, and although certain features of the concept of a nature might seem to pose an obstacle for this solution, the “both/and” solution makes sense. By examining a few distinctions related to a defense of the logical coherence of the two natures of Christ, we can see that there is nothing logically incoherent about a human-animal chimera having two different *natures*, or being a member of two distinct *natural kinds*, or being a member of two different biological *species*.

Suppose you now have before you something which you think really does have two natures (or is a member of two different species). How should you treat this thing? What is the proper level of respect to show for this thing? For example, if something is both human and bovine, should it be treated like a

human, or like a cow, or like something in between? In short, assuming that a two-natured chimera could exist, what would its *moral status* be?

It is perhaps important to clarify which question we are *not* asking in this section. We are not asking whether we should err on the side of charity in case we are unsure about whether the thing in front of us is really human or not. That sort of principle may in fact be true, and for the record I think it is true. But that is not the point I am trying to make in this section. The case I wish to discuss concerns what to think of the moral status of a being if we are *already convinced* that it is both human and bovine.

I would like to examine five principles that could plausibly be given as answers to this moral question. Other principles can be imagined which combine these in interesting and complicated ways, but I think that by carefully examining these five, especially in the light of the Incarnation, we can see which one seems most likely to be correct.

The first principle is the one I think is correct. Call it the

Maximum Respect Principle: If the moral status of an *a* (something with nature *a*) is greater than the moral status of a *b* (something with nature *b*), then something with both natures has the moral status of an *a*.¹⁴

A rough way to symbolically summarize this would be:

$$[MS(a) > MS(b)] \rightarrow [MS(a\&b) = MS(a)]$$

The implication of the Maximum Respect Principle for the human-animal chimera is this: if we believe that the moral status of a human is greater than the moral status of a cow, and if we believe that we have something before us which has both a human nature and a bovine nature (say, because it was created from the fusion of cow DNA and human DNA), then we should give it the respect it is due in virtue of its human nature. For example, an embryonic organism that we think is both human and bovine is due the respect of a human embryo. If we would oppose the destruction of human embryos for research or therapeutic purposes because of the *moral status* of the human embryo, then we should oppose the destruction of this human-bovine embryo for the same reason.

Why might we think this is the right principle? For starters, we might just say that it *seems* right to us upon reflection. We might claim that it simply has a ring of truth about it. Appeals to intuition are not, as far as I can see, a bad place to start. Still, two people with contradictory beliefs each may be able to make an honest appeal to their own intuitions. It would be nice if we could give an extra reason that might break such a deadlock of intuitions.

Consider again the Incarnation. Christians believe that Jesus is fully human and fully God, that he has both a human nature and a divine nature. Now I submit that his divine nature is considered to be “greater than” his human nature in the following way: any Christian would quickly agree that the *degree of respect* that should be shown to something with a divine nature is greater than the degree of respect that should be shown to something with a human nature. But this is just another way of saying that the *moral status* of something with a

divine nature is greater than the *moral status* of something with a human nature. Hence the first part of the Maximum Respect Principle is satisfied: $MS(\text{divine}) > MS(\text{human})$. But Jesus is something with both a divine nature and a human nature. Is it true that the moral status of Jesus “tracks with” his divine nature instead of his human nature?

There is at least one strong reason for thinking that the moral status of Jesus does indeed “track with” his divine nature. Christians *worship* Jesus yet do not worship their fellow human beings precisely because Jesus has a divine nature which other human beings do not have. In other words, the nature of Jesus that explains why he is due the degree of respect he is due is his divine nature. And this high degree of respect Christians show towards Jesus therefore is tracking with the “greater” of his two natures.

It might be objected that when Christians worship Jesus, there is a sense in which they do not attempt to pull apart, even in thought, his divine and human natures. It is not as if they feel constrained to worship Jesus *only* when thinking about his divine nature, and that whenever his human nature comes to mind, they must be very careful not to worship *that*. Such worship would be deeply confusing, and so it is no wonder that Christians take him as a whole “package,” so to speak. In reply, I am happy to admit everything this objection affirms. Nevertheless, I think it is true that for most Christians, what they are responding to in worshipping Jesus is the fact that this is a *God*-man, with accent on the “*God*.” Jesus is not merely a powerful angel who assumed a human nature. He is thought to be *God* Almighty, and that is why giving him the degree of respect called worship is not a form of idolatry.

I believe that these considerations confirm the correctness of the Maximum Respect Principle. Now that it has been briefly presented and defended, it will be helpful to consider four other principles that we could have adopted instead. One obvious rival would be the

Minimum Respect Principle: If the moral status of an *a* (something with nature *a*) is greater than the moral status of a *b* (something with nature *b*), then something with both natures has the moral status of a *b*.

A rough way to symbolically summarize this would be:

$$[MS(a) > MS(b)] \rightarrow [MS(a\&b) = MS(b)]$$

The implication of the Minimum Respect Principle for the human-animal chimera is this: if we believe that the moral status of a human is greater than the moral status of a cow, and if we believe that we have something before us which has both a human nature and a bovine nature, then we should give it the respect it is due in virtue of its bovine nature. For example, an embryonic organism that we think is both human and bovine is due the respect of a bovine embryo. If we would permit the destruction of bovine embryos for research or therapeutic purposes because of the *moral status* of the bovine embryo, then we should permit the destruction of this human-bovine embryo for the same reason.

just say that it *seems* right to us. Is there more we can say? After all, as it stands this principle looks a bit like a sort of *stinginess* about moral status. It appears to be a kind of Scrooge-like principle. But perhaps there is more to it than meets the eye. Although it is a case of seeing the glass as half empty instead of half full, we do sometimes do this sort of thing in moral reasoning. For example, if someone donated half their income to charity but then committed a terrible crime, the crime would likely form a more solid impression in our mind about the true character of the person. Is there a way to see if this sort of thing might apply to the two-natured chimera?

Indeed, there is. Consider again the Incarnation. Christians think it quite unfortunate when someone recognizes Jesus as a great human being yet refuses to acknowledge him as God. Christians regularly affirm the importance of reflecting upon and celebrating the fact that Jesus was *fully* human, but they dare not lapse into treating Jesus as *merely* human. This would truncate Jesus immeasurably and would plunge Christians directly into the sorts of heresies battled off ever since the earliest centuries of Christian thinking. But treating Jesus as *merely* human is precisely what the Minimum Respect Principle would advise Christians to do. I think that since this Minimum Respect Principle delivers the wrong result in this instance, we should resist it when thinking about the moral status of the two-natured chimera.

A third candidate principle would be the

Additive Respect Principle: If the moral status of an *a* (something with nature *a*) is greater than the moral status of a *b* (something with nature *b*), then something with both natures has the moral status of an *a plus* the moral status of a *b*.

A rough way to symbolically summarize this would be:

$$[MS(a) > MS(b)] \rightarrow [MS(a\&b) = MS(a) + MS(b)]$$

The implication of the Additive Respect Principle for the human-animal chimera is this: if we believe that the moral status of a human is greater than the moral status of a cow, and if we believe that we have something before us which has both a human nature and a bovine nature, then we should give it the *sum of* the respect it is due in virtue of its human nature *plus* the respect it is due in virtue of its bovine nature. For example, an embryonic organism that we think is both human and bovine is due the respect of a human embryo *plus* the respect of a bovine embryo. If we would oppose the destruction of human embryos for research or therapeutic purposes because of the *moral status* of the human embryo, we should oppose the destruction of this human-bovine embryo for a *similar but stronger* reason.

Why might we think this is the right principle? Direct appeals to intuition do not sound as plausible in this case because the principle is a bit complex. Still, it might strike us as a good principle after we reflect on the way the principle directs us to look at *all* the facts, not merely *some* of them. The principle insists that a thing should be given the respect it is due in virtue of the species it is a member of, and then reasons that since the two-natured chimera is a member

of *two* species, it should be given the respect of, well, *both*. And this seems like the sort of principle that reflects the way we value many things in life with multiple features. For example, even thinkers who base moral status on features like rationality or sentience might be willing to admit that a creature with *both* rationality *and* sentience should be given greater weight than a creature with *only* one of these features. Are these sorts of considerations relevant enough to make us embrace this Additive Respect Principle?

One reason for thinking this principle is not correct is that it implies that something that is *fully* human and *fully* bovine would be due *more* respect than something that is *merely* human. This seems like a dramatic shift, since it bumps all of us *merely* human folk into a second-class status. I think it is safe to say that we would not, as a society, welcome the thought that some humans are better than other humans just because they are human-cows instead of just humans. I leave it to the reader to imagine what sorts of fallout this would have if people took it seriously.

What does the Incarnation contribute to the evaluation of the Additive Respect Principle? Well, consider what the principle would imply if Christians took it seriously. Jesus is believed to be fully God and fully man, and the divine nature is greater than the human nature. According to Trinitarian Christian theology, however, Jesus is also the *Son* of God, and in particular is but *one* of *three* persons making up the Triune Godhead. The Father has a divine nature but not a human nature, and the Spirit has a divine nature but not a human nature. What the Additive Respect Principle would have Christians do, then, is treat Jesus with *greater* respect than the Father or the Spirit. But Christians have consistently refused to elevate the Son above the Father or the Spirit, even though Christians are convinced that the Son took on a human nature. Each member of the Trinity is coequal in power, majesty, and authority to the others; each one is as worthy of worship as the others. Since the Additive Respect Principle delivers such bizarre results when applied to the Incarnation, Christians have good reasons for resisting it.

A fourth candidate principle would be the

Subtractive Respect Principle: If the moral status of an *a* (something with nature *a*) is greater than the moral status of a *b* (something with nature *b*), then something with both natures has the moral status of an *a* *minus* the moral status of a *b*.

A rough way to symbolically summarize this would be:

$$[MS(a) > MS(b)] \rightarrow [MS(a\&b) = MS(a) - MS(b)]$$

The implication of the Subtractive Respect Principle for the human-animal chimera is this: if we believe that the moral status of a human is greater than the moral status of a cow, and if we believe that we have something before us which has both a human nature and a bovine nature, then we should give it the *difference between* the respect it is due in virtue of its human nature and the respect it is due in virtue of its bovine nature. For example, an embryonic organism that we think is both human and bovine is due the respect of a human embryo *minus*

the respect of a bovine embryo. If we would oppose the destruction of human embryos for research or therapeutic purposes because of the *moral status* of the human embryo, then it is not really clear whether we should permit or oppose the destruction of this human-bovine embryo. On the one hand, it has *less moral status* than a merely human embryo. On the other hand, it may have a close enough moral status to a human embryo that we should treat it *as if* it had the moral status of a human embryo.

Why might we think this is the right principle? It is probably too complex to intuit; to assess it we must first figure out what it means. We know that the moral status of a human-bovine would end up less than the moral status of a human. But would the moral status of such a chimera be more than the moral status of a cow? As it turns out, that depends on whether $MS(a) - MS(b)$ is greater or less than $MS(b)$. While I have deliberately avoided using quantities up to this point, an illustration using numbers might help: Imagine that humans could be assigned a moral status of (say) 100, monkeys a moral status of 60, and rats a moral status of 10. Using the Subtractive Respect Principle, a human-rat would have a moral status of 90 (since $100 - 10 = 90$), and a human-monkey would have a moral status of 40 (since $100 - 60 = 40$). But this application of the Subtractive Respect Principle seems to get the example completely wrong, since it *penalizes* a given creature for having better natures. In other words, the principle always has the following embarrassing result: the *higher* the moral status of the *b* is, the *lower* the moral status of the two-natured chimera is.

Considering the Incarnation simply confirms the wrongness of this principle. Christians do not treat Jesus as less than the Father or the Spirit, even though Jesus has a human nature that is “less than” his divine nature. They do not worship Jesus less than the Father (or the Spirit), and the fact that Jesus bears both natures does not subtract in the least from his dignity, majesty, and praiseworthiness as fully God. Many of the orthodox answers to various recurrent heresies since the very beginnings of Christian thinking have insisted on this. The earliest Christians viewed Jesus as a proper object of worship. To worship what is the greatest is the essence of worship; to worship something less than the greatest is the essence of idolatry. The Subtractive Respect Principle would have Christians respect Jesus less than they respect the Father and the Spirit. This, by itself, is a good reason for resisting the principle.

Finally, a fifth candidate principle is the

Average Respect Principle (or *Split-the-Difference Respect Principle*): If the moral status of an *a* (something with nature *a*) is greater than the moral status of a *b* (something with nature *b*), then something with both natures has the moral status of an *a plus* the moral status of a *b*, divided by two.

A rough way to symbolically summarize this would be:

$$[MS(a) > MS(b)] \rightarrow [MS(a\&b) = (MS(a) + MS(b))/2]$$

The implication of the Average Respect Principle for the human-animal chimera is this: if we believe that the moral status of a human is greater than the moral status of a cow, and if we believe that we have something before us which has

both a human nature and a bovine nature, then we should give it an amount of respect *halfway between* the respect it is due in virtue of its human nature and the respect it is due in virtue of its bovine nature. For example, an embryonic organism that we think is both human and bovine is due the respect of a human embryo *plus* the respect of a bovine embryo, divided by two. This averages the respect it is due: the appropriate degree of respect is exactly halfway between the respect due a bovine and the respect due a human.

Why might we think this is the right principle? One stroke in its favor is that (unlike the previous principle) the Average Respect Principle entails that the *closer* the moral status of the *b* is to the human, the *greater* the moral status of the chimera would be. This difference might seem to save the Average Respect Principle from one of the errors of the Subtractive Respect Principle. After all, using our earlier assigned values, the Average Respect Principle gives a human-rat a moral status of 55 (since $(100 + 10)/2 = 55$) and a human-monkey a moral status of 80 ($((100 + 60)/2 = 80)$). This is surely better than the results of the Subtractive Respect Principle.

However, although this aspect is surely an improvement, the Average Respect Principle still flounders when we try to apply it to the Incarnation. Christians do not give Jesus a level of respect halfway between what a human being is due and what a divine being is due, for if they did, they would give him less respect than they give to the Father or the Spirit. Rather, Christians give Jesus the level of respect a divine being is due. They have good reason for rejecting the suggestion of averaging out the respect due to Jesus, and good reason for rejecting the Average Respect Principle.

Conclusion

It is time to draw this piece to a close. I have argued that Christian approaches to bioethical issues should be theological, collaborative, and forward-looking. I have tried this approach in examining two philosophical issues that center around the metaphysical and moral status of a human-animal chimera. The metaphysical issue is whether or not it makes sense to claim that such a chimera could have two natures. I have argued that by closely examining the Incarnation, we can see that such a claim indeed makes sense. The moral issue is what moral status we should ascribe to a two-natured chimera. Again, by looking at the Incarnation, we can see that the moral status of a two-natured chimera is neither more nor less than the moral status of a creature with the greater of the chimera's two natures. **E&M**

References

* I would like to thank Glenn Snyder for his helpful criticisms of an earlier draft of this essay.

¹ J. P. Moreland, "Integration and the Christian Scholar," paper presented to the "Christian Scholarship Conference," Ohio State University, Columbus, Ohio, on October 22, 1999. Accessed online on 5/5/2003 at <http://www.leaderu.com/aip/docs/moreland2b.html>.

² Thomas V. Morris, *Divine and Human Action* (Ithaca, N.Y.: Cornell University Press, 1988), p. 3. J. P. Moreland and Scott B. Rae explicitly adopt this approach in their *Body and Soul: Human Nature and the Crisis in Ethics* (Downers Grove, Ill.: InterVarsity Press, 2000). See especially chapter 1, "Establishing a

Framework for Approaching Human Personhood,” where they quote Morris on pg. 47.

³ *Body and Soul*, 52.

⁴ *Ibid.*, 74.

⁵ *Ibid.*, 74.

⁶ Thomas Morris, *The Logic of God Incarnate* (Ithaca, N.Y.: Cornell University Press, 1986), especially chapters 1-6; Thomas Morris, *Understanding Identity Statements* (Aberdeen, United Kingdom: Aberdeen University Press and Humanities Press, 1984), especially chapter 9; Thomas Morris, *Anselmian Explorations: Essays in Philosophical Theology* (Notre Dame, Ind.: University of Notre Dame Press, 1987), especially chapter 12.

⁷ *Anselmian Explorations*, 220. Italics and bracketed numbers mine.

⁸ However, not all philosophers (even those who believe in the *kind*-essences of [2]) agree that there are such things as the *individual*-essences of [1]. The debate is over whether there is some feature of *mine* which *I* could not exist without, yet which *you* could exist without. This point will resurface in an important way below.

⁹ *Anselmian Explorations*, 221. Italics mine.

¹⁰ *Ibid.*, 221-222.

¹¹ *Ibid.*, 222, 224.

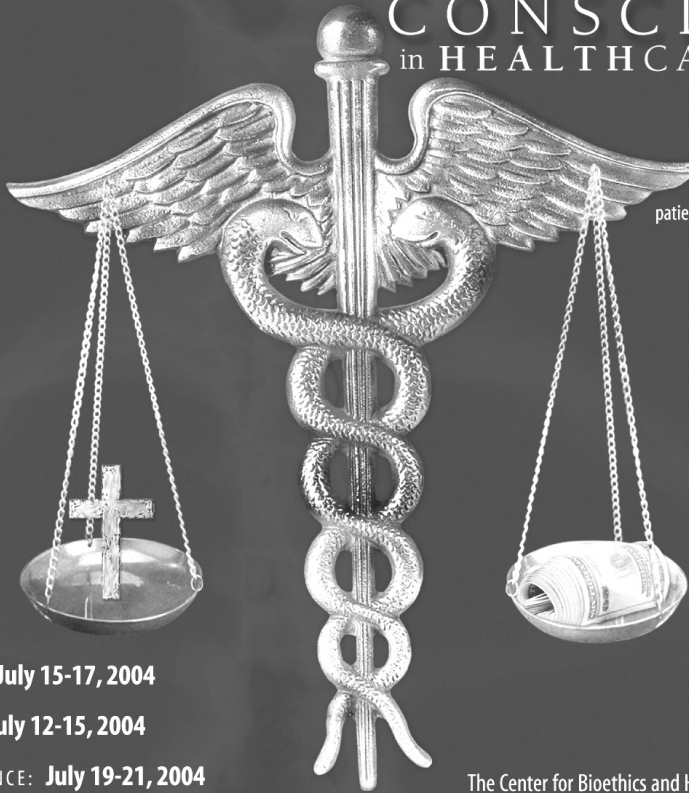
¹² C. S. Lewis, “The Weight of Glory,” in *The Weight of Glory and Other Addresses*, revised and expanded edition (New York: MacMillan Publishing Company, 1965), 18-19.

¹³ *Body and Soul*, 73.

¹⁴ It is perhaps important to note here that I’m not trying to make the notion of moral status depend on anything like quantities. In general, I deliberately set aside the question of whether there is a sort of *metric* for moral status and how one goes about plugging in *values* or *numbers* into that metric (and in particular, I’m not trying to use a sort of species-adjusted Quality of Life Adjusted Years (QALY) scale). But still, setting this aside does not prevent us from knowing (1) that some things *have* moral status (e.g., human beings), while other things *don’t have* moral status (e.g., human fingernails), and (2) that among the things which *have* moral status, some of them have *more* of it than others (e.g., human beings have more than killer bees). Even this idea of *more* is admittedly vague: it could mean either *having a greater amount of the same kind of thing*, or it could mean *having a greater kind of thing*. I prefer the latter gloss, but shall not defend it here.

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LETHAL INJECTION: THE MEDICAL CHARADE

JONATHAN I. GRONER, MD

How in God's name can there be a showing of cruel and unusual punishment by the insertion of a medically accepted device to inject a fluid into the body?

—Daniel J. Porter, District Attorney, *State of Georgia v. Michael Wayne Nance*

Introduction

Lethal injection—the intravenous administration of a tranquilizer, a muscle relaxant, and cardioplegic agent for the purpose of judicial execution—is the standard method of capital punishment in the United States. Since 2001, lethal injection has been used in 189 of 191 (99%) executions¹ and is the chief method of execution in 37 of the 38 states that have the death penalty, as well as for the federal government and military.²

The American Medical Association's (AMA) opinion on capital punishment is found in section E-2.06 of its *Code of Medical Ethics*.³ The AMA states that “A physician, as a member of a profession dedicated to preserving life when there is hope of doing so, should not be a participant in a legally authorized execution.”³ Participation is defined to include “monitoring vital signs on site or remotely (including monitoring electrocardiograms); attending or observing an execution as a physician; and rendering of technical advice regarding execution.” Because pronouncing death requires a physician to monitor an inmate's vital signs, either via electrocardiogram or stethoscope, it is, therefore, forbidden by the code.⁴ Certifying death, which does not require monitoring but does require the physician to sign a death certificate, is allowed in the AMA guidelines.⁴

Opinion 2.06 also makes specific reference to lethal injection, and forbids the following: “selecting injection sites; starting intravenous lines as a port for a lethal injection device; prescribing, preparing, administering, or supervising injection drugs or their doses or types; inspecting, testing, or maintaining lethal injection devices; and consulting with or supervising lethal injection personnel.”³

According to its position papers, the American Osteopathic Association (AOA), which represents osteopathic physicians in the United States, “deems it an unethical act for any osteopathic physician to deliver or be required to deliver a lethal injection for the purpose of execution in capital crimes.”⁵

The American Nurses Association (ANA) also forbids its members from participating in lethal injection, and, in 1996, joined the AMA in calling upon

“all health care professional societies to ensure that their members know and understand that participation in an execution is a serious violation of ethical standards.”⁶

In a 1994 book entitled “Breach of Trust,” the American College of Physicians, along with several human rights groups, warned that the system of capital punishment was increasingly using “the medical profession’s evaluative skills and therapeutic techniques to...legitimate the act of killing.”⁷ However, since this book was published, over 500 lethal injections have taken place. The participants in these executions, along with their qualifications, are often hidden from public view. In 2002, the constitutionality of lethal injection was challenged in the case of *State of Georgia v. Michael Wayne Nance*, and execution participants were subpoenaed to testify under oath. The hearings provided a detailed description of six lethal injection executions. The purpose of the present study is to compare the actions of medical professionals in those executions against the AMA’s ethical code.

Methods

The transcript of *State of Georgia v. Michael Wayne Nance* is a public record of the testimony and evidence presented between April 30 and May 1, 2002, in the Superior Court, Gwinnett County, Georgia, USA. The files consist of 381 pages of testimony and 509 pages of exhibits, including “death watch” logs, last meal requests, pharmacy records, professional licenses of the participants, and the routine paperwork associated with executions at the Georgia Diagnostics and Classification Center (GDC) in Jackson, Georgia, USA. The transcript was reviewed in order to compare the conduct and actions of the physicians and nurses during lethal injection executions to Opinion 2.06 of the AMA’s *Code of Ethics*. The ANA has not specifically delineated “disallowed” actions; however, because the AMA and ANA share a mutual position on participation in lethal injection, the same standard was used for evaluating the conduct of the nurses present at the executions.

Results

Health care to inmates at GDC is provided by Georgia Correctional Health Care (GCHC), a division of the Medical College of Georgia. The medical professionals who participate in executions performed at GDC are employees of GCHC, with the exceptions of Timothy Harden Jr., MD, who was hired before GCHC was awarded the contract for prison health care and was employed directly by the prison, and Sanjeeva Rao, MD, a “contract physician” who was paid specifically for his expertise in vascular access.

The physicians performed seven of the eleven activities that are forbidden by the AMA’s ethical code (Table 1), and the nurses performed five of the eleven prohibited actions (Table 2). In two cases, the testimony about the role of the physicians was particularly noteworthy. In the execution of Ronald Spivey (executed January 24, 2002), a physician (the testimony does not make clear which specific doctor was present) ordered a second dose of intravenous potassium chloride after the first round of drugs failed to result in cessation of

cardiac electrical activity. In the execution of Jose Martinez High (November 6, 2001), the nurses were unable to find veins for intravenous lines despite multiple attempts. Therefore, Dr. Rao, a board certified critical care physician, performed a right subclavian vein catheterization in order to carry out the execution.

Discussion

Societies such as the AMA, ANA, and AOA set standards of “the essential honorable behavior” that define membership in the medical professions.⁸ This professionalism functions as a “morally protective force on society.”⁹ Included in the professional standards for doctors and nurses are absolute prohibitions against participation in lethal injection. Nevertheless, this study demonstrates that participation is routine.

Although many execution methods were designed with the help of physicians, lethal injection is unique because it was developed—by an anesthesiologist—not only to be “humane” but also to simulate a medical procedure: the intravenous induction of general anesthesia.¹⁰ In actual practice, the equipment used for a lethal injection can be found in any operating room or procedure suite: a gurney, bags of injectable saline with intravenous tubing, vascular access catheters, and electrocardiogram monitors.

In addition to the veneer of medical respectability that nurses and physicians bring to an execution, their technical expertise is essential. Thus medical professionals must either carry out the execution themselves or train and supervise prison personnel to do their work. But the death row population, because of poor general health, morbid obesity, or prior intravenous drug abuse, frequently present vascular access issues that may require the skills of a physician.

Lethal injection has been called “a stain on the face of medicine” because it turns medical professionals—people who dedicated their lives to healing—into killers.¹¹ Because the execution process mimics a medical procedure, “a healing profession lends its knowledge and practice to obscuring the fact of killing.”¹² Thus, not only are the participants defiled, but all of their professional colleagues as well. Lethal injection represents a dramatic failure of medical professionalism. In the past, a similar perversion of medical values—in which doctors and nurses became active participants in state-sanctioned killings—became the cornerstone of Nazi medicine.^{9,13} Unless organizations like the AMA, ANA, and AOA can assert their core values to their members, lethal injection will remain a medical charade. E&M

Table 1. Sworn testimony of actions performed by physicians during lethal injection executions in Georgia. The AMA forbids each of these actions. The words in brackets were added for clarification. (MD = Medical Doctor; RN = Registered Nurse)

Forbidden Activity	Physician Participation?	Witness	Citation	Evidence
Monitoring vital signs	Yes	S. Rao, MD T. Harden, MD	p. 288 lines 20-24 p. 164 lines 6-8	A. I usually sit outside in the — away from the chamber. I don't even see the patient. I usually read the monitor. But only when they have a problem I go there to see if I can start the IV or get the central venous line. Q. You observed the heart monitor that was attached to him during the execution; is that correct? A. Yes.
Attending/observing as a physician	Yes	S. Rao, MD	p. 286 lines 16-20	Q. You've been involved in the last six lethal injection executions? A. Yes
Prescribing/preparing lethal drugs	Yes	S. Rao, MD	p. 291 lines 3-24	Q. Who's in charge in terms of what drugs to give when? A. Dr. Harden is the one who would be in charge of that.
Rendering technical advice	No evidence			
Selecting IV sites	Yes	J. A. Ridgeway, RN	p. 207 line 1	A. I know that she [the nurse] and Dr. Rao were both looking [for IV sites].
Obtaining vascular access	Yes	S Rao, MD	p. 285 lines 16-18 p. 289 lines 3-4	A. ...if they have a problem getting a vein, getting venous access. Then I can put a central venous line. Q. You helped her start a peripheral IV? A. Right.
Supervising personnel who perform injections	Yes	S. Rao, MD	p. 288 lines 2-16	Q. ...and then you are supervising Ms. Cook while she starts the peripheral IV? A. ...that is under the prison doctor who will also be there.
Administering injection	No evidence			
Inspecting/maintaining injection devices	No evidence			
Pronouncing death	Yes	T. Harden, MD	p. 163 lines 6-8	Q. Dr. Harden, with regard to the executions in which you have participated, what was your role? A. Just to pronounce the inmate dead or still living.
Consulting/supervising injection personnel	No evidence			

Table 2. Sworn testimony of action performed by nurses during lethal injection executions in Georgia. Each of these actions is considered direct participation by the AMA ethical guidelines. The words in brackets were added for clarification. (RN = Registered Nurse; LPN = Licensed Practical Nurse)

Forbidden Activity		Nurse Participation?	Witness	Citation	Evidence
Monitoring vital signs	No evidence				
Attending/observing as a nurse	Yes	J.A. Ridgeway, RN S. Cook, LPN	p. 203 lines 3-8 p. 124 lines 5-8	Q. There have been six executions and you've been present at all of them? A. Yes, sir. Q. Were you hired specifically for the lethal injection executions? A. Yes, sir.	
Prescribing/preparing lethal drugs	No evidence				
Rendering technical advice	No evidence				
Selecting IV sites	Yes	S. Cook, LPN	p. 128 lines 20-24	A. I look for an IV site and sometimes, you know, it takes five or ten minutes to go around to look to make sure which arm we want...	
Obtaining vascular access	Yes	J.A. Ridgeway, RN	p. 207 lines 1-16	Q. Were you present in the execution chamber when Ms. Cook was attempting to start the second catheter on Mr. High? A. Yes, sir.	
Supervising personnel who perform injections	Yes	Lt. Stewart, Corrections officer W. Davis, RN	p. 200 lines 2-5 p. 216 lines 1-3	Q. ...the nurse is supervising you while you're actually pressing the plunger during the actual execution and during the practice? A. (Witness nods affirmatively) Q. Your responsibility is to supervise those staff members in the injection of those drugs? A. Exactly.	
Administering injection	Yes	W. Davis, RN S. Cook, LPN	p. 219 lines 3-6 p. 136 lines 4-8	A. ...the nurse is in the chamber and she's watching the IV site [during the infusion] to be sure that there are no problems with it. Q. ...after you start the angiocath you then pull up the sheet. What is your role at that point? A. I stand there and position myself where I can see both arms, both IVs, where in case they what we call infiltrate or get out of the vein.	
Inspecting/maintaining injection devices	Yes	J.A. Ridgeway, RN	p. 203 lines 9-12 lines 19-22	Q. What is your role in lethal injection executions? A. I basically am charged to be sure that all the supplies, if they are needed, are there at hand. Q. What equipment do you ensure is available? A. The IV catheters, the alcohol preps, the saline solution for making sure that the IV line is open...	
Pronouncing death	No evidence				
Consulting/supervising injection personnel	No evidence				

References

- 1 Death Penalty Information Center. *Executions in the United States*. Available at: <http://www.deathpenaltyinfo.org/article.php?did=414&scid=8>; 2003.
- 2 Death Penalty Information Center. *Authorized methods of execution by state*. Available at: <http://www.deathpenaltyinfo.org/article.php?scid=8&did=245#authorized>; 2003.
- 3 American Medical Association. Opinion 2.06 "Capital Punishment". *Code of Medical Ethics: Current opinions with annotations*. AMA Press; 2000.
- 4 Farber N, Davis EB, Weiner J, Jordan J, Boyer EG, Ubel PA. Physicians' attitudes about involvement in lethal injection for capital punishment. *Arch Intern Med* 2000; 160:2912-2916.
- 5 American Osteopathic Association. *AOA position paper: Executions in Capital Crimes*. Chicago: American Osteopathic Association, 2000.
- 6 American Nurses Association. *Nurses' participation in capital punishment*. Available at: <http://nursingworld.org/readroom/position/ethics/etcptl.htm>; 1994.
- 7 The American College of Physicians, Human Rights Watch, National Coalition to Abolish the Death Penalty, Physicians for Human Rights. *Breach of Trust: Physician Participation in Executions in the United States*; 1994.
- 8 American Medical Association. *Principles of Medical Ethics*, June 2001. Available at: <http://www.ama-assn.org>; 2001.
- 9 Wynia MK, Latham SR, Kao AC, Berg JW, Emanuel LL. Medical professionalism in society. *N Engl J Med*. 1999;341(21):1612-1616.
- 10 Colburn D. Oklahoma was the first. *The Washington Post*. December 11, 1990;Health: Z14.
- 11 Groner JI. Lethal injection: a stain on the face of medicine. *Bmj*. 2002;325(7371):1026-1028.
- 12 Lifton RJ, Mitchell G. *Who owns death? Capital punishment, the American conscience and the end of executions*. New York: HarperCollins; 2000.
- 13 Groner JI. Lethal Injection and the Medicalization of Capital Punishment in the United States. *Health and Human Rights: An International Journal*. 2002;6(1):64-79.

WHEN A FAMILY MEMBER CHANGES THEIR MIND REGARDING THE DNR ORDER: THE IMPORTANCE OF DOCUMENTATION

BERNARD M. KARNATH, MD

CHERYL E. VAIANI, PHD

Introduction

Cardiopulmonary resuscitation (CPR) is considered the standard of care for a patient in cardiac arrest. However, it may be inadvisable for some patients to receive CPR due to a poor chance of meaningful survival; therefore the Do-Not-Resuscitate order plays a valuable role in patient care. A physician can declare a patient DNR with the patient's or surrogate's consent; however, problems may arise when family members disagree or change their mind regarding a DNR order. Standardized DNR order forms may prove to be invaluable as the illustrative case presents the importance of documentation regarding the DNR order.

It was 10:00 PM and I had just finished seeing my last admission on call in the emergency department when I was called by a nurse on the medicine floor who alerted me that one of his patients had a blood pressure of 50/20 mm Hg. The nurse also notified me that this patient was DNR (do not resuscitate). I ordered a 500 ml bolus of normal saline as I rushed to the medicine floor to evaluate the patient.

Upon my arrival to the floor, I immediately reviewed the patient's chart. She was a 60-year-old woman who had suffered a stroke 5 days ago. She was initially admitted to the Neurology service but subsequently transferred to the intensive care unit for worsening mental status and respiratory distress. She was intubated and remained in a coma for the next 3 days. She developed numerous multi-organ complications including myocardial infarction and disseminated intravascular coagulation. Her prognosis was poor and the family expressed their wish for comfort measures only.

A DNR order was entered into the chart on the fourth hospital day at which time the patient was extubated. She remained unresponsive but breathed spontaneously. The family agreed with the plan of care, which included comfort measures and enteral feeds via a nasogastric tube. The patient was transferred out of the intensive care unit to the general medicine floor.

After I had reviewed the hospital chart, I proceeded into the patient's room.

The nurse notified me that the repeat blood pressure after the bolus was 39/0 mm Hg. The patient had shallow respirations and was unresponsive. The patient's daughter was present in the room and I asked her if we could go to the conference room to discuss her mother's condition.

As I was describing to the daughter her mother's deteriorating condition, the nurse called for me to return to the patient's room. When I entered the room, the patient was without respirations. I immediately checked for a pulse, which was not palpable. The pupils were fixed and dilated. The daughter was present at the bedside and said: "I want you to resuscitate my mother...please."

The patient was not resuscitated.

—Bernard Karnath, MD

Discussion

The following section hopes to answer some difficult questions that arise in this type of situation along with providing a review of the DNR order.

What Are the Ethical Dilemmas of this Case?

The ethical dilemma of this story arises because the last note of the chart read that the family wanted comfort measures only. With the daughter being the only family member present at the time, I was in the dilemma of whether or not to institute resuscitation measures at her request. I had never met this family before and this was the first time that I was aware of this patient's clinical condition. This is a common scenario in an on-call situation. The suggested hierarchy of surrogate decision-making among family members is as follows: spouse, adult children, siblings, other family members.¹ Although this legal hierarchy of surrogate decision-making is true for some states (including Texas, where this scenario took place), it may not be for other states.^{2,3}

What Are the Arguments in Favor of Resuscitation?

Resuscitation is an exceptional therapy when compared to other treatments in that consent must be given *not* to receive the treatment. For most procedures, surrogate consent can be obtained from any available family member. In this case, should the daughter have been allowed to consent for resuscitation in the absence of her father?

Family members are often asked to make substituted judgments for patients who are unable to speak for themselves. The surrogate's decision should represent what the patient would have wanted. Although the surrogate's decision may often represent their own treatment wishes,⁴ the surrogate, according to one study, made correct predictions of what the patient would have wanted in 66 percent of instances.⁵

What Are the Arguments Against Resuscitation?

Cardiopulmonary resuscitation (CPR) was introduced in the early 1960's and was intended for a patient in cardiac arrest.⁶ It may, however, be inadvisable for some patients to receive CPR due to a poor chance of meaningful survival; therefore the Do-Not-Resuscitate order was introduced in 1976.⁷ A physician can declare a patient DNR with the patient's or surrogate's consent. Alternatively, a unilateral or futility-based DNR order can be written at the discretion of the physician if he or she believes that resuscitation is not indicated based on futility.⁸

Survival after cardiopulmonary resuscitation depends largely on the setting, underlying event, and co-morbidities. For in hospital cardiopulmonary resuscitation, the overall rate of survival to discharge is at best 21 percent.^{9,10,11} The prognosis is particularly ominous for stroke patients, with one study showing that none of 16 patients with acute stroke accompanied by neurologic deficits survived hospital discharge after undergoing in-hospital CPR.⁹ There has been a misperception in the general public about the success rate of CPR, perhaps due to the televised portrayal of this heroic event where the survival rate to hospital discharge is an optimistic 67 percent.¹²

The daughter of the patient in our case stated just prior to the death of her mother that she was "hoping for a miracle" despite the poor prognosis. Perhaps the portrayal of CPR as a life saving measure influenced her decision to consent for resuscitation although it has been shown that patients with a stroke who have a terminal event requiring CPR do not survive the resuscitative efforts.⁹ Although the religious beliefs of this family were unknown, most denominations support the right to withhold resuscitation attempts.⁸ Although it was undetermined whether spiritual issues were addressed in this case, clinicians should routinely inquire about spiritual needs of the patient and family. A multidisciplinary approach involving support staff, social workers, and spiritual leaders is helpful in end-of-life situations.³

Which Course of Action Should Be Taken and Why?

Two factors played into the decision to not attempt resuscitation. First, the patient had several co-morbidities in addition to her underlying stroke. The chance of meaningful survival after CPR was dismal. Further, physicians are not ethically required to provide futile care to critically or terminally ill patients with little chance of survival, even if a family member insists.¹³ Second, standardized DNR order forms have been shown to improve documentation of DNR decisions and reduce uncertainty.¹⁴ In our case the standardized order form provided the crucial documentation of the spouse acting as surrogate decision-maker, a documentation that may not have occurred in the absence of a standardized form. The standardized DNR order form used at our institution is computer generated and prompts the physician to enter the decision-maker—in this case, the surrogate spouse.

As for the conclusion: the husband of the patient arrived on the floor shortly after the death of his wife. In retrospect, the husband stated that his wife would not have wanted CPR under these circumstances. He expressed his satisfaction with the medical therapy and care and acknowledged being well informed of the

poor prognosis. His only request was that an autopsy be performed. The autopsy for this patient showed that the patient suffered a stroke. She was also found to have metastatic adenocarcinoma with a probable lung primary. She also had a massive pulmonary embolus as the likely terminal event.

Conclusion

Although CPR can be considered a procedure, consent must be given to withhold it rather than receive it. In our case, even though an available family member gave consent to reverse the DNR order at a critical moment, the hierarchy of surrogate decision-making was honored. Standardized DNR order forms with detailed documentation including the surrogate decision-maker may prove helpful. **E&M**

References

- 1 Beauchamp TL, Childress JF. Principles of biomedical ethics 5th edition. Oxford University Press, Inc. 2001. Pg 155.
- 2 Winslade WJ, McGuire AL, Bard JS, Erwin C. The Texas medical jurisprudence examination. The University of Texas Medical Branch. 2002. Pg 142-143.
- 3 Faber-Langendoen K, Lanken PN. Dying patients in the intensive care unit: foregoing treatment, maintaining care. *Ann Intern Med* 2000;133:886-893.
- 4 Fagerlin A, Ditto PH, Danks JH, Houts RM, Smucker WD. Projection in surrogate decisions about life-sustaining medical treatments. *Health Psychol* 2001;20:166-175.
- 5 Sulmasy DP, Terry PB, Weisman CS, et al. The accuracy of substituted judgment in patients with terminal diagnoses. *Ann Intern Med* 1998;128:621-629.
- 6 Kouwenhoven WB, Jude JR, Knickerbocker GG. Closed chest cardiac massage. *JAMA* 1960;173:994-997.
- 7 Rabkin MT, Gillerman G, Rice NR. Orders not to resuscitate. *N Engl J Med* 1976;295:362-364.
- 8 Burns JP, Edwards J, Johnson J, Cassem NH, Truog RD. Do-not-resuscitate after 25 years. *Crit Care Med* 2003;31:1543-1550.
- 9 Bedell SE, Delbanco TL, Cook EF, Epstein FH. Survival after cardiopulmonary resuscitation in the hospital. *N Engl J Med* 1983;309:569-576.
- 10 Ebell MH, Becker LA, Barry HC, Hagen M. Survival after in-hospital cardiopulmonary resuscitation: a meta-analysis. *J Gen Intern Med* 1998;13:805-816.
- 11 de Vos R, Koster RW, de Haan RJ, et al. In-hospital cardiopulmonary resuscitation. *Arch Intern Med* 1999;159:845-850.
- 12 Diem SJ, Lantos JD, Tulsky JA. Cardiopulmonary resuscitation on television. *N Engl J Med* 1996;334:1578-1582.
- 13 Luce JM. Physicians do not have a responsibility to provide futile or unreasonable care if a patient or family insists. *Crit Care Med* 1995;23:760-766.
- 14 Mittelberger JA, Lo B, Martin D, Uhlmann RF. Impact of a procedure-specific do not resuscitate order form on documentation of do not resuscitate orders. *Arch Intern Med* 1993;153:228-232.

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HUMAN EMBRYOS, “TWINNING,” AND PUBLIC POLICY

JOHN JEFFERSON DAVIS, PHD

I. Introduction

“What we are seeing,” said Dr. Gail Zellman, a RAND Corporation researcher in Santa Monica, California, “is that there is reluctance by parents to do anything other than hold them.”¹ The reference to “holding” was not to any reluctance of parents to hold newborn children in their arms, but to holding in cold storage spare embryos created through in vitro fertilization procedures. Recent surveys have indicated that there are at least 396,526 frozen human embryos in the United States, with more being created daily.² Many parents experience deep ambivalence, wishing neither to implant these nascent human beings in the womb nor to destroy them. These frozen human embryos, existing in a limbo of suspended animation, are a powerful symbol and reminder of the deep ambivalence felt by the culture at large concerning the moral status of the human embryo.

In his influential book, *When Did I Begin?*, Norman Ford argued for a fundamental distinction between “potential” human individuality and “actual” human individuality. According to Ford, while genetic individuality begins at fertilization, “ontological” or fully actual human individuality is not established until some time after the fourteenth day following fertilization, since prior to that time, the nascent human entity is capable of splitting or “twinning,” leading to the birth of identical (monozygotic) twins.³ Such arguments from the possibility of human “twinning” have been appealed to by others as a basis for public policies allowing experimentation on human embryos prior to day fourteen, it being presumed that no true, distinct human being yet exists.⁴

It is the purpose of this article to argue that Ford’s understanding of human individuality and his argument from twinning is based on an unwarranted and questionable assumption: namely, that *indivisibility* is a *necessary* property of true human individuality. First, the historical and social location of this ethical debate will be briefly reviewed; second, Ford’s argument and distinctions will be rehearsed; and third, several arguments and thought experiments, including one based on John Rawls’ concept of the “original position”⁵ will be advanced, with the purpose of demonstrating the problematic nature of Ford’s assumption.

II. The Social and Historical Location of the Debate

The controversy concerning the moral status of the human embryo in the United States can be situated within a context created by four major social and biomedical developments in the last quarter century: abortion, in vitro fertilization, cloning,

and embryonic stem cell research. The United States Supreme Court decision in 1973, *Roe v. Wade*, ignited an ongoing controversy over abortion that has pitted the defenders of a woman's "right to choose" against the defenders of the unborn's "right to life."⁶ The birth of baby Louise Brown in England in 1978 heralded the spread of in vitro fertilization technology first in England, then in the United States, Australia, and other countries. This new technology also posed the issue of the moral status of human embryos created in vitro but cryopreserved rather than implanted in the womb.⁷ In 1994 a panel of experts convened by the National Institutes of Health recommended that research on pre-implantation human embryos should be permitted,⁸ but public opposition led to a ban on federal funding for such experimentation. The announcement in 1997 that Ian Wilmut, a Scottish scientist, had successfully cloned a sheep, "Dolly," generated a burst of media coverage and widespread concern about the possible dangers of human cloning. The cloning controversy was subsequently complicated by the related controversy concerning the experimental use of human embryonic stem cells, derived from the early embryo. The Clinton administration instituted a ban on federal funding of human reproductive cloning in 1998, and in 2001 the Bush administration issued guidelines restricting the federal funding of research on human embryonic stem cells.⁹ It was apparent that the rapidly evolving medical technology was outrunning American society's ability to reach social and legal consensus on such matters.¹⁰

The debate in the United States over the moral status of the human embryo can be seen against the backdrop of social and political struggles between interest groups competing for power and influence. Purported definitions of the "human person" are connected with specific social interests and groups occupying specific social locations. As Michel Foucault has argued, "'Truth' is linked in a circular relation with systems of power which produce and sustain it, and to effects of power which it induces and which extend it."¹¹ The operators of in vitro fertilization clinics, their clients, medical researchers, and patients hoping to benefit from stem cell research could be seen as having a vested interest in one view of the moral status of the human embryo, and the right-to-life lobby having a vested interest in another.¹² It may not be readily apparent that such a socio-political analysis cuts in one direction more than in another, but it would seem worthwhile to keep such a perspective in the background as this analysis proceeds. The Rawlsian thought experiment of an "original-position" methodology will be used in the final section of the paper in an attempt to reduce the element of bias associated with the realities of social interest and power.

III. When Does a Human Individual Begin?

Norman Ford has attempted to answer this critical question through a careful analysis of both the known facts of human fertilization and embryology and the philosophical resources of the Aristotelean and Thomistic traditions.¹³ In particular, Ford believes that the phenomena of "twinning" provides a powerful argument for concluding that an actual, determinate, and identifiable human individual or person does not exist from the time of fertilization. During the first approximately fourteen days of embryonic development, following fertilization, it is possible for the embryo to split and form identical ("monozygotic") twins. Such monozygotic or identical twins occur in approximately 3.5 of every 1000

live births.¹⁴

According to Ford, the possibility of twinning shows that the developing human, during the first fourteen days or so of development, lacks the *determinacy* and the stable *identity* that we normally associate with the human individual or person. On the matter of determinacy, one could ask whether the zygote constitutes one or two human individuals: if twinning did not occur, did the zygote constitute only a single human individual? But since the potential for twinning does exist, can or should we say that two individuals might exist in the zygote? "It would seem absurd," Ford believes, "to suggest that at the same time it could be both one and more than one human individual..."¹⁵ The presence of this numerical indeterminacy ("*one* or *two* individuals?") in the early embryo, then, would seem to preclude seeing the zygote as *actually* or fully a human individual in the usual sense of these terms.

A second philosophical problem raised by the phenomenon of twinning relates to the issue of a stable identity for the human individual over time. Suppose for a moment, Ford proposes, we consider a human zygote designated by the name "John."¹⁶ Further suppose that twinning occurs, and that we name the two resulting identical twins "John" and "Tom." The problem, according to Ford, is that we have no clear way of distinguishing "John" from "Tom," since both are genetically identical. Which one of the newly formed humans should be identified as "John," as the true successor to the zygotic "John" so designated before the time of twinning? The successors to the zygotic "John" are "identical indiscernibles," except for their spatial locations, and so it would seem that "John"'s stable identity over time is in doubt, inasmuch it seems impossible to draw a clear, continuous, and discernible narrative history for "John" from before the twinning event to after.

Commendably, Ford believes that it is crucial in these matters for investigators to adjust philosophical theories (of the human person) to facts, "rather than ignore or select the facts to suit a preferred philosophical theory."¹⁷ Ford concludes that in light of the embryological facts, and especially in light of the potential for twinning, it is unwarranted to draw any conclusion beyond that of the zygote "being one or more human individuals in potency";¹⁸ actual, determinate, and stable human individuality exists only some time after the fourteenth day of embryological development.¹⁹

IV. Are Humans Necessarily Indivisible?

I wish to argue that the conclusions drawn by Ford from the phenomenon of human twinning, while apparently quite plausible, are in fact based on a faulty premise, namely, that *indivisibility* is a *necessary* property of human *individuality*. As noted above, it is this assumption that leads Ford to conclude that the potential for twinning creates problems both in terms of determinacy and stable identity: If the embryo can split, are we looking at one individual or two? Can we clearly identify the same, continuing individual before and after the twinning event? It is precisely the potential for divisibility or fission—call it the property of "fissibility"—that seems to create these problems for the usual understanding of a human "individual."

I will argue to the contrary, however, that the concepts of a human *individual* and that of a stable human *identity* at any given time do not in fact require the property of *indivisibility* as a necessary attribute. This argument will appeal both to examples from the history of thought and to a number of thought experiments involving “possible universes.”

If we ask where in the Western philosophical tradition we might find the roots of the notion that the essence of the human self and identity is to be found in an unchanging and indivisible core, we may plausibly point to Plato’s doctrine of the soul set forth in the *Phaedo*:

Now, Cebes, he [Socrates] said, see whether this is our conclusion
From all that we have said. The soul is most like that which is
Divine, immortal, intelligible, uniform, *indissoluble*, and ever
Self-consistent and invariable, whereas body is most like that
Which is human, mortal, multiform, unintelligible, dissoluble,
And never self-consistent.²⁰

The Platonic soul, like God, is spiritual, though contaminated by its contact with the physical body; immortal and indivisible; it is the bearer of personal identity when the soul is born into a different body in its next birth, if it needs purification, or enters into the presence of God, if it has been purified through the pursuit of philosophy.²¹

This Platonic concept of an immortal, immaterial, and *indivisible* soul as the core of human individuality and identity has been enormously influential in Western civilization, being assumed by the church fathers and transmitted by them as the common cultural assumption of Christendom for more than fifteen hundred years. This Platonic concept of the indivisible self has continued to cast a long shadow as a largely unquestioned and “self-evident” assumption of Western thought even after the secularization of European culture in the Enlightenment and post-Enlightenment periods.

Aristotle, however, in his treatise *De Anima*, reminds us that in the earlier Greek tradition the concept of an indivisible soul or self was not a “given,” or self-evident. Plato’s doctrine of the soul came to prevail against a field of a variety of competitors. Empedocles thought that the soul was composed of “all the elements”; others thought of the soul as composed of fine particles of fire; Diogenes, of fine particles of air; Hippo, of water; Critias, of blood.²² The point here is not whether Plato in fact may have had a philosophically more plausible notion of the soul. The point is that for these earlier thinkers, it was hardly *self-evident* that one must think of the self/soul as indissoluble and indivisible in order to think of human individuality or identity. Plato’s concept came to dominate the subsequent history of thought, but it should be seen, in its context, as historically situated and constructed, rather than as a timeless, inevitable, and self-evident truth.

Much later in the history of Western thought David Hume called into question the common assumption, by then generally accepted as “self-evident,” that our sense of personal identity required some unchanging and indivisible metaphysical substrate such as “mind” or “soul.” An individual’s sense of

personal identity does require "some real bond among his perceptions," but this unity, Hume argued, is merely a quality "which we attribute to them" because of the three relations of "resemblance, contiguity, and causation." Our sense of personal identity over time, suggested Hume, derives from a psychological process involving the "smooth and uninterrupted progress of the thought along a train of connected ideas."²³ By custom and habit we attribute the sense of unity of our perceptual experience to the "soul" or "self," but introspection actually reveals only the stream of perceptions, not any necessary connection between these perceptions. To Hume, it was far from self-evident that there had to be an *indivisible* metaphysical entity like the "self" or "soul" to account for the psychological unity of human experience and sense of personal identity.

It is well known, of course, that Kant responded to Hume's skeptical conclusions and sought to establish the unity of human experience on an *a priori* basis, positing a "transcendental faculty of the imagination" that would be the "foundation of the possibility of all experience," unifying sensory perceptions and in fact making them possible.²⁴ Unfortunately for Kant, however, it turned out that the Euclidean and Newtonian concepts of time and space that he presupposed as *a priori* were in fact, in the light of an Einsteinian cosmology, more properly perceived as being situated in a particular empirical, historical, and social context, and constructed on that basis.

The foregoing observations have all been drawn from the traditions of Western civilization. It is worth noting that there is an entirely different, non-Western civilization that is not based on the assumption of the indivisibility of the self, namely, the *Buddhist* tradition. The Buddha is said to have taught the doctrine of *Anatta* or "no-self."²⁵ There is said to be no permanent, indivisible "self"; there are only the "Five Aggregates" of matter, sensation, perception, mental formations, and consciousness, which as they unceasingly arise and disappear, account for the *illusory* sense of a permanent "self." Far from being self-evident, such a (Platonic) view of a permanent and indivisible self is an illusory, false belief that must be uprooted if spiritual enlightenment is to occur. From the perspective of *conventional* truth, there is a continuing self; but from the deeper and more correct perspective of *ultimate* truth, such a "self" must be recognized for what it in fact is: an illusory construct. The 2,500-year history of Buddhist civilization demonstrates that it is quite possible to build a culture and a system of ethics without recourse to the notion of an indestructible, indivisible self.

The point of the foregoing references to Buddhism, Hume, and early Greek tradition is not to argue the merits or demerits of these positions per se, but only to retrieve a counter-history and counter-perspectives that can remind us that the "obvious" and "self-evident" Platonic idea is not the only way that the identity of the human individual can be conceptualized.

V. "Fourteen-Day 'Fissibility' and 'Surgical Clonability'"

Consider now a thought experiment or "possible world" designed to show that, conceptually, the property of indivisibility is not a *necessary* property of a human individual. Suppose that we imagine a world in which medical researchers recruit a hundred volunteers for an experiment involving an exotic drug with the

extraordinary power that it can induce in the subject the remarkable property of “fourteen-day fissibility” or “surgical clonability.” That is to say, the properties of the drug are such that in a 30-day period following the administration of the drug, there is an approximately fourteen-day period during which the experimental subject is “fissible” or “surgically clonable.” For such a subject, it is possible to administer general anesthesia, surgically divide the patient from head to foot into two symmetrical parts, and then, during the remainder of the 30-day period, have each half regrow itself into a complete human being, with no harm to either.

Let us further suppose that in this experiment the researchers, using double-blind methodology, administer the special drug to only one of the 100 subjects, and gives placebos to the other 99. Neither the researchers or the subjects know who has been given the special drug. No surgery has yet been performed to “clone” an individual. Now consider this question: should either the researchers or the experimental subjects regard any of the subjects in a different light, in view of the administration of the “fourteen-day fissibility” drug? Should the circumstance that one of their number has the remarkable property of being fissible be viewed as a basis for removing any pre-existing rights from that individual? If subject Number 93 had a right not to be harmed before being randomly selected to ingest the drug, should 93 still have that right afterward? It would seem quite arbitrary to deprive 93 of essential rights simply on the basis of possessing a remarkable property such as “fourteen-day fissibility.”

How might questions of *individuality* and *identity* be answered within the parameters of this thought experiment? As to the matter of individuality, the answer would be fairly straightforward. Subject 93 clearly is one human individual; if surgery is performed, then two human individuals exist in place of the previous one. The concept of “individuality” remains well defined both before and after surgery. “Subject 93” can be clearly distinguished by name or number from the other 99 subjects both before and after the administration of the drug; the property of being fissible does not alter the fact that Subject 93 is still an “individual,” that is, in the sense of being a particular entity that can be distinguished on the basis of certain specifiable characteristics from others in its class.²⁶

The question of *personal identity*, however, may appear to be less straightforward. Prior to surgery, Subject 93 has a clear sense of personal identity with a given set of experiences and memories. After surgery is performed, we have two successor individuals, who could be designated as subjects “93a” and “93b.” We then have the peculiar circumstance that following surgery, “93a” and “93b” both presumably share an identical set of memories of experiences prior to surgery; afterward, their respective choices and experiences would generate different sets of memories. The question is, does this unusual circumstance invalidate, for 93 or 93a or 93b, either a tenable concept of identity, or a basis for ascribing rights to any of the three? It is not apparent that an affirmative answer must be given to either question. Granted, the question of identity is unusual and somewhat confusing. Nevertheless, we can suppose after surgery that 93a and 93b can say, “We happen to share the same memories up to the time of surgery, but not afterward. That’s the way things are, and we accept it. We are still individuals—individuals, in this case, with a very unusual history.”

Furthermore, it would seem quite arbitrary to argue from the premise “93a and 93b share a set of common memories and have a very unusual personal history” to the conclusion that “93a and 93b should now be deprived of certain rights, e.g., the right not to be harmed.” One might consider by way of analogy the unusual circumstance of conjoined (“Siamese”) twins, in which two infants may share much of the same body.²⁷ In fact, the twins can be viewed as two human individuals who happen to share the same body. Should their right not to be harmed be invalidated by the fact that they share a body? If sharing a body does not disqualify a subject for given rights, why should sharing a set of memories be a disqualification?

Before leaving this thought experiment, it might be observed that the dictionary definitions of “individual” reflect the same tensions and strands of meaning involving the notions of *identity* and *indivisibility* (“nonfissibility”) that we have noted above. Philosophic disputes can not be resolved, of course, by mere reference to someone’s stipulated definition; however, the point is to note that such dictionary definitions can embody the historical “sediments” of a given culture’s notions concerning a given concept.

“Webster”²⁸ tells us that etymologically, the term “individual” derives from the Latin *individuus*, “indivisible”; cf. *dividere*, “to divide.” Etymologies, of course, are markers of historical origins, not necessarily of current usage. The second-listed definition [“D2”] given reflects this etymological origin: “an *indivisible* [emphasis added] entity or a totality which can not be separated into parts without altering the character or significance of these parts.”

The first-listed definition [“D1”], however, is that of “a single or *particular being* [emphasis added] as distinguished from a class, species, or collection.” It should be noted here that of these two definitions of “individual,” one of the definitions [D2] is based on the concept of *indivisibility*, while the other [D1] is based on the concept of *particularity* or the identifiability of one entity from among a class of similar objects. It has been the burden of this article to argue that these two concepts are logically distinct and not identical, though they have been often confused in common and even philosophical usage. The thought experiment above shows, I would argue, that while an indivisible subject is certainly a particular individual, it is not the case that a particular individual must necessarily have the property of indivisibility. D2 may logically entail D1, but D1 does not logically entail D2; D2 is not a necessary condition for D1.

Further, it is apparent that D2 (“indivisibility”) places a more stringent and more restrictive condition on the notion of “individual” than does D1 (“particularity” or “identifiability”). The current controversy over the moral status of the human embryo could be viewed, in effect, as a yet-unresolved controversy over which definition of human “individual”—D2 or D1—should obtain for matters of public policy. Norman Ford has, in effect, opted for D2. In the final section of this paper, a Rawlsian thought experiment will be proposed to argue in favor of D1, i.e., the more inclusive understanding of (human) “individual.”

VI. Human Embryos and the “Original Position”

In such a Rawlsian thought experiment the participants in the scenario imagine

that "...in one joint act, the principles which are to assign basic rights and duties" are to be chosen for a hypothetical "original position"²⁹ or starting point for the social order. Each of the participants deliberates on which principles will be chosen from behind a "veil of ignorance," not knowing in advance which position they might occupy in the society once the principles have been established. This Rawlsian "veil of ignorance" has the merit of forcing the participants to consider the merits of various principles from a more general perspective, not merely from the perspective of the self-interest of a particular player. As such, the Rawlsian methodology would seem well suited for the analysis of a highly contentious and interest-driven controversy such as the moral status of the human embryo.

In the present case, suppose, for the sake of simplicity, that the "original position" being imagined has many of the features of our present society. The cast of players might be imagined to be limited to the following: operators of in vitro fertilization clinics; medical researchers; women struggling with fertility problems; patients hoping for cures for genetically related diseases; elected officials; right-to-life activists; members of the general public; a human embryo prior to day 14. The specific question to be addressed is, In such an original position, which of the following two principles should be adopted: P1, which allow experimentation on the human embryo up to day 14 following fertilization, or P2, which would prohibit such (harmful) experimentation?

It might seem that operators of fertility clinics, women with fertility problems, patients seeking cures for genetically related diseases, medical researchers seeking federal support for human embryo research, and some elected officials would have an interest in promoting P1, while right-to-life activists and some members of the general public would have an interest in favor of P1, with elected officials being found on both sides of the debate. If, however, the *veil of ignorance* is invoked, how would the matter stand? It would seem that if the players, considering the possibility that they might be randomly assigned to occupy the position of the human embryo, would rationally favor the "do no harm to the innocent" rule expressed in P2. Adopting the rule P1 would allow the circumstance that a player assigned (randomly) to occupy the position of the human embryo could have her possibilities for life terminated by the decisions and self-interests of other players.

Two objections to this conclusion in favor of the P2 "do no harm" rule might be advanced. First, it might be said that the inclusion of the human embryo as a player in the hypothetical original position begs the question to be determined, namely the moral status of the human embryo. Advocates of P1, which would allow experimentation, deny that the embryo has moral standing in this case, and should not have "a place at the table" or be envisioned as a player in the original position. To this objection two replies might be made. First, it could be said that it is precisely the *contested* status of the embryo that has produced a circumstance of conflicted and apparently incommensurate moral perception, that the Rawlsian procedure might help to adjudicate. Rather than begging the question, it could be said that such a thought experiment provides a helpful way of bringing the issue into a new conceptual framework less riven by conflicting political interests, and into one which makes no prior assumptions of a religious or metaphysical character, beyond simple notions of justice and fairness.

In the second place, it could be observed that the inclusion of the human embryo as a player in the "original position," far from being "hypothetical," is in fact a very *real world* circumstance and not counter-factual. It is the case that the other players—fertility clinic operators, women with fertility problems, etc.—have all in fact at one time actually occupied the position of "human embryo." There is no way for any of the players to stand in the position of a player "15 or more days after fertilization" without *first* having occupied the position of an embryo "days 1-14." The early embryonic state is an essential and necessary developmental stage for any human player in a later and more advanced developmental state.

A second objection to the conclusion above (in favor of a P2 "do no harm" to the embryo rule) might be advanced from a utilitarian perspective. One player might argue that, given her utilitarian ethical framework, she would vote for the adoption of P1, allowing experimentation on the embryo, even considering the possibility that she might be assigned the position of an embryo, and have her life terminated by medical research. This player might argue that P1 would allow a society in which, though the lives of embryos could be sacrificed, the greater utility would be advanced, the benefits to infertile women, patients suffering from genetically related diseases, and so forth, outweighing the harms done to embryos. Such a player would be arguing, in effect, for her willingness to adopt P1 as an altruistic act of self-sacrifice for the sake of a greater social good.

Such a utilitarian argument, while plausible, would seem to be seriously flawed for the following reason. While any player might claim a moral right to exercise altruism as a personal choice, it is far from apparent that the player would be morally justified in *imposing altruism on others* apart from their consent—which in effect is the case with the P1 rule. To choose to sacrifice oneself for medical research is one thing; to force others to sacrifice themselves for the good of others is another. Consequently, it would seem that the conclusion favoring P2, the "do no harm" rule, would still stand.

VII. Concluding Reflections: Descriptive Metaphysics and Procrustean Beds

In the opening section of this article it had been noted that Norman Ford had stated the commendable principle that in discussions of the moral status of the human embryo, the correct procedure was to "...make philosophical theories fit the facts rather than ignore or select the facts to suit a preferred philosophical theory."³⁰ Despite his good intentions, it appears that Ford's conclusions are not in accord with this principle of the priority of empirical fact over metaphysical theory. His root assumption, that *indivisibility* is a *necessary* attribute of human *individuality*, is neither logically or conceptually necessary, nor in accord with the actual properties of existing human individuals in the first fourteen or so days following fertilization.

For most of human history, the distinction between what has here been designated as a "D2" ("indivisibility") or "D1" ("identifiability" or "particularity") concept of human individuality would have made no practical difference and

could have been taken as essentially coterminous. Plato and Aristotle, whose notions of the “soul” as a basis for human identity have had such a pervasive influence in Western thought, had no way of knowing the factual properties of the human embryo during the first fourteen days of its development. It was not until the 1880s, with the emergence of the modern study of human embryology, and especially in the post-1978 period, following the development of the techniques of in vitro fertilization, that the development of the early human embryo could be observed outside the womb. Before that time, there was no way of observing an early embryo that was capable of “twinning,” and the need to consider the philosophical implications of this physiological fact did not arise. Prior to 1978, a “D1 vs. D2” distinction made no difference; but now, in the post-1978 situation, with issues of experimentation on human embryo on the table, the distinction assumes a significant and critical importance that it did not have in earlier periods of human history.

This consideration of the influence of pre-existing metaphysical assumptions on the interpretation of embryological facts might recall the ancient Greek tale of Procrustes (“the stretcher”), who was said to possess a hammer, saw, and bed. Procrustes would compel unwitting strangers to lie on his bed, and those who were too long for it, he would cut down to size; those who were shorter than the bed would be hammered out until they fitted it exactly.³¹ The “common sense” notion of individuality, assuming that identifiability (D1) *must* presuppose indivisibility (D2) is a “Procrustean bed” that forces the actual, existing human being in the first fourteen days of development to conform to a pre-existing concept that was formulated by the philosophical tradition before the newer facts of human embryology became known. The tradition has said, in effect, “To be a human individual, you must be indivisible.” The facts of embryology say, however, “That’s well and good, but take a look at the *actual* human being, apart from your prior philosophizing. Real human beings have the property of divisibility during the first fourteen days; they are empirically indivisible for the rest of the life cycle. Better to adjust your theories accordingly.” The Procrustean bed of the traditional, “common sense” notion of individuality as necessarily indivisible in effect “chops off” or “amputates” the first fourteen days of the life cycle of *Homo sapiens*, an essential developmental pathway traversed by every human individual now living on the planet. A truly *descriptive* metaphysics³² of the human individual will adjust, as it were, “Plato to the facts” rather than “the facts to Plato.”

After fertilization, a D1 concept of individuality is *sufficient* to distinguish the human zygote from the earlier sperm, oocyte, and male and female parents which preceded it. In the event that twinning should occur, then two D1 human individuals exist and can be distinguished; *after* about day fourteen, the D1 individual(s) then has/have the “normal” D2 property of indivisibility that obtains (empirically—though not by logical necessity) for the remainder of the human life cycle.

Finally, it might be observed that the more inclusive D1 concept of human individuality argued here is consistent with the progressive trajectory of the American individual rights tradition. It is a well-known fact of history that when Thomas Jefferson in 1776 declared that it was “self evident” that “all men were created equal,” the political realities were in fact that only *free, white, property-*

owning males were accorded equality of rights. In 1863 in the Emancipation Proclamation, Abraham Lincoln asserted that slaves should be recognized as free individuals, rather than property to be used by others. In 1920 the Nineteenth Amendment granted women the right to vote. The Indian Citizenship Act of 1924 extended rights of suffrage to Native Americans.³³ The expansive thrust of the American rights tradition has, in effect, been to recognize the arbitrariness of excluding those who are *biologically* members of the species *Homo sapiens* from the category of individuals with legal rights. This article has argued that *indivisibility* is not a property that is necessary to recognize and identify a living member of the species *Homo sapiens* as a *human individual*. Consequently, there is no compelling reason that the "do not harm" rule should not apply during the first fourteen days of the human life cycle as it would thereafter. E&M

References

- 1 Nicholas Wade, "Clinics Hold More Embryos Than Had Been Thought," *New York Times*, May 9, 2003; www.nytimes.com/2003/05/09/science/.
- 2 Ibid. It is believed that there are also some 52,000 frozen embryos in Great Britain, and some 71,000 in Australia.
- 3 Norman M. Ford, *When Did I Begin: Conception of the Human Individual in History, Philosophy and Science* (Cambridge: Cambridge University Press, 1988), pp.117-131.
- 4 As, for example, in the Human Fertilization and Embryology Act, adopted in Great Britain in 1990: Michael Mulkey, *The Embryo Research Debate: Science and the Politics of Reproduction* (Cambridge: Cambridge University Press, 1997), pp.3, 113. Ford himself has clearly stated his opposition to destructive human embryo research in his more recent book, *The Prenatal Person* (Oxford: Blackwell, 2002), p.70, but his line of argument has been taken in a different direction by others.
- 5 John Rawls, *A Theory of Justice* (Cambridge, MA: Harvard University Press, 1971), pp.11, 12; 118-192.
- 6 For historical and legal background on the abortion controversy, see John T. Noonan, Jr., ed., *The Morality of Abortion: Legal and Historical Perspectives* (Cambridge: Harvard University Press, 1970); James C. Mohr, *Abortion in America: The Origins and Evolution of National Policy* (New York: Oxford University Press, 1978).
- 7 The clinical and scientific aspects of in vitro fertilization are treated in Kay Elder and Brian Dale, *In Vitro Fertilization*, 2nd ed. (Cambridge: Cambridge University Press, 2000).
- 8 National Institutes of Health, *Final Report of the Human Embryo Research Panel* (Bethesda, MD: September 27, 1994).
- 9 For an overview of current legislation in this area, see "Pending Stem Cell Research and Cloning Legislation," Stem Cell Information: National Institutes of Health, <http://stemcells.nih.gov/fedPolicy/pendingLegis.asp>; and Daniel Avila, "The Present Standing of the Human Embryo in U.S. Law," *National Catholic Bioethics Quarterly* (Summer 2001), pp.203-226.
- 10 The earlier and parallel controversies over the moral status of the human embryo in England during the 1980s has been carefully analyzed in Michael Mulkey, *The Embryo Research Debate*, cited in n.4 above.
- 11 Michel Foucault, *Power/Knowledge*, ed. Colin Gordon (New York: Pantheon Books, 1980), p.133. Foucault's "genealogical" analysis of social institutions and linking of ideologies and power relations in society is also set forth in Foucault, *The Order of Things: an Archaeology of the Human Sciences* (New York: Random House, 1970), and *The Archaeology of Knowledge* (New York: Pantheon Books, 1972).
- 12 Elected officials also have political and economic interests in the issue. In a speech given in 2001, German Chancellor Gerhard Schroder addressed the issue of human embryo research and stated that he did not want to see Germany "lose its lead in the rapidly growing biotechnology industry,"

- and pointed out the economic potential of such medical research: Holger Breithaupt, "Germany Has Started a Broad Debate about Legalising the Use of Surplus Embryos for Biomedical Research," *EMBO Reports* 2:7 (2001):552-3.
- 13 Ford, op. cit.; see especially pp.117-131.
 - 14 Ronan O'Rahilly and Fabiola Muller, *Human Embryology and Teratology*, 2nd ed. (New York: John Wiley & Sons, 1996), p.46. On human embryology, see also Keith L. Moore and T.V.N. Persaud, *The Developing Human: Clinically Oriented Embryology*, 6th ed. (Philadelphia: W.B. Saunders, 1998), and Scott F. Gilbert, *Developmental Biology*, 7th ed. (Sunderland, MA: Sinauer Associates, 2003).
 - 15 Ford, op. cit., p.120.
 - 16 Ibid., p.122.
 - 17 Ibid., p.130.
 - 18 Ibid., p.131.
 - 19 For similar conclusions, see also Carol A. Tauer, "The Tradition of Probabilism and the Moral Status of the Early Embryo," *Theological Studies* 45 (1984) 3-33; Thomas Shannon and Allan Wolter, *Theological Studies* 51 (1990) 603-27; Richard A. McCormick, "Notes on Moral Theology: 1978," *Theological Studies* 40 (1979) 108-9.
 - 20 *Phaedo* 80b. The word translated here as "indissoluble" or "undissolved" is *adiailuto*. See Liddell and Scott, *A Greek-English Lexicon*, 9th ed. (Oxford: Clarendon Press, 1996), p.22. For Plato, the soul is indissoluble or indivisible, since it is not composed of parts.
 - 21 *Phaedo* 80e, 81e.
 - 22 *De Anima* I,ii.
 - 23 David Hume, *An Enquiry Concerning Human Understanding* (La Salle, IL: Open Court, 1966; originally published 1777), pp.266-67; "Treatise of Human Nature – Part IV."
 - 24 Kant, *Critique of Pure Reason*, A:101, "Of the Synthesis of Reproduction in Imagination."
 - 25 See, for example, Walpola Rahula, *What the Buddha Taught* (New York: Grove Weidenfeld, 1959), ch. 6, "The Doctrine of No-Soul: *Anatta*."
 - 26 For example, the possession of a material body and a spatial location can be the basis for recognizing and identifying a particular individual: cf. P.F. Strawson, *Individuals: An Essay in Descriptive Metaphysics* (London: Methuen & Co., 1959), pp.55, 56.
 - 27 For discussion of conjoined twins, see Bruce M. Carlson, *Human Embryology and Developmental Biology* (St. Louis: Mosby, 1994), pp.42-44, where the following cases are distinguished: head-to-head fusion, rump-to-rump fusion, and massive fusion of head and trunk.
 - 28 *Webster's Third New International Dictionary of the English Language Unabridged* (Springfield, MA: G.&C. Merriam Co., 1981), p.1152, "individual."
 - 29 Rawls, op. cit., p.11.
 - 30 Ford, op. cit., p.130.
 - 31 Mark Morford and Robert Lenardon, *Classical Mythology*, 4th ed. (New York: Longman, 1991), p.497. The legend is recounted by Plutarch in the *Life of Theseus* in the early second century A.D.
 - 32 The phrase "descriptive metaphysics" is from Strawson, *Individuals*, op. cit.
 - 33 These landmarks in the expanding concept of rights in America are noted in Roderick Frazier Nash, *The Rights of Nature: A History of Environmental Ethics* (Madison: University of Wisconsin Press, 1989), p.7.

WHEN NAMES MAKE CLAIMS: ETHICAL ISSUES IN MEDICAL DEVICE MARKETING

KATRINA A. BRAMSTEDT, PHD

Introduction

“Image is Everything,” or so says the camera division of Canon, Inc. Product branding is ultimately about creating a relationship with the customer, and in the case of the direct-to-consumer advertising strategies of pharmaceuticals, the customer is both the physician and the patient. Even if a product is stripped of its print, radio, or television advertising, the name of the product itself is an advertisement. Thus said, the name of a product and the image it conjures are relevant to its marketing to consumers.

In the United States, the generic and trade names (also known as brand names) of pharmaceuticals are formally evaluated prior to marketing; however, there is no formal process of name analysis for medical device brand names (personal communication, US Food and Drug administration, 28 March 2003). Generic drug names are created and assigned by the United States Adopted Names Council, which establishes logical nomenclature classifications based on pharmacological and/or chemical relationships (for example, angiotensin-converting-enzyme inhibitors end in “pril”). Generic names are then sent to the International Nonproprietary Name Committee of the World Health Organization for review and approval. Generic names must not be misleading or confusing (similar to other drug names), or imply efficacy or application to particular anatomical parts.¹

Trade names are first sent to the United States Patent and Trademark Office (PTO) for evaluation. The PTO review focuses only on assigning legal rights to a brand name and is not permitted to include an evaluation of the name with regard to its potential to cause clinical confusion in prescribing or use. Once approved by the PTO, the drug’s trade name is then reviewed by the Food and Drug Administration Office of Postmarketing Drug Risk Assessment. Part of this requirement stems from the fact that critical errors can occur when two or more drugs have similar sounding names, names that are difficult to pronounce, or names that can be easily misspelled and interpreted as other drugs. Between 1993 and 1998, 52 deaths were reported in the US as caused by drug name errors (mixups made by medical professionals or patients due to drug name confusion).² The confusion that comes from phonologically similar names for different drugs (see Table 1) can lead to clinical complications, should patients mistakenly take the wrong medication. Also, since certain letters of the alphabet (W, M, N, C, L, O) are susceptible to blurring or confusion when handwritten, there is concern about using such letters in drug trade names.³ An additional consideration is the potential for a drug trade name to impart notions of composition, quality, safety, and performance. Approximately one-third of the names submitted yearly to the

Food and Drug Administration are rejected (www.fda.gov).

The international marketing of drugs can also pose potential problems. If a drug is intended to be marketed in both the US and the European Union, its trade name is also reviewed by European patent and trademark offices. The European Union's Invented Name Review Group (London, UK) reviews all manufacturer-submitted potential trade names to ensure that the names do not convey "misleading therapeutic or pharmaceutical connotations," that they are not misleading with regard to the composition of the product, and that they are not prone to cause "confusion in print, handwriting, or speech" with regard to an existing product.⁴ As in the case of Prostin, multiple chemical compounds (with different functions and side effects) can have the same trade name across various countries, leading to prescribing problems for travelers or physicians who relocate their practice.⁵ Conversely, some drugs have different trade names throughout the world (Table 2) because some names may not be appealing in certain countries for linguistic (difficult pronunciations) or cultural (negative associations with the word in either formal, conversational, or street/slang usage) reasons.

The issues involved in drug trade name assignment raise questions about the trade name assignment for medical devices. Because medical devices are generally marketed to physicians, is there a different pattern of product naming by manufacturers? The trade names of devices such as implants might very well be significant for patients, especially in the case of products which are life sustaining (e.g., pacemaker) and where such patients carry identification cards that are a daily reminder of the device name. This paper explores the ethical issues in trade name assignment by analyzing product naming for three types of medical device implants: 1) pacemakers, 2) implantable cardioverter defibrillators (ICD), and 3) coronary stents.

FDA Review of Medical Device Trade Names

New medical devices are reviewed by the FDA through either the manufacturer's Pre-Market Approval filing (PMA) or 510(k) Notification filing. PMA filings are made for devices that are critical (life-supporting) or of a new concept that has not been marketed before in the US. 510(k) filings are made for devices that are non-critical and substantially equivalent to devices manufactured prior to 1976. Manufacturer filings contain information such as device design, manufacturing processes, packaging, safety, and effectiveness. The FDA can reject a device name due to concerns of misleading either the public or physicians regarding the product's FDA-approved use; however, there is no formal, systematic process of name analysis.

Images and Linguistics in Name Branding

Clearly, physicians and patients would not want involvement with an ICD named "JOLT" or a pacemaker named "SKIP" as such names evoke obviously unpleasant images. Further, a product's trade name could also embed images that are misleading in terms of the product's design, composition, safety, or effectiveness. Device manufacturers should use the same caution about misleading therapeutic

connotations that is required of pharmaceutical manufacturers; however, there is no formal oversight of device naming. This gap in systematic formality allows the potential for misleading advertising of products via name branding, such as for diabetic monitoring equipment, medication pumps, and hearing aids. In the case of implantable devices, they become part of the patient and part of his/her body image; thus, product image via its brand name can be especially significant. Some devices, such as pacemakers, ventricular assist devices, and ICDs are life supporting and thus the name of the product and the image the name generates can be particularly valuable to the patient. While surgeons may not be emotionally swayed by the implant's brand name, marketing research confirms that patients can be emotionally impacted by a product's name.⁶

Words are not neutral; rather, they trigger an emotional response when heard.⁶ Consider the breakfast cereals All-Bran[®], Corn Pops[®], and Cream of Wheat[®]. These brand names tell a story about the product. Just as "Wilted Wheat" would likely not be a good name for a breakfast cereal, "Chaos" would not be a good name for a cochlear implant, as both names tell a "bad" story for their associated product. Brand names that remind patients of their disease or illness are "usurped by brand names that are benefit-driven, which succeed in creating positive associations of enablement, of hope and of a better quality of life."⁷ Examples of benefit-driven trade names are Celebrex[®] (nonsteroidal anti-inflammatory drug; G. D. Searle & Co.), Zestril[®] (angiotensin converting enzyme inhibitor; AstraZeneca Pharmaceuticals LP), and Claritin[®] (antihistamine; Schering-Plough HealthCare Products Inc.); all three "suggest the ability to move forward and get on with life."⁷ As promoted by Interbrand Wood Healthcare, the company who created the trade name Relenza[®] for GlaxoSmithKline's influenza therapy inhaler, the name "suggests relief from the symptoms of influenza."⁸ Interbrand also promotes their creation of the trade name Viagra[®] for Pfizer's erectile dysfunction drug, suggesting the name is "aspirational, evokes energy, and is suggestive of the drug's benefits."⁸

The sound of a name can be significant to how the product is perceived and how successful it will be, and elements of the sound itself carry certain intrinsic reactions.⁶ Sounds have "a certain feeling-significance, they have a certain meaning in themselves."⁹ The name "Prozac[®]" has nothing to do with the chemical name of the drug ((±)-N-methyl-3-phenyl-3-[(a,a,a-trifluoro-*p*-tolyl)-oxy]propylamine hydrochloride), its generic name (fluoxetine hydrochloride), the name of the company who invented the drug (Eli Lilly and Co., Inc.), or the type of medication it is (antidepressant). It is not even a "real" word, but an invented one. The name was chosen based upon the fact that it begins and ends with a "plosive": the "P" and "AC" are sounds that cause air pressure to build in the oral cavity and be forcefully expelled when spoken. Product names that contain one or more "plosives" are known to be more successful than product names that do not.⁶

Proposed Strategy for the Analysis of Medical Device Trade Names

Table 3 presents a four-step strategy for analyzing the ethical appropriateness of a medical device trade name. In step one, the meanings of the whole name

and fragments of the name are contemplated. In step two, the name and its fragments are analyzed for a relationship to ten features of the product: 1) Product appearance (e.g., shape, design); 2) Product composition/construction (e.g., ingredients, components); 3) Product mode of use (e.g., oral, rectal, topical); 4) Ease of use of the product (e.g., frictionless, bendable); 5) Speed of use/speed of achieving outcome; 6) Benefits/outcomes/sense of well-being with product use; 7) Product safety; 8) Size (e.g., large, small); 9) Strength/durability of the product; and 10) Product versatility (e.g., adult and pediatric use, multiple indications). In step three, if a relationship is confirmed, then the relationship is reflected on in terms of the name being misleading with respect to that particular product feature. The ethical permissibility of the name is a reflection of how many misleading relationships are detected (step four), with the stipulation that misrepresentations of clinical safety and effectiveness (benefits/outcome/sense of well-being) are the most ethically problematic matters, and thus have more weight compared to other product variables such as appearance and size.

The analysis of the meanings of the whole name and its fragments (step one above), as well as the relationship of the name and its fragments to the ten product features (step two), is open to subjectivity. While there are common English-language meanings and usage of words, as well as dictionary definitions, there are no universally accepted beliefs and values with regard to the meanings of words. Further, there are no universally accepted beliefs and values with regard to these meanings and their relationship to product usage. Because of this, the use of linguistic software such as NameBuilder® and NameCheck™ (Macroworks) to formally analyze the meaning of prefixes, suffixes, root words, as well as whole words, would add objectivity to the process of name evaluation. For example, NameCheck™ searches a word and portions of the word for any negative meanings in a variety of languages. This includes slang, swear words, street language and a variety of other terms. NameBuilder® analyzes words for the concepts that are associated with the word. Even with the use of standardized software, the four-step approach described herein might be best accomplished using a team of name reviewers so that multiple assessments could be compared and a group decision made.

Table 4 presents a selection of medical device implants that are approved for marketing in the US by the FDA. The manufacturers chosen are those considered to have a major market share for each device category. The table presents an analysis of these medical device trade names as conducted by the author (alone). Lacking licensed access to the Macroworks software, I relied on the common-English understanding of the meaning of the brand name using Merriam-Webster's Tenth Edition Collegiate Dictionary. In the case of invented words (e.g., Prizm®), the related name was examined (prism). Table 5 presents a summary of the name analysis for each device. For example, the name of Guidant's ICD, Mini™, suggests that the device is small; there is nothing inherently misleading about this device name if in fact the device is small in size compared to other ICDs. The Magic Wallstent® Radius (Johnson & Johnson/Cordis) name, however, does present ethical problems. Calling any medical product "Magic" relates a sense of supernatural power or enchantment, and such could be seen to relate to ease of use of the product, speed of use or speed of attaining a beneficial outcome, or even the safety, durability, and versatility of the product.

Of the 29 names evaluated, I classified 48% as ethically problematic. 67% of the coronary stent names are problematic, as are 50% of the ICD names, and 33% of the pacemaker names. In my evaluation, most coronary stent names tend to be misleading about speed and ease of use of the product (implied use is with a delivery catheter), whereas ICD and pacemaker names tend to be misleading about product effectiveness.

In the case of coronary stents, it is clear that medical device marketing strategies seize on the physician's desire for a product that gets quickly positioned and deployed into the coronary anatomy. While vessel apposition and device scaffolding are important to outcomes, getting the stent quickly to the lesion is also highly valued by interventional cardiologists. Although ease of stent positioning also says something about its agility and trackability in the anatomy, naming stents seems to be based more on the stent delivery system than the stent itself, yet the two items are so closely intertwined that marketing of one notion (speed) works for both products.

In the case of ICDs and pacemakers, the speed of the device's response to the heart's rhythm disturbance is critical; however, trade name assignment focuses not on such speed, but rather outcomes of device use. This is likely because ICDs and pacemakers are viewed as life support devices whereas coronary stents, though an intervention with potentially significant clinical impact, are not generally viewed as life support technology. In a review of the pacemaker and ICD trade names found to be misleading, all had the common feature of being misleading with specific regard to "Benefits/Outcome/Sense of Well-being."

Discussion

The purpose of this analysis is not to stifle the creativity of medical product marketing but rather to spotlight the potential for product misrepresentation via brand naming and to offer guidelines for ethical brand name development. The proposed system of ten unique name evaluation variables is not a validated tool, but rather it represents the first step toward a formal process of device branding review that reflects on the ethical appropriateness of the name. Merging the ten variables with linguistic computer software would create a tool potentially suitable for the analysis of both medical device and pharmaceutical brand names. Using an Institutional Review Board-approved research protocol, the tool could be studied with the aid of linguists and focus groups consisting of physicians, pharmacists, and patients.

Fragments of a trade name can express size (max-, mini-), color (clear-), or quality (super-), for example. Trade names that may mislead consumers with regard to the product generally include such fragments as super-, -max, dyna-, dura-, omni-, etc. Some trade names may indeed be invented (not "real") but contain fragments that relate specifically to the product's organ/disease target or the intended therapeutic outcome (e.g., angio-, cardio-, ortho-, onco-). When combined with the prior mentioned fragments, these "new" words can be misleading as they can overstate the facts about the product due to the image created by the word (even if the word is not a "real" word, such as "Angiomax"[®], The Medicines Company). Creation and review of trade names should reflect the word, the fragments within the word, and the images the word conjures.

Based upon the fact that words and word fragments can conjure images about a product, the FDA should approve drug and device trade names that are not ethically problematic. Words and word fragments that relate to efficacy, speed, power, energy, healing acts (e.g., restore), healing values (e.g., esprit, promise), and certainty are ethically problematic as clinical trial names,¹² and should therefore also be considered ethically problematic as drug and device trade names. Further, words and word fragments that connote magic, status, quality, safety, or prestige are also ethically problematic, even if such words do not readily have a medical association (e.g., elite, epic). In general, invented trade names that use “plosives” are less ethically problematic than “real” words that have intrinsic meanings that relate to the use, performance, or benefits of the product (see Table 4). Also, drug trade names that are based on the generic name of the drug are ethically appropriate (e.g., Ticar®, generic name ticarcillin disodium, GlaxoSmithKline).

While it has been argued that drugs (and presumably medical devices) are developed to improve one’s quality of life and therefore the product’s name should reflect or at least suggest such benefit instead of being a reminder that the patient is ill,⁷ misleading trade names are ethically problematic as they have the potential to affect prescribing patterns in such a way that the best sounding product will be used as opposed to a product with a similar safety and effectiveness profile that is less expensive. In a setting of limited financial resources, the safety and effectiveness of a medical product should be enough to facilitate its sale and use.

Patients are actively solicited by medical manufacturers to purchase their advertised product, and such solicitation affects the prescribing patterns of physicians.¹⁰ In a recent study conducted by the FDA, of those patients who asked their doctor for a specific brand name prescription drug, 69% were given a prescription for that specific brand.¹¹ Names which are misleading could lead to greater demand by patients for whom other (lower cost) drugs and devices are clinically sufficient, thus wasting medical resources in an era where resources are often limited. While medical devices are often prescribed by physicians without regard to patient preferences, trade names can conjure images for both the prescribing doctor and the recipient patient, whether the device is as complex (and life saving) as a heart implant, or as simple as lancets and syringes. In their marketing of medical products, manufacturers have an ethical duty not to facilitate confusion amongst patients and health care workers, as well as not to create false images of products through their trade names. This duty should extend to medical device manufacturers, not just pharmaceutical companies.

E&M

Table 1. Confusing Drug Trade Names* (trade name, generic name, manufacturer, medical use)

Celexa® (citalopram hydrobromide), Forest Pharmaceuticals, depression	Zyprexa® (olanzapine), Eli Lilly and Co., schizophrenia
Fosamax® (alendronate sodium), Merck & Co. Inc., postmenopausal osteoporosis	Flomax® (tamsulosin hydrochloride), Boehringer Ingelheim Pharmaceuticals Inc., benign prostatic hyperplasia
Perceptin™ (code name GT 2331), Gliatech Inc., investigative drug for attention deficit hyperactivity disorder	Herceptin® (trastuzumab), Genentech Inc., breast cancer
Premarin® (conjugated estrogen), Wyeth, menopause	Primaxin® (imipenem-cilastatin), Merck & Co. Inc., antibiotic
Serophene® (clomiphene citrate), Serono Inc., ovulatory failure	Serafem™ (fluoxetine hydrochloride), Eli Lilly and Co., premenstrual dysphoric disorder

*from www.fda.org

Boehringer Ingelheim Pharmaceuticals Inc. (Ridgefield, CT);

Eli Lilly and Co. (Indianapolis, IN); Forest Pharmaceuticals

(St. Louis, MO); Genentech Inc. (South San Francisco, CA);

Gliatech Inc. (Cleveland, OH); Merck & Co. Inc.

(Whitehouse Station, NJ); Serono Inc. (Rockland, MA);

Wyeth (Madison, NJ).

Table 2. Drug Trade Names by Country (generic name, medical indication, manufacturer; trade name, country of use)

Tamsulosin hydrochloride (benign prostatic hyperplasia; Boehringer Ingelheim Pharmaceuticals, Inc.)
Alna® (Germany)
Flomax® (USA)
Josir® (France)
Pradif® (Italy)
Secotex® (Mexico)
Urolosin® (Spain)
Pramipexole dihydrochloride (idiopathic Parkinson's disease; Boehringer Ingelheim Pharmaceuticals, Inc.)
Mirapex® (USA)
Mirapexin® (European Union)
Sifrol® (European Union)

Table 3. Trade Name Analysis Strategy

Product Trade Name _____	Product Appearance	Product Composition/ Construction	Product Mode of Use	Product Ease of Use	Speed of Use/Speed of Outcome	Benefits/Outcome/ Sense of Well-being	Product Safety	Size of Product	Strength/Durability of Product	Product Versatility
1. Common understanding and usage of the name and the fragments of the name: _____ _____ _____ _____ _____ _____										
2. Does the name and/or its fragments relate to the following 10 items? (insert "-" or "+")										
3. Is the name and/or its fragments misleading with regard to each "+" item from section 2? (insert "-" or "+")										
4. The total number of "+" responses from item 3:	The greater the number of "+" responses the greater the ethical inappropriateness of the trade name. (NOTE: Misrepresentation of safety and effectiveness [i.e., benefits/outcome/sense of well-being, product safety] have more weight compared to other variables, such as size and appearance).									

Table 4. Positive/Negative Correlation of Medical Device Trade Names with Specific Ethical Criteria (step 2 of the analysis strategy presented in Table 3)

Product Trade Name	Product Appearance	Product Composition/Construction	Product Mode of Use	Product Ease of Use	Speed of Use/Speed of Outcome	Benefits/Outcome/Sense of Well-being	Product Safety	Size of Product	Strength/Durability of Product	Product Versatility
Pacemaker										
Discovery™ ¹	-	-	-	-	-	-	-	-	-	-
Insignia™ ¹	-	-	-	-	-	+	-	-	-	-
Meridian™ ¹	-	-	-	-	-	+	-	-	-	-
Pulsar™ ¹	-	-	-	-	+	+	-	-	+	-
Vigor® ¹	-	-	-	-	+	+	-	-	+	-
Kappa® ²	-	-	-	-	-	-	-	-	-	-
Sigma® ²	-	-	-	-	-	-	-	-	-	-
Affinity™ ³	-	-	-	-	-	+	-	-	-	+
Identity™ ³	-	-	-	-	-	-	-	-	-	-
Microny™ ³	-	-	-	-	-	-	-	+	-	-
Regency™ ³	-	-	-	-	-	+	-	-	+	-
Trilogy™ ³	-	-	-	-	-	-	-	-	-	-
ICD										
Mini™ ¹	-	-	-	-	-	-	-	+	-	-
Prizm® ¹	-	-	-	-	-	-	-	-	-	-
Gem® ²	-	-	-	-	-	+	-	-	+	-
InSync® ²	-	-	-	-	-	+	+	-	-	-
Marquis™ ²	-	-	-	-	-	+	-	-	+	-
Contour™ ³	+	-	-	+	-	-	-	-	-	+
Epic™ ³	-	-	-	-	-	+	-	-	+	+
Photon™ ³	-	-	-	-	-	-	-	-	-	-
Coronary Stent										
Multi-Link® ¹	+	+	-	-	-	-	-	-	-	-
Express ² ™ ⁴	-	-	-	+	+	+	-	-	-	-
Magic Wallstent® Radius ⁴	+	-	-	+	+	+	+	-	+	+
NIR® Elite ⁴	-	-	-	+	+	+	+	-	+	+
NIR® Monorail™ ⁴	+	-	-	+	+	-	-	-	-	-
Bx Sonic™ ⁵	-	-	-	+	+	-	-	-	-	-
Crossflex™ LC ⁵	-	-	-	+	+	-	-	-	-	+
Velocity® ⁵	-	-	-	+	+	-	-	-	-	-
S7 Zipper ⁶	+	-	-	+	+	+	-	-	-	-

ICD = (implantable cardioverter defibrillator)

1. Guidant Corp. (Temecula, CA); 2. Medtronic, Inc (Minneapolis, MN); 3. St. Jude Medical, Inc. (Sylmar, CA); 4. Boston Scientific Corp. (Boston, MA); 5. Johnson & Johnson/Cordis (Miami, FL); 6. Medtronic AVE (Santa Rosa, CA).

Table 5. Outcome of Medical Device Trade Name Analysis

Product Trade Name	Final Score*	Name misleading with regard to:
Pacemaker		
Discovery™ ¹	0	NA
Insignia™ ¹	0	NA
Meridian™ ¹	1	Benefits/Outcome/Sense of Well-being
Pulsar™ ¹	0	NA
Vigor® ¹	3	Benefits/Outcome/Sense of Well-being, Product Safety, Strength/Durability of Product
Kappa® ²	0	NA
Sigma® ²	0	NA
Affinity™ ³	2	Benefits/Outcome/Sense of Well-being, Product Versatility
Identity™ ³	0	NA
Microny™ ³	0	NA
Regency™ ³	2	Benefits/Outcome/Sense of Well-being, Strength/Durability of Product
Trilogy™ ³	0	NA
ICD		
Mini™ ¹	0	NA
Prizm® ¹	0	NA
Gem® ²	1	Benefits/Outcome/Sense of Well-being
InSync® ²	2	Benefits/Outcome/Sense of Well-being, Product Safety
Marquis™ ²	1	Benefits/Outcome/Sense of Well-being
Contour™ ³	0	NA
Epic™ ³	2	Benefits/Outcome/Sense of Well-being, Strength/Durability of Product
Photon™ ³	0	NA
Coronary Stent		
Multi-Link® ¹	0	NA
Express™ ² ⁴	4	Product Ease of Use, Speed of Use/Speed of Outcome, Benefits/Outcome/Sense of Well-being, Product Safety
Magic Wallstent® Radius ⁴	6	Product Ease of Use, Speed of Use/Speed of Outcome, Benefits/Outcome/Sense of Well-being, Product Safety, Strength/Durability of Product, Product Versatility
NIR® Elite ⁴	4	Benefits/Outcome/Sense of Well-being, Product Safety, Strength/Durability of Product, Product Versatility
NIR® Monorail™ ⁴	0	NA
Bx Sonic™ ⁵	2	Product Ease of Use, Speed of Use/Speed of Outcome
Crossflex™ LC ⁵	0	NA
Velocity® ⁵	2	Product Ease of Use, Speed of Use/Speed of Outcome
S7 Zipper ⁶	3	Product Ease of Use, Speed of Use/Speed of Outcome, Benefits/Outcome/Sense of Well-being

*Steps 3 and 4 of the analysis strategy presented in Table 3.

NA = not applicable

ICD = implantable cardioverter defibrillator

References

- 1 Kenegy JW, Stein GC. Naming, labeling, and packaging of pharmaceuticals. *Am J Health-Syst Pharm* 2001;58:3033-3041.
- 2 Phillips J, Beam S, Brinker A, et al. Retrospective analysis of mortalities associated with medication errors. *Am J Health-Syst Pharm* 2001;58:1824-1829.
- 3 United States Pharmacopeial Convention, Inc. The FDA and Trademarked Names. *USP Quality Review* #68, September 1999.
- 4 Committee for Proprietary Medicinal Products. Guideline on the Acceptability of Invented Names for Human Medicinal Products Processed Through the Centralized Procedure. European Agency for the Evaluation of Medicinal Products: London, UK, 2002.
- 5 Institute for Safe Medication Practices. "Prostin": a drug name with many meanings. *Medication Safety Alert*, 09 August 2000.
- 6 Singer P. Teensy and Humongous Inc. Namebase/Brandworks 1996. Available on-line at www.medibrand.com/white1.html. Accessed 14 March 2003.
- 7 Robins R. Where do brand names come from? Decoding the enigma of pharmaceutical brand name development. *Pharmafocus*, 02 September 2002.
- 8 Interbrand Wood Healthcare Case Studies. Available on-line at www.interbrandwood.com. Accessed 20 March 2003.
- 9 Sapir E. A Study in phonetic symbolism. *J Exp Psychol* 1929;12:225-239.
- 10 Lipsky MS, Taylor CA. The opinions and experiences of family physicians regarding direct-to-consumer advertising. *J Fam Pract* 1997;45:495-499.
- 11 Aikin KJ. Direct-to-consumer advertising of prescription drugs: Patient survey results. US Food and Drug Administration Division of Marketing, Advertising and Communications: Washington DC, 19 September 2002.
- 12 Berkwits M. CAPTURE! SHOCK! EXCITE! Clinical trial acronyms and the "branding" of clinical research. *Ann Int Med* 2000;133:755-759.

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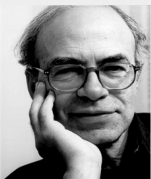
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*"Human dignity is indivisible. Young and old, weak and strong,
the human family is held together by its common dignity and
the inviolability that stems from it."*

*Dr. Cameron is responsible for the establishment of the Center for
Bioethics and Human Dignity in Deerfield, IL and the Centre for
Bioethics and Public Policy in London. He has been called the
"father of Christian bioethics" by Focus on the Family.*



Moderator: Scott Rae, Ph.D., Th.M.

Dr. Rae is Professor of Christian Ethics at Talbot School of Theology, Biola University. He has a Th.M. from Dallas Theological Seminary and a Ph.D. in social ethics from the University of Southern California. He has authored seven books in bioethics and business ethics and numerous journal articles in the field. He serves as an ethics consultant to five Southern California area hospital ethic committees. He lives in Irvine, California, married with three children.



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BIOTECHNOLOGY UPDATE: NEWS AND VIEWS

Light from the North: Canada Comprehensively Bans Human Cloning

NIGEL M. DE S. CAMERON, PHD

Though most Americans remain entirely oblivious of the fact, there is great news from Canada. After years of debate, a bill covering many aspects of reproductive technology has just been passed and awaits the formality of the royal assent. It contains many other good things too, like a ban on selling embryos and gametes and a ban on commercial surrogacy contracts. It also contains some provisions that are less good, such as the regulation of experiments on “spare” embryos from *in vitro* fertilization (this has been taking place without regulation; it would have been much better to ban it altogether).

But the cloning ban lies at the heart of the legislation, and addresses in the right way the central question confronting the human race as we face the technology of the 21st century.

This has raised a difficult issue for pro-life groups in Canada. They generally opposed the bill (C-6), although the Catholic bishops took a neutral position (they were criticized by some pro-lifers for doing that). Pro-life opposition to the bill was chiefly grounded in a desire for a comprehensive ban on using human embryos for research, and it would certainly have been better to handle that in a separate bill. But pro-lifers also critiqued the way in which the bill addressed human cloning, and suggested that it was inadequate. So, one pro-life commentator concluded that the “only” good thing in the bill is the ban on selling gametes and embryos.

That is misleading. The ban on cloning is comprehensive, forbidding both the cloning of live-born babies (so-called “reproductive” cloning) and the use of cloned embryos for research (so-called “therapeutic” cloning). The language in which it does so is at least as strong as that contained in the Weldon/Brownback bill before the US Congress. It also parallels that in the resolutions that have been considered by the United Nations General Assembly. Listen to the language of the bill:

5. (1) No person shall knowingly
 - (a) create a human clone by using any technique, or transplant a human clone into a human being or into any non-human life form or artificial device;

“human clone” means an embryo that, as a result of the manipulation of human reproductive material or an *in vitro* embryo, contains a diploid set of chromosomes obtained from a single-living or deceased-human being, foetus or embryo.

To those who have been immersed in the debates on Capitol Hill and in state capitols around the nation, the language here is strong and refreshingly honest. “Human clone” is actually *defined* as a cloned embryo. In the dishonest terms of the Hatch-Feinstein bill, “cloning” is defined as implantation. In the terrible language of the New Jersey law, “cloning” is defined as the live birth of a cloned embryo. Three cheers for the Canadians. They have joined Mexico, Germany, Norway, and a host of other countries in passing legislation that closely parallels the

Weldon/Brownback bill. In France a parallel law is close to completing its way through the parliamentary process, with support from the government, and we await its final passage.

We need to get this good news out, and to use it to show that the demand for a comprehensive cloning ban is not just coming from pro-life Republicans. It is coming from all sectors of society, from centers of conscience right across the culture, from thinking people who want to ensure that the wonders of biotechnology sustain human dignity and do not subvert it. The international community is acting, nation by nation, and we can take courage from the fact that on the biotech agenda of the 21st century these nations are ahead of us.

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The Meaning of “Human” in a Time of Chimeras

AMY MICHELLE DEBAETS, MA

One of the foundational tasks of ethics is to identify those beings which are morally relevant and why those beings have a moral relevance that may be denied to others. Within the Christian tradition, the primary locus of moral relevance has been the worth ascribed to human beings as beings made in the image of God. God has chosen humanity for a covenant and became incarnate as a human being. Some lesser moral relevance is then sometimes ascribed to other creatures as part of the creation over which human beings have been assigned the task of stewardship. As one example of contrast, some naturalistic philosophers ascribe moral relevance only to those who are sentient, rational, or meet some other standard of capacity.

Questions over the boundaries within the human community of who qualifies as fully morally relevant have periodically been debated and redefined as well, even within the Christian tradition. At times, women, blacks, Jews, and others have been denied their full moral status as human persons. The arguments for denying this moral relevance tend to center on, for one reason or another, assigning them sub-human status. Among Christians, this frequently has taken the form of claims that these persons lack the image of God, or that the persons in question had been given by God a naturally lesser status. With this sub-human status, so the logic goes, comes the necessity of servitude and a degraded condition and valuation.

The boundaries of humanity have not only been debated regarding race or gender, though, but also at the beginning and end of life. Well-meaning people continue to disagree over whether one becomes fully human at conception or at some later point. Likewise, death has been redefined from heart-lung death to whole brain death, with some arguing that still other definitions should be in place. Does a person in a persistent vegetative state remain a fully morally relevant human person, and why or why not?

The issues of human cloning and embryonic stem cell research have raised these questions to a new level. The questions are now being asked and answered as to whether a human clone is a separate person, fully human and thus worthy of full moral status, or simply the cells, and thus the property, of the person who is cloned. Even if a human clone is born and the clone is accorded full moral status, another question of personhood is looming on the horizon.

Recently, researchers in China created the first human-rabbit hybrid embryos. The embryos had predominantly human DNA infused into rabbit eggs (and included some rabbit DNA, including mitochondrial DNA). While the researchers destroyed the embryos after 14 days, it raises the question as to whether the boundaries of humanity should be reconsidered once again. No one knows what the human-rabbit chimeras would have been like had they been implanted in a uterus to develop. Perhaps they would not have developed at all: it brings us to a place where we must ask whether or not they should be considered human beings or not, and what moral status should be accorded to them.

How do we treat these beings that are created from both humans and animals? Do chimeras bear the image of God? Are they somehow a different species of their own, neither human nor animal at all?

Given the historical arguments put forth for according various groups of people sub-human status, I would be wary of immediately assigning chimeras to such a sub-human status. Perhaps chimeras would be grossly deformed, or would somehow lack “normal” human capacities, but they are created from human beings by human beings, and we should probably accord them the benefit of the doubt in treating them as human beings. Even if it is discovered at some point later that they are not truly human, we should err on the side of according them the dignity, worth, and rights that we would assign to human beings based on their human origin.

It would be better, of course, if such chimeras were not created in the first place. Only an international, comprehensive ban on human cloning and related experimentation will prevent the further development of human-animal hybrids. Since such a ban is not in effect yet, the human community may need to decide whether or not to accept human-animal hybrids as fellow-members of this community. Let us decide well.

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Book Review: Pandora’s Baby: How the First Test Tube Babies Sparked the Reproductive Revolution

Robin Marantz Henig

Boston: Houghton Mifflin, 2004

ISBN 0-618-22415-7, 326 PP., HARDCOVER, \$25.00

Review by Amy Michelle DeBaets

In *Pandora’s Baby*, Robin Marantz Henig discusses the history of in vitro fertilization and the debate over assisted reproductive technologies. She tells an interesting story of the scientists and families who pioneered IVF and related techniques, and she considers the relationship between the debates over IVF in the 1970s as it relates to the current debates over human cloning.

While the historical account of the development and controversies over IVF are fascinating, Henig’s understanding of the ethical matters surrounding IVF are minimal. She briefly considers, and then dismisses, arguments for the personhood and moral value of human embryos and roots all of the ethical discussions after that on “slippery slope arguments,” in which one technology which may or may not be unethical in and of itself, leads to later, clearly unethical technologies. She fails to consider any other arguments against IVF, even dismissing the current research on the higher rate of birth defects among children born through IVF and the high rate of multiple births and high risk pregnancies associated with IVF and fertility clinics’ unregulated desires for high “success rates.”

Henig documents the research that led to the development of IVF techniques, including unethical and dangerous research in which women routinely had their eggs removed without their consent during ovarian surgery and informed consent for research was ignored entirely. She recounts the story of one of the first attempts at IVF that resulted in a lawsuit against those who halted it; in this attempt, eggs were mixed with sperm, blood, uterine tissue, and other matter in an unsanitary concoction that was being prepared for implantation into a woman’s body.

Henig’s account in *Pandora’s Baby* is at its best in discussing the sociology by which new reproductive and other technologies are accepted into society. She understands the process as being one in which new technologies are first introduced into society; they are met at first with great repulsion by ethicists and the general public. Once children are born using the technology,

or the technology is seen as being in some way beneficial, despite any ethical concerns, it becomes rapidly accepted into the public life. This process occurs without any real public discussion or debate over the ethicality of the technology, and demand for the technology is driven primarily by consumer desires. This sociological understanding should give great pause to ethicists and others concerned about the acceptance of cloning and other similar technologies into public life, as the public discussion needed to determine whether or not humanity should pursue these techniques is bypassed and handed over instead to the market.

Pandora's Baby ends by relating the history of IVF to human cloning. Henig states that ethicists used to argue against IVF by saying that it would lead to human cloning. The same slippery slope arguments are now used to try to prohibit human cloning, including both reproductive and non-reproductive/therapeutic cloning. She was right in saying that IVF would eventually lead down the path to cloning, as the human community now finds itself facing the issue of whether or not to allow this method of human production. She argues that just as IVF was eventually accepted by most of the public, so cloning should and will likely also be accepted as a way to provide replacement parts for people and produce children for infertile people. She says, in a passage on the early experimentation with IVF, that the scientists involved were "driven by a hubris blind to its own awful consequences." While Henig advocates for human cloning, her story should really be used as a case study leading to a prohibition of cloning.

In the News

First Human Cloned Embryos Developed

The first human cloned embryos have been created in South Korea, raising issues of the need for a ban on human cloning in the United States and internationally. Korea had enacted a law to prohibit human cloning for reproductive purposes only, so the cloning was legal at the time it happened. Some ethicists around the world favor a partial ban on human cloning that would allow research such as that in Korea to continue, though even they admit that it would be nearly impossible to prevent rogue scientists from implanting a cloned embryo and allowing it to develop. Under such a law, aborting the developing clone would be the only legal option, though forced abortion would be considered unethical by almost anyone.

<http://www.washingtonpost.com/wp-dyn/articles/A34380-2004Feb11.html>

<http://cbhd.org/media/pr/2004-02-12.htm>

<http://www.iht.com/articles/129340.html>

<http://www.washingtonpost.com/wp-dyn/articles/A41217-2004Feb13.html>

<http://www.washingtonpost.com/wp-dyn/articles/A42827-2004Feb14.html>

Top Muslim Scholars Discuss Ethics of Stem Cells, Cloning

Muslim scholars have entered the debate over the use of embryonic stem cells and human cloning. Islamic theologians and scientists from the Fiqh Academy concluded after recent discussions that research using stem cells from adults, children, umbilical cords, and embryos left over from IVF were acceptable, while research involving stem cells obtained from aborted fetuses, as well as all forms of human cloning, were unacceptable under Islamic law. This decision paves the way for Islamic nations to become actively involved in the move to ban human cloning on an international level.

<http://www.fiqhacademy.org.sa/>

<http://www.islam-online.net/English/Science/2004/02/article01.shtml>

Nanotechnology Update

Scientists are uncovering possible risks to human health and safety involving the use of nanosize particles, as the particles are small enough to penetrate the membranes of the body, including the brain. Other questions are now being researched as to what impact nanoparticles will have on the environment, issues of privacy and security, and potential military applications of nanoscale machines.

<http://www.planetark.com/avantgo/dailynewsstory.cfm?newsid=23369>

http://www.the-scientist.com/yr2004/feb/opinion_040216.html

Pig-Human Chimeras Developed, Contain Virus

Fetal pigs who had human stem cells injected into them were found to have, as adults, pig cells, human cells, and cells that had fused from both pig and human origins, according to the Federation of American Societies of Experimental Biology Journal. These chimera cells were also found to contain a virus that is common among pigs but to which normal human cells are impervious, thus raising issues for transplantation of animal organs and cells into human beings.

<http://www.newscientist.com/news/news.jsp?id=ns99994558>

New Ways to Repair Damaged Heart Cells Using Adult, Cord Blood Stem Cells

New research using stem cells derived from umbilical cord blood has shown to repair damaged heart tissue in children. In adults, stem cells from the patients' own blood has been shown to repair heart tissue, though the mechanism by which this works is still unknown, and some adult patients have developed some abnormal growths when treated with the stem cells.

<http://news.bbc.co.uk/2/hi/americas/3495605.stm>

<http://www.telegraph.co.uk/news/main.jhtml?xml=/news/2004/02/17/wcell17.xml&sSheet=/news/2004/02/17/ixworld.html>

http://www.usaweekend.com/04_issues/040307/040307aging.html

<http://www.nature.com/nsu/040301/040301-13.html>

Adult Stem Cell Advances

Recent animal research using stem cells derived from adults instead of embryos has been making significant advances toward treatment for a variety of diseases and conditions, including multiple sclerosis, osteoarthritis, diabetes, and baldness. The first publicly accessible database for human blood and bone marrow stem cells is now available online from the National Center for Biotechnology Information.

<http://www.ncbi.nih.gov/mhc>

<http://www.nature.com/cgi-taf/DynaPage.taf?file=/nm/journal/v10/n1/abs/nm974.html>

<http://www.planetark.com/dailynewsstory.cfm/newsid/23618/story.htm>

http://www.hematology.org/news/press/press_120903_5.cfm?pagemode=print

<http://www.washingtonpost.com/wp-dyn/articles/A57922-2004Mar14.html>

Drug May Allow Adult Cells to Become Stem Cells

A new synthetic drug called reversine may be the key to allowing adult cells to be “reprogrammed” and act as stem cells. The effort to “dedifferentiate” adult cells would potentially alleviate the controversy over the use of embryonic stem cells, making them unnecessary, as the reprogrammed cells would be fully useful as stem cells and fully compatible with the patient receiving them.

<http://www.nature.com/nsu/040126/040126-14.html>

<http://pubs.acs.org/cgi-bin/sample.cgi/jacsat/2004/126/i02/pdf/ja037390k.pdf>

President’s Council on Bioethics Latest Report: “Being Human”; Call for Ban on Radical Reproductive Procedures; Two Removed from Council

A new report from the President’s Council on Bioethics that is near completion calls for a complete ban on radical procedures, such as the creation of human-animal hybrids, as well as new regulations of the currently unregulated fertility industry. The report also recommends a ban on the implantation of embryos into women’s uteruses for any purpose other than producing a live child, thereby prohibiting “fetus farming” for human parts. Another new publication from the Council is a group of readings on important bioethical issues from a variety of sources, including classical literature and modern writings.

<http://www.bioethics.gov/bookshelf/>

<http://www.washingtonpost.com/wp-dyn/articles/A21071-2004Jan15.html>

<http://bioethicsprint.bioethics.gov/background/bppinterim.html>

<http://www.washingtonpost.com/wp-dyn/articles/A13606-2004Feb27.html>

<http://www.washingtonpost.com/wp-dyn/articles/A24742-2004Mar2.html>

Cloning Policy Update

Canada has passed a comprehensive ban on human cloning, thereby raising the level of discussion over the need for such a ban in the United States as well. Chinese officials have issued guidelines prohibiting human cloning while continuing to allow embryonic stem cell research. The funding of embryonic stem cell research and human cloning has become a ballot issue in deficit-ridden California. New Jersey is now promoting and funding research using embryonic cells and non-reproductive human cloning. Meanwhile, South Dakota has passed a comprehensive ban on human cloning, including cloning for research purposes.

<http://www.abc.net.au/news/newsitems/s1064416.htm>

<http://www.biomedcentral.com/news/20040316/03>

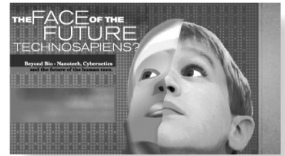
http://english.peopledaily.com.cn/200401/15/eng20040115_132682.shtml

<http://sfgate.com/cgi-bin/article.cgi?file=/chronicle/archive/2004/02/01/INGQ64J39F1.DTL>

<http://www.biomedcentral.com/news/20040108/02>

E&M

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