

IS ALWAYS ON, ALWAYS GOOD?

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A few weeks ago I took some friends from the U.S. to see Kilmainham Gaol in Dublin, Ireland. The sight-seeing tour of the jail became surprisingly emotional for me as we passed row upon row of cold, dark cells. Many had once held men and women who gave their lives to win the freedoms we enjoy today.

Entering the newer East Wing was a welcome contrast, with its bright and spacious oval chamber. Opened in 1864 by prison reformers, the three stories of cells, iron catwalks, and a large central staircase have made this a popular backdrop for film makers (e.g. *The Italian Job*, *In the Name of the Father*). We could see into many cells at once and were told the design allowed a few officers to monitor many prisoners.

Out of curiosity, I researched the jail further and was surprised to learn that its design was influenced by the English philosopher Jeremy Bentham. Better known for his theory of utilitarianism, Bentham was also a social reformer with a particular interest in prisons. He developed a design called the Panopticon. Though he never persuaded the British government to build one, elements of his design were incorporated into some prisons, including Kilmainham.

A Panopticon is a circular building with numerous cells around the perimeter opening into a central chamber. In the middle is an “inspection house,” from which a guard observes the prisoners, but the prisoners cannot see him. Bentham’s design included “speaking tubes” to allow the guards to listen to everything going on in each cell. These, he claimed, would be particularly useful when the design was applied to factories, schools, and hospitals. Staff could monitor patients to ensure they complied with instructions, while patients’ complaints would be heard instantly and receive immediate attention. Bentham would surely be impressed by the constant monitoring available today with CCTV, sensors, smart-homes, and other wireless capabilities.

Soon afterwards, I encountered Bentham’s panopticism again in a different context. A friend pointed me to a 14-minute science fiction short movie *Plurality*¹ mentioned in the October 10, 2012 *Le Monde*, one of France’s two leading newspapers. Set in New York in 2023, the “Bentham Grid” is keeping an eye on

everyone. The grid is described as a “technological marvel.” It takes everything unique to you (your social security number, passport number, bank account numbers) and links it to your DNA in a central computer system. Scanners are placed everywhere, such that a touch of your finger leaves enough DNA to identify you. Keys, ID cards, money, and crime are all relics of the past. The narrator calls the Bentham Grid “the ultimate social network.”

We are at a relatively early stage in developing digital social networks. With Facebook, smart phones, and GPS, we can find what we are looking for and track our friends with comparative ease. Interconnectivity is developing to the point at which, when we are sent electronic communications, algorithms identify what we might like on the basis of the included content. Satellite and CCTV offer some degree of surveillance, but not to the extent provided by the Bentham Grid. The narrator tells us that in 2023 “you can’t do anything in New York City without the Grid knowing who you are and where you are.” Merely science fiction? Read on.

On one level, Facebook and its many clones are technological means of connecting and communicating. But underlying them is a philosophy that requires careful analysis and critique. Bentham’s Panopticon was not just architecture, but design infused with a philosophy about surveillance and human behavior. A key dimension of his design was that the inmates were unable either to communicate with one another or to know whether they were being observed. Bentham thought this would leave them feeling uncertain and insecure. The result would be “a new mode of obtaining power of mind over mind, in a quantity hitherto without example.”² Bentham’s theory was that knowing someone might be watching you would lead you to behave properly.

The digital architecture of social networking is built on a similar philosophy to Bentham’s of surveillance and privacy. Mark Zuckerberg, founder and CEO of Facebook, declared in 2010 that privacy is a “social norm” whose time has come and gone.³ He is not alone. A. J. Keen has documented a notion of “the death of privacy” among the major players behind Google, Sun Microsystems, LinkedIn, and other social networking sites: “Individual privacy is a relic, they say. It has a past, but



from the director's desk

BY PAIGE COMSTOCK CUNNINGHAM, JD, MA
EXECUTIVE DIRECTOR

I am in a thicket of trees, and I cannot see the forest. For the past week, I have been wrestling with a theological problem, a question that eludes easy answers. It was triggered by a conversation at CBHD's recent consultation on synthetic gametes. This relates to procedures such as transferring the nuclear DNA from an egg with impaired mitochondrial DNA into an enucleated healthy egg, then fertilizing it. The resulting embryo has three parents, two female and one male.¹ After a day of exploring the "Ethics and Theology of Synthetic Gametes," we still lacked an understanding of the theological significance of gametes.

The concept is nested inside, or alongside, a cluster of more familiar theological concerns: the meaning of marriage, children as gift, human sexuality, and *imago Dei*. But just what *are* egg and sperm? Are they tissue like any other bodily tissue that can be freely donated (or sold)? Experience leads us to conclude otherwise, but how should we think about them theologically?

This is the kind of ethical aerobics that is at the heart of what CBHD does. We tackle the things that are not easy, and try to bring clarity to the complex.

This exercise is also at the heart of theology. Theological reflection engages contemporary culture and is informed by advances in learning in other disciplines in conversation with the timeless truths of Scripture. Until the 20th century, there was no need to consider the meaning of gametes extracted from the human body; the technology simply was not available. But, culture changed with the advent of artificial insemination, IVF, and other techniques. Meaningful theological reflection trails in the wake of reproductive upheaval.

My investigation has meandered from Google to Google Scholar to sexual ethics texts, Roman Catholic moral theologians, and Protestant theologians like Helmut Thielicke. I have had in-person and email conversations. From these, I'm going to share some preliminary thoughts, a cobbled-together structure to which I nail the sign, "Still under construction." Perhaps someone wiser will remodel or reinforce the work I am beginning here.

First, no commodification. We are familiar with the general principle rejecting commodification of the human body, including parts such as kidneys and wombs. Gametes seem to fit into this category, ergo, no selling of egg and sperm.

Second, do no harm. We do not sanction nontherapeutic procedures that impose a significant risk of harm or death of a human being. This protects embryos, but does not directly address the upstream, independent status of the gametes. The gametes are not a person that might be harmed, but in the process of donating eggs, a woman may be harmed by, for example, ovarian hyperstimulation syndrome.

Third, are gametes unique? The purpose of gamete donation seems to differ from donations of other body tissues. One may altruistically donate blood, tissue, or an organ to save the life or minimize the serious disease of another person. I would argue that gametes are different from blood, corneas, or kidneys. In one case, an existing person whose identity is certain is in need of life-saving repair. In the other, egg and sperm are desired for the purpose of creating an embryonic person whose identity is undetermined. That person is not created for their own good, but for the purposes of medical research or for the purposes of people other than him or herself. No actual person benefits medically from the donation (I am setting aside the benefit to the potential embryo of removing defective mitochondrial DNA and the potential emotional and psychological benefits to the intended parents if the three-parent embryo is adopted as an assisted reproductive technology.)

There is another difference between donating egg or sperm and donating blood or corneas. The recipient of blood or corneas does not become genetically related to the donor. My DNA can be detected in the recipient's blood only temporarily;² a new person is not thereby created, and the changed DNA is

The Center for Bioethics & Human Dignity (CBHD) is a Christian bioethics research center at Trinity International University.

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not passed along to the recipient's descendants. Furthermore, a recipient of traditional organ donation or bone marrow would not be considered to be the donor's offspring even though they might have some shared DNA. By contrast, sperm and egg donors are irrevocably genetically linked to any offspring. Perhaps the donors will be curious about their identity some day. The yearning may be even stronger for the donor's parents, who may view the recipient's children as their own grandchildren.³

If egg and sperm are indistinguishable from other bodily tissues, then guarantees of donor anonymity would be unnecessary. Concerns about potential contact from offspring point to the reality of gametes: they identify and connect us in singular ways with the recipients—or results—of our donation.

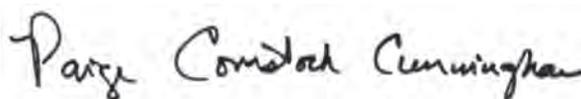
Gametes represent identification backward with the generations that preceded us, and identification forward with “generations yet unborn.” A person's egg or sperm, after all, are the result of countless generations of unique pairings of egg and sperm. Biological genealogies trace the unique trajectory of each person's genetic inheritance, which recent technologies have enabled us to trace with greater and sometimes surprising precision.

Our genetic identity is unique. Even identical twins have different DNA. Each of us, image bearers all, is a one-of-a-kind creation. And it is perhaps here that the most profitable theological reflection might be done. The person is more than the physical body, but the physical body is inextricably part of our humanity. Within the body, some organs are more closely “an expression of the unrepeatable identity of the person.”⁴ In the case of gametes or gonads, the expression is not merely symbolic, but is functional. That is what gametes do. While other cell types may carry our genetic identity, it is the purpose of gametes to pass this genetic identity along. The 23 chromosomes of a given gamete identify the offspring as the child of that parent. (Of course, adoption is a separate case, and poses counterarguments to my points. But perhaps our theology of

adoption is more robust than our theology of gametes; we do not need to mute adoption, but to emphasize gametes.)

So, I am left with the theological puzzle whether gametes are uniquely connected with personal identity in such a way that their generative potential may rightly be expressed only within the marital relationship. In an ontologically significant way, do they represent, or re-present, the parent from whom they are generated? Some theological traditions within the Christian church certainly affirm so. Or, can they be severed from the person in the same way as blood or corneas? If so, we would properly view them as something that morally may be donated, a radically different idea. Or, is there no other theologically-enriched framework within which we can or should understand the nature and purpose of gametes?

My preliminary assessment is that the burden of persuasion is carried by the first conclusion. But, I am wondering if there are not other ways that might better get at the difference, so I will keep digging. Do any theologians, armchair or professional, care to weigh in? We could use some help in “seeing the forest.”



- 1 Recent research raises the possibility of creating an embryo with a single male or female parent, as Dónal O'Mathúna notes in his discussion of the consultation in this issue of *Dignitas*.
- 2 Michelle N. Gon. “What happens to the donor's DNA in a blood transfusion?” *Scientific American*. January 23, 2009. <http://www.scientificamerican.com/article.cfm?id=donor-blood-transfusion> [sic]. A bone marrow donor's DNA remains in the recipient's blood, but does not affect gametes and therefore is not passed along to the recipient's offspring.
- 3 Alison Motluk. “My scattered grandchildren.” *The Globe and Mail*. Aug. 23, 2012. <http://www.theglobeandmail.com/life/family-and-relationships/my-scattered-grandchildren/article1286201/>.
- 4 Pontifical Academy for Life, Prospects for Xenotransplantation: Scientific Aspects and Ethical Considerations (September 26, 2001) (n. 11). http://www.vatican.va/roman_curia/pontifical_academies/acdlife/documents/rc_pa_acdlife_doc_20010926_xenotrapianti_en.html#Bioethical%20Issues.

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no future. For many of these supposed visionaries, the death of privacy is no different, in principle, from the retirement of the horse and cart or the disappearance of gaslights from city streets.”⁴

“Zuckerberg’s Law” states that each year people will share twice as much private information as they did the previous year. Scott McNealy, co-founder of Sun Microsystems, was reported as saying, “you have zero privacy anyway—get over it.”⁵ Constant surveillance, as Bentham likewise thought, will make the world a better place. When Eric Schmidt was Google’s CEO, he said that those concerned about online privacy were the unethical ones. “If you have something that you don’t want anyone to know, maybe you shouldn’t be doing it in the first place.”⁶ But is privacy just about keeping things from others? Is there something fundamentally important about privacy, something about human dignity that might be lost without it?

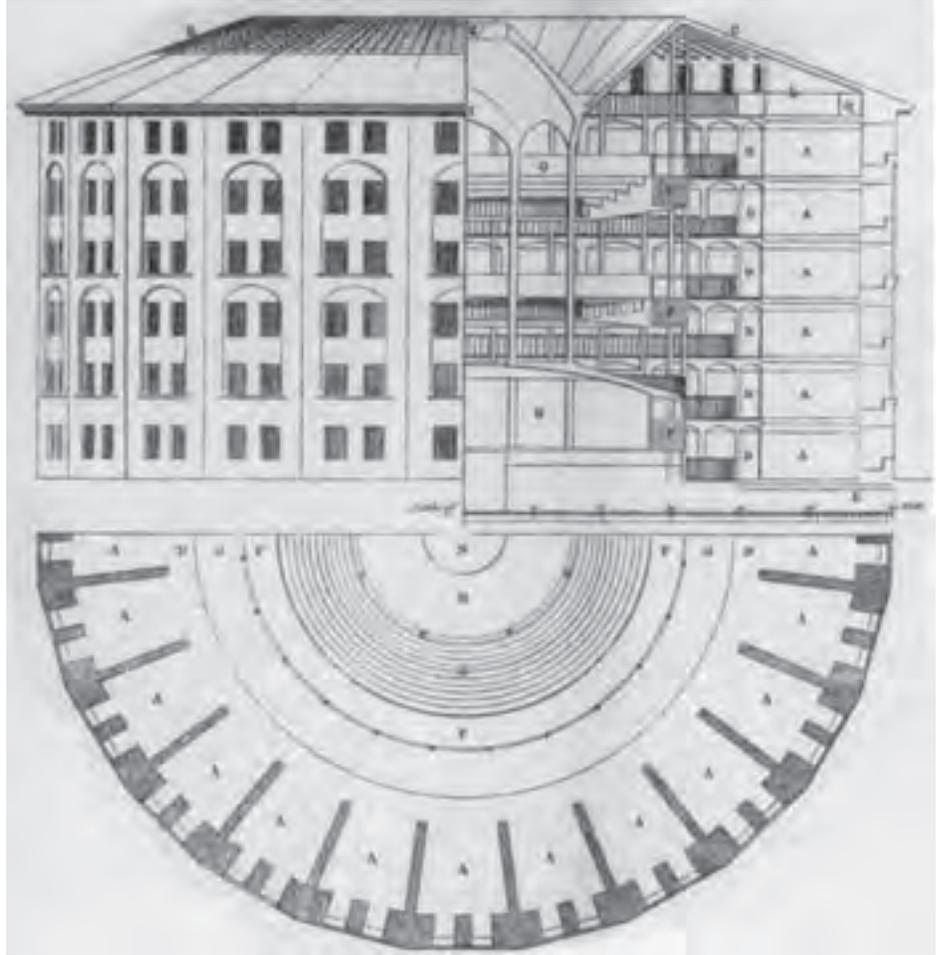
Returning to *Plurality* in 2023, a reporter puts that question to the fictional Mayor of New York: “Is the right to privacy effectively dead in New York City?” The Mayor replies, as many today might, “I think anyone, including my fellow law-abiding New Yorkers, would happily sacrifice a little bit of privacy for that kind of personal safety.” Today, many people are willing to give up their privacy for much less—sometimes as little as convenient shopping. Google’s Schmidt said in 2010, “We know where you are. We know where you’ve been. We can more or less know what you’re thinking about.”⁷

1984 comes to mind, as it does in *Plurality*. In front of a poster declaring “Beware Big Brother Bentham,” the action in *Plurality* starts when an agent is told a “plurality” has been spotted. A plurality is a person who comes back from the future to warn people about where surveillance is leading society. The Grid finds the plurality; when the agent, Inspector Foucault, identifies her, she declares, “You’ve replaced freedom with the illusion of safety. But we’re not safe, Foucault; neither are you.”

Michel Foucault, here the French philosopher, would agree. He claimed that Bentham’s panopticism received little attention because it was seen as “not much more than a bizarre little utopia, a perverse dream.”⁸ Foucault believed it had more

profound import. As individual rights and freedoms spread with the Enlightenment, the elite needed to maintain control. The heavy hand of violent power would no longer work, so instead the Panopticon was conceived as “a subtle, calculated technology of subjection.”⁹ To ensure good behavior, whether in jails, schools, or hospitals, panopticism separates people even while they are together. The individual “is seen, but he does not see; he is the object of information, never a subject of communication.”¹⁰ The result is “a power that insidiously objectifies those on whom it is applied.”¹¹

The dehumanizing effect of constant surveillance and loss



Plan of the Panopticon, 1843 (originally 1791), *The Works of Jeremy Bentham* vol. IV, 172-3. This image is used courtesy of wikipedia.

of privacy in 1984 was clearly visible because of its totalitarian enforcement. Today’s loss of privacy is more subtle, being gradually accepted in the name of security, comfort, or convenience. But how much of this is an illusion? As more people disclose more of their privacy, what else is being given up? As homes and communities become ‘smarter,’ with sensors and cameras monitoring everything, are we compromising our dignity?

One concern is the link between privacy and intimacy and

its impact on relationships. In declaring Zuckerberg as 2010 Person of the Year, *Time* magazine noted his plan to eliminate loneliness. “You’ll be working and living inside a network of people, and you’ll never have to be alone again. The Internet, and the whole world, will feel more like a family, or a college dorm, or an office where your co-workers are also your best friends.”¹²

Research is showing this to be an illusion. Sherry Turkle, a social scientist at MIT, raises concerns about the social impact of social networking. Her research finds that “we have sacrificed conversation for mere connection.”¹³ Her latest book, *Alone Together*, documents diminished relationships as we constantly connect online. Social networking is based on a limited view of human nature, one that neglects our embodiedness, the importance of time spent with people, and our spiritual nature.

Another concern is that incessant tweeting and blogging is diminishing the rigor of our communication. Bentham wanted control without communication. Foucault observed that panopticism provided information without communication. Turkle’s research notes a trend towards simpler thinking that avoids probing questions that require deeper reflection. Aleksandr Solzhenitsyn spotted this 35 years ago. In his analysis of Western culture, which he wrote after being exiled to the West, he notes that “Hastiness and superficiality . . . are the psychic diseases of the twentieth century. . . . In-depth analysis of a problem is anathema to the press.”¹⁴ Now we have technology to do this all the time. In place of careful thinking, we have ‘always on’ chit-chat and sharing of everything. Solzhenitsyn lamented the way privacy was shamelessly intruded upon under the slogan “Everyone is entitled to know everything.” Instead, he upheld the “right of people not to know, not to have their divine souls stuffed with gossip, nonsense, vain talk.” And that was before the Internet!

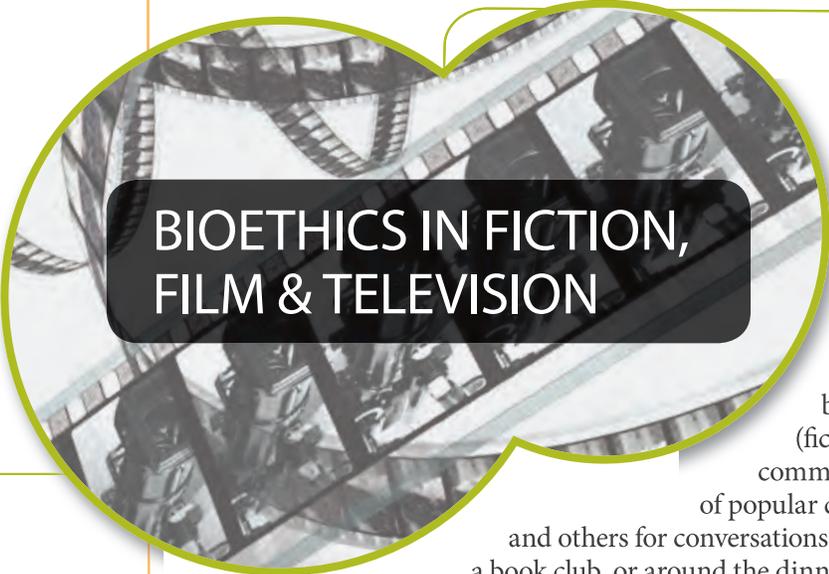
As we lose privacy, along with the ability to unplug, we lose appreciation for solitude. Why would an always-on system of faceless friends and twittering sound-bytes seem more attractive than walking in the woods or staring at the stars? We have to learn to be alone, to quiet our minds so we can think and reflect. If we cannot be content when alone, we will struggle to connect with God. We need privacy to deepen our relationship with God, to pray, and to wrestle through things with him. If we need to be constantly plugged in, we will be distracted to the point of superficiality. Seeing this trend, Keen wants to defend “the mystery and secrecy of individual existence.” He is searching to understand “why, as human beings, privacy and solitude makes us happy.”¹⁵ Knowing we are made in the image of God, who does not make public all his thoughts (1 Corinthians 2:11), we need to engage with such deep, searching questions. The answers have a very practical bearing on how we treat others.

Bentham promoted his Panopticon as economical. Foucault

believed constant surveillance allows “the exercise of power at the lowest possible cost (economically, by the low expenditure it involves; politically, by its discretion, its low exteriorization, its relative invisibility, the little resistance it arouses).”¹⁶ Bentham wanted his design to be used in hospitals, and we indeed see increased surveillance in healthcare today. For now, it is CCTV, sensors, and smart-homes. Soon it will be robots as companions, such as envisioned by the Robot Companions for Citizens project.¹⁷ Turkle has studied the impact of robots on humans and believes that whether robots are viewed as acceptable companions for others is one of the biggest questions facing us about our humanity. If virtual friendship is good enough, are robots good enough for people in residential homes? Is it enough that we just think there might be someone in there watching us? Or is this another illusion? Will that give us even more reasons to neglect human contact and conversation?

Friendship is being redefined by Facebook, knowledge by Google, and privacy by corporations. These changes have dramatic implications for what we think about human dignity. Those concerned about Christian bioethics need to engage with these issues. There are no easy answers, but careful critical consideration is vital.

- 1 “Plurality,” YouTube video, 14:15, posted by “Dennis Liu,” October 1, 2012, <http://www.youtube.com/watch?v=lzryBRPwsog>.
- 2 Jeremy Bentham, *The Panopticon Writings*, ed. Miran Bozovic (London: Verso, 1995), 29-95, <http://cartome.org/panopticon2.htm>.
- 3 Bobbie Johnson, “Privacy No Longer a Social Norm, Says Facebook Founder,” *The Guardian*, January 10, 2010, <http://www.guardian.co.uk/technology/2010/jan/11/facebook-privacy>.
- 4 A. J. Keen, *Digital Vertigo* (New York: St. Martin’s Press, 2012), 57.
- 5 *Ibid.*, 58.
- 6 Rob Pegoraro, “Google’s Eric Schmidt Steps Down, Depriving Web of Future Quotes,” *Washington Post*, January 21, 2011, <http://www.washingtonpost.com/wp-dyn/content/article/2011/01/20/AR2011012006128.html>.
- 7 *Ibid.*
- 8 Michel Foucault, *Discipline and Punish: The Birth of the Prison* (London: Penguin, 1977), 224-5.
- 9 *Ibid.*, 221.
- 10 *Ibid.*, 200.
- 11 *Ibid.*, 220.
- 12 Lev Grossman, “Person of the Year 2010: Mark Zuckerberg” *Time*, December 15, 2010, http://www.time.com/time/specials/packages/article/0,28804,2036683_2037183_2037185-1,00.html.
- 13 Sherry Turkle, “The Flight from Conversation,” *New York Times*, April 21, 2012, <http://www.nytimes.com/2012/04/22/opinion/sunday/the-flight-from-conversation.html>.
- 14 Aleksandr I. Solzhenitsyn, “Commencement Address Delivered At Harvard University” *A World Split Apart* (New York: Harper and Row, 1978), http://www.forerunner.com/forerunner/X0113_Solzhenitsyns_Harvar.html.
- 15 Keen, *Digital Vertigo*, 18.
- 16 Foucault, *Discipline and Punish*, 218.
- 17 <http://www.robotcompanions.eu/>.



**BIOETHICS IN FICTION,
FILM & TELEVISION**

The promise and perils of advances in technology, science, and medicine have long been fodder for creative literary and cinematic reflection. Consequently, a variety of resources exist exploring the realm of medical humanities and providing in-depth analysis of a given cultural medium or particular artifact. This column seeks to offer a more expansive listing of contemporary expressions of bioethical issues in the popular media (fiction, film, and television)—with minimal commentary—to encompass a wider spectrum of popular culture. It will be of value to educators

and others for conversations in the classroom, over a cup of coffee, at a book club, or around the dinner table. Readers are cautioned that these resources represent a wide spectrum of genres and content, and thus may not be appropriate for all audiences. For more comprehensive databases of the various cultural media, please visit our website at cbhd.org/resources/reviews. If you have a suggestion for us to include in the future, send us a note at msleasman@cbhd.org.

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**BIO-
FICTION**

T. C. McCarthy, *the Subterrene War Series* (Orbit Books)

- Germline (2011)
- Exogene (2012)
- Chimera (2012)

Artificial Intelligence, Genetic Engineering, Human-Computer Interface, Human Enhancement/Remaking Humanity, Neuroenhancement, Personhood.

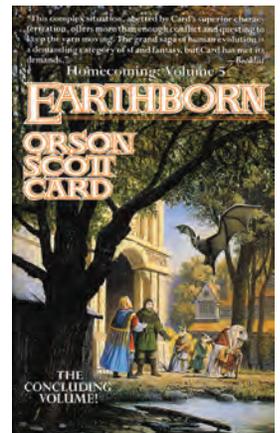
Graphic futuristic wartime trilogy. Global super-powers have exhausted conventional and nuclear warfare options in pursuit of rare metals and turned to an escalating arms race of human enhancement and re-engineering. Each volume of the trilogy is told from a different perspective. *Germline* begins the Series following an embedded military reporter who is the first to be permitted on the frontlines, where he encounters “genetics” (re-engineered female soldiers) and struggles to come to terms with their “personhood.” *Exogene* picks up the narrative a few years later from the perspective of a female “genetic” grappling with her nature and purpose, while at the same time encountering evidence of further attempts to develop the ultimate soldier. *Chimera*, the conclusion of the trilogy, resumes the storyline some years later with a human soldier wrestling with the need to embrace “genetics” as they together face new generations of even more radically remade enemies.

Orson Scott Card, the Homecoming Saga Series (Tor Books)

- The Memory of Earth (1992)
- The Call of Earth (1992)
- The Ships of Earth (1994)
- Earthfall (1995)
- Earthborn (1995)

Artificial Intelligence, Genetic Engineering, Human Enhancement, Neuroenhancement, Personhood.

This science fiction series picks up the narrative of the exiled human race 40 million years after its departure from a devastated planet earth. To prevent a recurrence, humans were enhanced to allow the subtle guidance of an artificial intelligence to protect them from developing advanced technologies that could again threaten destruction. The series follows their return to a revived Earth, where they encounter other sentient creatures that have developed during the human exile.



BIOETHICS AT THE BOX OFFICE

A Little Bit of Heaven (2011, PG-13 for sexual content, including crude references, and language). End of Life, Physician-Patient Relationship



The Descendants (2011, R for language including some sexual references). End of Life, Withdrawing Treatment.



Cloud Atlas (2012, R for violence, sexuality/nudity, and some drug use). Cloning, Personhood.



Rise of the Planet of the Apes (2011, PG-13 for intense and frightening sequences of action and violence). Genetic Engineering, Human Enhancement, Research ethics.

PRIMETIME BIOETHICS

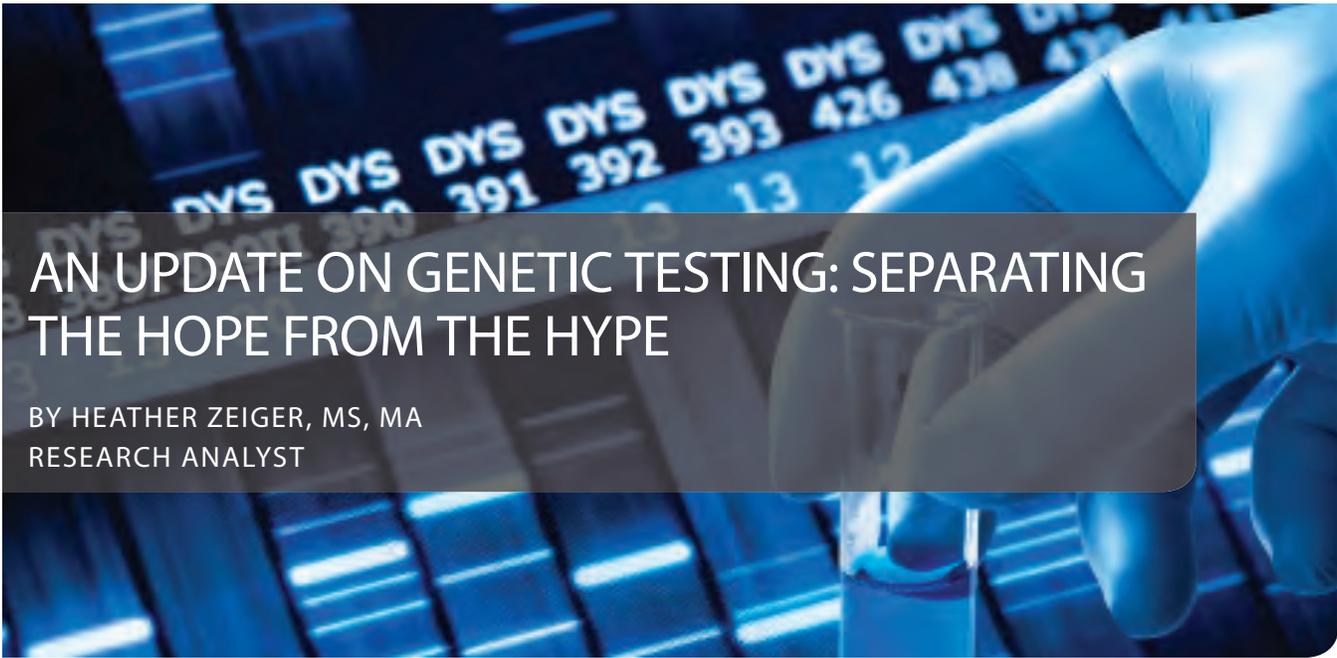
Better Off Ted (2009-2010). Biotechnology, Emerging Technology, Human Subjects Research, Research Ethics. Comedy about a multinational corporation engaged in cutting-edge, and often over the edge, research.

Caprica (2009-2010). Artificial Intelligence, Cognitive Uploading, Cyborgs, Human-Computer Interface, Personhood, Robotics. This prequel to *Battlestar Galactica* sets the stage 50 years before the latter, showing how a startling advance in artificial intelligence sets in motion a series of unintended consequences leading to the emergence of the Cylons and their subsequent wars with humans.



The New Normal (2012). Reproductive Ethics. This new series follows the life of a surrogate carrying a child for a gay couple.





AN UPDATE ON GENETIC TESTING: SEPARATING THE HOPE FROM THE HYPE

BY HEATHER ZEIGER, MS, MA
RESEARCH ANALYST

The Human Genome Project was an epic race to sequence the entire human genome, a feat that took almost thirteen years to complete, in 2003. Now genome sequencing is faster, cheaper, and more accessible. Doctors can request that a patient's genome be sequenced to help determine whether symptoms are due to a genetic disease. Or, for those who prefer the at-home version, for several hundred dollars and a vial of saliva, an online company will sequence portions of your genome and determine your propensity for more than 200 traits and health risks. It seems as though the Human Genome Project is finally paying off and the idea of genetically-tailored medicine is right around the corner.

Some hope such developments may lead to the kind of drive-through genome sequencing seen in the movie *GATTACA*, in which a person's genetic code can reveal everything from male pattern baldness, to heart disease, to a person's projected death date. However, the possibility of technology like this also prompts fears that your genetic information could fall into the wrong hands, or that knowing too much about your own future could negatively impact quality of life. Could insurance companies charge more based on the presence of certain genetic variants? Could employers choose whether to hire (or fire) someone based on their genetics? And, perhaps most unsettling, could genome sequencing eventually predict when and how a person will die?¹

One could multiply such rhetorical questions, but it is worth considering whether such concerns are merited or whether genetic testing is little more than a technologically advanced version of palm reading. Let's separate the science from the hype.

First, there are indeed genetic markers for certain diseases. Take Huntington's disease, for example. A person with Huntington's has an inordinate number of a particular

trinucleotide repeated sequence on chromosome 4. These sequences have been studied extensively, and now genetic tests can determine if an individual will develop Huntington's later in life. However, Huntington's is the exception when it comes to the relationship between genetic markers and diseases. In most cases, if someone has a particular genetic marker for a disease, it does not follow that she will inevitably develop the disease. Genes must be expressed, and expression depends on a number of factors, including epigenetic factors that have nothing to do with one's sequence of A's, T's, G's, or C's.² Identical twin studies have shown that even when two individuals begin life with the same genetic sequence, epigenetic factors and mutations that occur throughout life mean gene expression may be different for each individual.³

Second, genetic tests are based on a comparison to a norm, which is often based on relatively few genetic sequences. In reality, most people have some mutations or rare variants within their genetic code, and some rare variants are more common in certain ethnic groups or populations than others, making individual genomes less similar than was once thought. An article in *The Scientist* points out the trouble with current genetic sequencing:

Indeed, many of the studies that were done over the past decade to identify and measure the effects of genetic change were carried out using tools that were created with the assumption that genetic differences are rare. The most common tools are all based on a single human reference genome sequence that was put together nearly 10 years ago.⁴

Comparing genetic sequences to such a limited number of references causes minor variations to yield inconclusive or misleading results. For genetic tests to provide helpful information, they should be compared to a large number of reference sequences, with relevant variations taken into account.

Given these considerations, genetic testing is usually not very effective in predicting the future, but it can provide some helpful information for the present. Genetic sequencing can indicate if someone has a higher probability of getting certain diseases, particularly those diseases that have been well-studied. But probability does not equal inevitability. Risk probabilities ascertained through genetic testing may motivate some people to make healthy lifestyle decisions, but risk for some diseases may not be affected by lifestyle choice. For instance, is it beneficial to learn one might have a propensity for that kind of disease, or will this lead primarily to fruitless (and often unnecessary) worry? Alternatively, genetic sequencing can be used to look for a disease after a person has displayed symptoms. In the case of Adam Foyes, one of many cases highlighted in *Time* magazine's cover story on genetic sequencing, doctors had the sick child's genome sequenced to check for known variants, resulting in a diagnosis.⁵ So, while genome sequencing is only moderately helpful for directing future healthcare, it may be more helpful in diagnosing rare genetic diseases, thus eliminating the need and expense of other exploratory procedures.

On the other hand, there are significant deficiencies in our current level of knowledge and ability with genetic sequencing. A survey conducted by United Healthcare says that only 1 in 5 of its doctors believes genetic testing will lead to lower medical costs.⁶ Most believe it will lead to unnecessary tests. Additionally, doctors are unsure how much information to give patients. Should doctors tell patients if they find a marker for breast cancer or dementia risk, when the original motivation for testing was something completely different? And many question whether it is fair to a child for her parents to know this kind of information about her.

One of the motivations behind the Human Genome Project was to develop cures for diseases. The idea was that

pinpointing the genetic markers for a disease would lead to development of tailor-made medicines. Even more hopeful is the prospect of replacing faulty genes with good ones, removing the problem completely. As it turns out, however, not all diseases are genetically-based, and those that are may be caused by multiple sites within the genome or related to epigenetic factors rather than the actual gene sequence. In addition, replacing a person's faulty genetic sequence with a healthy one is not a simple task, and the consequences of doing so may be more harmful than the disease itself.

Overall, genetic testing is a powerful tool. But like any other tool, it is most helpful when used at the appropriate time to do the right job. As we pursue the benefits of genetic testing, we should keep in mind that many limitations remain as the results are still difficult to interpret, and it often raises more questions than it answers.

- 1 The first two of these concerns ultimately led to the passage of the Genetic Information Nondiscrimination Act of 2008 (GINA).
- 2 E. R. Gibney and C. M. Nolan, "Epigenetics and Gene Expression," 105, no. 4-13 (2010): <http://www.nature.com/hdy/journal/v105/n1/full/hdy201054a.html> (accessed January 15, 2013).
- 3 Sujit Maiti, Kiran Halagur Bhoge Gowda Kumar, Christiana A. Castellani, Richard O'Reilly, and Shiva M. Singh, "Ontogenetic De Novo Copy Number Variations (CNVs) as a Source of Genetic Individuality: Studies on Two Families with MSD Twins for Schizophrenia," PLoS ONE 6(3): e17125 (2011): <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0017125>. Science Daily Release: <http://www.sciencedaily.com/releases/2011/03/110328151740.htm>.
- 4 Todd Smith and Sandra Porter, "Genetic Inequality," *The Scientist* (December 1, 2012): www.the-scientist.com/?articles.view/articleNo/33364/title/Genomic-Inequality/ (accessed January 15, 2013).
- 5 Bonnie Rochman, "Researchers Solve the Mystery of Child's Illness," *TIME* (November 8, 2012): <http://healthland.time.com/2012/11/08/researchers-solve-the-mystery-of-childs-illness/> (accessed January 15, 2013).
- 6 Bonnie Rochman, "Why Cheaper Genetic Testing Could Cost Us a Fortune," *TIME* (October 26, 2012): <http://healthland.time.com/2012/10/26/why-cheaper-genetic-testing-could-cost-us-a-fortune/> (accessed January 15, 2013).



HerDignity.net

A project of the global women's health Initiative
The Center for Bioethics & Human Dignity

• WHAT IS UNIQUE ABOUT THIS PROJECT:

Within the church, inadequate attention has been paid to the implications of a theological grounding of women's dignity as rooted in her creation in the image of God. **Women's Dignity is Human Dignity.** The intersection of bioethical concerns with female bodies and health are essential aspects of both dignity and our common humanity. While energies are appropriately being directed to issues of abortion and sex trafficking, the broader needs of girls and women are often overlooked or neglected.

Girls and women are human beings, to be welcomed in life and protected in law from conception through death.



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HEATHER ZEIGER, MS, MA RESEARCH ANALYST

I grew up in the Dallas area, and knew in high school that I wanted to be a scientist. I attended the University of Texas at Dallas and received a BS and MS in chemistry, with a minor in government and politics. I married my high school sweetheart (and fellow science nerd) after my sophomore year at UTD.

Before graduate school I interned at Probe Ministries, an apologetics and worldview ministry. After completing my graduate degree, I decided to go back to Probe as a full-time research assistant. I wrote radio programs and publications, gave speaking engagements, and answered emails in the area of faith and science. During this time I was introduced to CBHD and Trinity's bioethics program. I had taken a bioethics class while in graduate school. I realized how little my science degrees had prepared me to think about the moral implications of scientific research. After much prayer and consideration, and contrary to my pronouncement that I would never go back to graduate school, I enrolled in Trinity's MA in Bioethics.

In 2010, I left Probe to work more in the public square as a teacher and writer. I love working with teens, and currently work part time as a SAT/ACT test prep instructor for Revolution Prep. The other part of the time I am a freelance science writer and a Research Analyst for CBHD. I enjoy updating bioethics.com and using my past radio experience to help write scripts for the Everyday Bioethics Audio Commentary. After graduating this May, I hope to continue to pursue these avenues more fully, and might even write a book one day.

JOEL CHOPP RESEARCH ASSISTANT

Originally from Southwest Ohio, I graduated from God's Bible School and College in Cincinnati in 2010 where I majored in Ministerial Education. My wife and I moved to Chicago the following summer, and I am currently pursuing a MA in Christian Thought with an emphasis in Systematic Theology.

My roommate during my undergraduate education was pursuing a degree in biology at the University of Cincinnati, and I had the opportunity to attend a number of conferences with him about the intersection of faith and science, attending presentations from Kenneth Miller, E.O. Wilson, and others. The conferences, as well as numerous conversations with my friend, shaped and challenged my understanding of the role and importance of theology's contribution to the advancement of science.

Attending the recent Fellows consultation on synthetic gametes reinforced my belief about the importance of bringing theologically informed ethical reflection to bear on the remarkably complex bioethical challenges of our day.

JESSICA WILSON, MDIV, THM RESEARCH ANALYST

Having completed an undergraduate degree in Intercultural Studies (Greek minor) and a MDiv in Wisconsin in 2010, I moved to the Chicago area to pursue a ThM in Systematic Theology at Trinity Evangelical Divinity School during the 2010-2011 school year. In the fall of 2011, I returned to TEDS to begin a PhD in the same discipline. This semester finds me working on a dissertation in the metaphysics of the Incarnation – specifically, dyotheletism (the doctrine that the incarnate Christ has two wills corresponding to his two natures, human and divine) in relation to the metaphysics of mind and volition – as well as an MA in Philosophy at Northern Illinois University. Most of my current research falls under the rubrics of analytic philosophical theology, philosophy of religion, metaphysics, and philosophy of language. Upon completing doctoral studies, I hope to teach theology and philosophy.

For the past five years, I have also had the privilege of working as an Individual Support Professional for the clients of Shepherds Ministries, a Christian organization that provides assistance and care for intellectually disabled individuals. My first exposure to CBHD occurred in that context, when I came across helpful materials related to disability ethics on the Center's website in the course of work-related research.

I am delighted to have joined the CBHD research team as a Research Analyst. The opportunity to participate in its important work, and particularly to contribute to interdisciplinary dialogue from the perspective of theology and philosophy, is one I value highly.

THE ETHICS & THEOLOGY OF SYNTHETIC GAMETES

ACADEMY OF FELLOWS HOLDS CONSULTATION ON SYNTHETIC GAMETES

DÓNAL P. O'MATHÚNA, PHD
CHAIR, ACADEMY OF FELLOWS

On November 3, 2012 the CBHD Academy of Fellows held its second consultation. The first consultation in April 2011 gathered more than twenty members of the Academy to discuss the legacy of Paul Ramsey and the future of Christian bioethics. One of the purposes of the Academy is to advance scholarship by developing Christian analysis of and responses to new developments in bioethics, particularly those with implications for human dignity. This second consultation was the result of a new initiative to encourage proposals that will foster collaborative scholarship and publications on an emerging issue in bioethics.

The consultation developed by means of a grant process. All members of the Academy of Fellows were invited to form teams to generate proposals for the topic of the consultation. The successful team was led by Dr. Calum MacKellar, a CBHD Fellow and Director of Research for the Scottish Council on Human Bioethics. The theme of the selected consultation proposal was the ethics and theology of synthetic gametes.

“Synthetic gametes” is a term used to describe both sperm and egg cells produced from stem cells, and eggs that have been modified to remove genetic defects found in their mitochondria. Research is ongoing into the techniques involved, but the potential creation of these gametes raises difficult bioethical issues. To date, little Christian or secular bioethical debate has occurred regarding these developments.

As with many areas of biotechnology, the impetus comes from a desire to treat illness. Pursuit of synthetic gametes is primarily a reaction to a group of genetic diseases called maternally-inherited mitochondrial DNA disorders. Cells contain small

structures called mitochondria which are unique in having DNA that differs from the rest of the cell's DNA. This mitochondrial DNA is inherited only from our mothers, not from both mother and father as happens with the rest of our DNA. If a woman has a mutation in her mitochondrial DNA, it will be passed on to all her children. These mutations can lead to a wide range of incurable health problems, with symptoms such as organ failure, stroke, dementia, blindness, and premature death.

Researchers are currently exploring a number of techniques that would allow for the replacement of defective mitochondrial DNA with other DNA free from that mutation. The hope is that doing so would eliminate the mitochondrial DNA disorder. If such modified or synthetic eggs were fertilized, however, the genetic changes would be passed on to offspring and subsequent generations. This would therefore be a germline genetic modification, with all the attendant ethical ramifications. Such modifications have, to date, been viewed as unethical by most authorities. That being said, these modifications are no longer scientifically implausible, since they have been accomplished in animals; therefore it is crucial that the reasons for such ethical proscriptions be revisited and reinforced for the current situation.

A couple of weeks before the consultation, the first reported use of mammalian embryonic stem cells to produce mouse eggs was published.¹ Mouse sperm had been made from stem cells about a year prior. If these procedures were shown to work for human cells, the possibility would exist that eggs could be made from a man's cells, be fertilized with another

man's sperm, and yield a baby with two genetic fathers. Likewise, babies could be born with two genetic mothers. The potential for such applications raises numerous ethical issues.

For the consultation, a number of relevant ethical and theological issues were presented, with extensive discussion of each topic. The day started with a viewing of *In Vitro*, a 20-minute drama film made with support from the private British funding agency The Wellcome Trust.² The movie depicts some of the potential social and familial issues that could arise if women were able to inseminate themselves with sperm made from their own cells. Following this, Calum MacKellar examined some of the reasons why it is so important for people to have children genetically related to themselves. He discussed the importance of kinship bonds from both sociological and theological perspectives. The potential new developments raise important questions about identity, especially given the human search for purpose. The monster in Mary Shelley's *Frankenstein* provided a literary way to explore the importance we place on why we have been made.

David A. Jones, Director of the Anscombe Bioethics Centre in Oxford, England, presented via videoconference on the theological reasons for opposition to donor insemination within the Catholic Church. This discussion focused on the ethical and theological implications of donor gametes for marriage and family. This was followed by an online presentation from CBHD Senior Fellow C. Ben Mitchell, focusing on the philosophical and theological significance of gametes from a child-centered perspective. He noted a lack of theological exploration of the significance of gametes and their ethical status within Protestant circles, while examining the strengths and weaknesses of rights language as a basis for such reflection.

The afternoon sessions explored the ethics of technological developments involved in synthetic gamete creation. CBHD Fellow Brent Waters examined some of the implications of reducing our bodies to collections of parts. Late modern society has reached a point where we both love and abhor our bodies. Finitude and mortality are seen as features to be overcome and eliminated (through enhancement), while in reality they are part of our nature. Significant ramifications follow when we forget this point.

Trevor Stammers, Programme Director in Bioethics & Medical Law at St. Mary's University College, London, evaluated pronuclear transfer and maternal spindle transfer.³ These are two of the procedures being developed in the hope that they may overcome inherited mitochondrial DNA disorders. Afterward, CBHD Fellow Agneta Sutton provided an ethical and theological evaluation of two additional procedures, cytoplasmic transfer and blastomere nuclear transfer.⁴ Her presentation emphasized a distinctly Christian challenge for as

to "unconditionally welcome" our children.

The research team is currently developing the presentations for publication. The team also prepared a set of recommendations regarding the ethics of synthetic gametes and embryos, which were discussed and revised at the consultation and are currently being further refined. Upon completion, CBHD will share these publicly to encourage further discussion and reflection on this topic.

Consultation attendees rated the presentations and ensuing discussions highly. This first iteration achieved its aim of bringing Christian bioethics scholars together to work on an important emerging topic. Those who attended were enthusiastic about the discussions and gained insight into an emerging topic that requires further careful reflection and prayer. Engagement with scholars from Christian bioethics centers other than CBHD contributed to fostering further collaborative scholarship. Those who attended the event were joined with a host of online viewers for the Center's first live-streamed event. The consultation was underwritten by a designated gift from an anonymous donor. As a result of this generous funding the consultation was offered free to the public and the audio and video will be soon be made available through the CBHD website.

- 1 Alla Katsnelson, "Mouse Stem Cells Lay Eggs," *Nature* October 4, 2012, <http://www.nature.com/news/mouse-stem-cells-lay-eggs-1.11545> (accessed January 10, 2013).
- 2 Tom Lloyd, *IN VITRO: She Changed The World Forever* (Cumbria, UK: White-wood & Fleming, 2011), <http://www.invitrofilm.com>.
- 3 Nuffield Council on Bioethics, "Novel Techniques for the Prevention of Mitochondrial DNA Disorders: An Ethical Review" (2012), <http://www.nuffieldbioethics.org/mitochondrial-dna-disorders>
- 4 *Ibid.*



Future events of the Academy of Fellows are contingent upon gifts designated for the Academy's work. If you would like to invest in Christian bioethics scholarship, please support us at:

cbhd.org/give-online

TOP BIOETHICS STORIES: SEPTEMBER-NOVEMBER 2012

COMPILED BY HEATHER ZEIGER, MS, MA
RESEARCH ANALYST

“ENCODE: The Human Encyclopedia” by Brendan Maher, *Nature*, September 5, 2012.

ENCODE was designed to pick up where the Human Genome Project left off. Although that massive effort revealed the blueprint of human biology, it quickly became clear that the instruction manual for reading the blueprint was sketchy at best. Researchers could identify in its 3 billion letters many of the regions that code for proteins, but those make up little more than 1% of the genome, contained in around 20,000 genes — a few familiar objects in an otherwise stark and unrecognizable landscape. (<http://tinyurl.com/8n2taop>)

The results of the ENCODE project highlight just how little we really know about genetics. Regions of DNA classified as non-coding were discovered to contribute to a vast array of ‘epigenetic’ factors that regulate protein construction, cell fate, embryological development, and cancer, to name a few. ENCODE laid to rest commonly held assumptions in the field of genetics, including the notion that such non-coding segments are “junk DNA,” not serving an important function in gene expression.

“Could Cyborg Cockroaches Save Your Life?” by Amanda Fiegl, *National Geographic*, September 7, 2012.

The sight of a cockroach scuttling across the floor makes most of us shudder, but in a disaster, roaches might prove to be our new best friends. Cockroaches that are surgically transformed into remote-controlled ‘biobots’ could help locate earthquake survivors in hard-to-access areas. (<http://tinyurl.com/9cumby4>)

The news wires were abuzz about cyborg cockroaches. This creepy, crawling research project sought to control the movement of cockroaches by sending electrical impulses to their antennae, with the aim of using the cockroach

cyborgs to investigate hard-to-reach locations, such as disaster sites.

“New York City Schools Give Plan B ‘Morning after Pill’ to Teens” by Susan Donaldson James, *ABC News*, September 24, 2012.

The pilot program that allows teens to access the contraceptive drug Plan B in 13 New York City schools — perhaps the first of its kind in the country — may be eventually implemented citywide. (<http://tinyurl.com/b2nyoyl>)

Several New York City schools have initiated a new program to decrease the incidence of teen pregnancy by providing emergency contraception to young women. Parents were sent a letter about this initiative and had the opportunity to opt out. The measure was enacted in a few New York schools last year, where 4.7 percent of the 12,000 girls received emergency contraception. This project prompted debate across the U.S. because of both the controversial nature of the morning after pill and concerns about schools distributing prescription medication to minors.

“UK, Japan Scientists Win Nobel for Adult Stem Cell Discovery” by Anna Ringstrom, *Reuters*, October 8, 2012.

Scientists from Britain and Japan shared a Nobel Prize [in October] for the discovery that adult cells can be transformed back into embryo-like stem cells that may one day regrow tissue in damaged brains, hearts or other organs. (<http://tinyurl.com/9ueurng>)

The Nobel Prize for medicine was awarded to John Gurdon, 79, of the Gurdon Institute in Cambridge, Britain and Shinya Yamanaka, 50, of Kyoto University in Japan, for discovering how to convert adult tissue into induced pluripotent stem cells (iPSCs), which behave similarly to embryonic stem cells. The creation of iPSCs has made headway in

ethical stem cell research and has provided a solution to tissue rejection.

“Three Parent IVF Trial ‘Success’” by Michelle Roberts, *BBC*, October 24, 2012.

US scientists say a human and animal trial of a controversial new IVF treatment has yielded promising results. The findings in *Nature* magazine show that healthy-looking embryos can be created from a mix of three adult donors. (<http://tinyurl.com/96uvan8>)

A new *in vitro* fertilization technique has shown promising results in monkey and human trials. Scientists were able to create viable embryos from three genetic donors. A female donor supplies the egg; the nucleus of the donor egg is removed and replaced with the nucleus from a second female’s (the mother’s) egg, giving the egg two female genetic contributors. This research may allow women with a mitochondrial genetic defect to produce a healthy baby by employing a donor egg with healthy mitochondria.

“Why Cheaper Genetic Testing Could Cost Us a Fortune” by Bonnie Rochman, *Time*, October 26, 2012.

In an ideal scenario, genetic analysis could save money by catching diseases early, offering targeted treatments and underscoring the most effective preventive measures. In the worst case, it could deluge an already swamped health care system, as patients with ambiguous results begin to seek frequent screenings — and potentially unnecessary procedures — for diseases they might never develop. (<http://tinyurl.com/8fu7yj5>)

Genetic testing is becoming faster, easier, and cheaper, which means that it is also becoming more accessible. However, many people are unsure what to do with the information. Genetic markers do not indicate disease inevitability, yet many people already respond to certain genetic markers by taking preventative measures

or undergoing invasive procedures. Furthermore, many people are concerned about being disqualified for certain kinds of insurance due to the results of their genetic tests.

“Assisted Suicide Measure Narrowly Defeated; Supporters Concede Defeat” by Carolyn Johnson, Boston Globe, November 7, 2012.

A divisive ballot initiative that would allow terminally ill patients to end their lives with medication prescribed by physicians was narrowly defeated. (<http://tinyurl.com/a9amfb6>)

Massachusetts was one of several states that had physician-assisted suicide on the November ballot. The ballot measure was defeated, leaving Washington, Oregon, and Montana as the only states where physician-assisted suicide is legal. This ballot measure brought the discussion of euthanasia and physician-assisted suicide back to the forefront in the media.

“Report Raises Ethical Concerns about Human Enhancement Technologies” by Alok Jha, The Guardian, November 7, 2012.

Drugs and digital technologies that will allow people to work harder, longer and smarter are coming soon, say scientists and ethicists, so we need to decide now how best to ensure they are used properly. (<http://tinyurl.com/aqorcjn>)

A report authored by experts from the Royal Society, the Royal Academy of Engineering, the British Academy, and the Academy of Medical Sciences discussed the ethical considerations and concerns raised by enhancement technologies in the workplace. This report covered topics ranging from employees taking “smart drugs” to cybernetics and integration with computer technology. Of particular concern was the possibility of employers coercing employees to use enhancement technology.

“Identical Twins’ Genes Research Suggest Siblings Are Genetically Different” by Tia Ghose, Huffington Post, November 10, 2012.

Identical twins may not be so identical after all. Even though identical twins supposedly share all of their DNA, they acquire hundreds of genetic changes early in development that could set them on different paths, according to new research. (<http://tinyurl.com/afmrl86>)

The predominant theory has been that identical twins share identical genomes, so if one twin develops a genetic disease, then the other twin usually should, too. However, it is often the case that one twin will develop a disease while the other will not. Now new findings show that identical twins may not have the same genetic make-up after all, calling into question years of studies of genetic (nature) versus environmental (nurture) or lifestyle causes for certain diseases.

“Woman ‘denied a termination’ dies in hospital” by Kitty Holland and Paul Cullen, Irish Times, November 14, 2012.

Savita Halappanavar (31), a dentist, presented with back pain at the hospital on October 21st, was found to be miscarrying, and died of septicaemia a week later. (<http://tinyurl.com/bm2b3sx>)

Savita Halappanavar was denied an abortion throughout a painful, and ultimately fatal, three-day miscarriage at a hospital in the predominantly Roman Catholic nation of Ireland. Ireland’s law technically allows for abortions when the mother’s life is at stake, but the conditions under which this law applies are ambiguous, and doctors deemed to have applied it amiss face severe consequences. Halappanavar’s death forced Ireland to re-evaluate how it enforces abortion laws, and has been used around the globe as an example of the results of overly strict anti-abortion legislation.

“Contraception Could Save the World \$5.7bn: UN Report” by Katy Lee, AFP, November 14, 2012.

The world economy would be boosted by billions of dollars if all women had access to contraception, the United Nations said on Wednesday in its annual State of World Population report. (<http://tinyurl.com/alavowj>)

The United Nations’ State of World Population report indicates that inadequate access to family planning resources is a major contributing factor in poor health and poverty. Babatunde Osotimehin, executive director of the UN Population Fund, referred to family planning as a right and claimed that access to birth control would provide significant economic benefits, particularly for developing countries.

QUESTIONS?

Would you like to offer comments or responses to articles and commentaries that appear in *Dignitas*? As we strive to publish material that highlights cutting-edge bioethical reflection from a distinctly Christian perspective, we acknowledge that in many areas there are genuine disagreements about bioethical conclusions. To demonstrate that bioethics is a conversation, we invite you to send your thoughtful reflections to us at info@cbhd.org with a reference to the original piece that appeared in *Dignitas*. Our hope is to inspire charitable dialogue between our readers and those who contribute material to this publication.

updates & activities

EVENTS

Academy of Fellows

In November CBHD hosted the first public consultation of the Academy of Fellows, "Theology and Ethics of Synthetic Gametes." A trans-Atlantic team led by CBHD Fellow Dr. Calum MacKellar embarked on an interdisciplinary dialogue around this emerging topic. The session was live-streamed for those who were unable to attend, and the audio and video will be freely available in the near future on cbhd.org.

Global Bioethics Education Initiative (GBEI)

Through this initiative CBHD is providing free Christian bioethics resource kits to a number of seminaries and university libraries and other types of organizations around the globe. These kits include a collection of nearly twenty resources published through the work of the Center over our history. In the past year kits have been sent to institutions in India, Thailand, Lithuania, Slovakia, Canada, Ukraine, and the Philippines. In some cases these are the only bioethical resources that these academic institutions have in their entire holdings. If you know of institutions that would benefit from this program, please let us know by contacting Michael Sleasman at msleasman@cbhd.org.

Collaboration:

CBHD continued its ongoing partnership with the Christian Medical and Dental Associations by again hosting the fall meeting of the CMDA Ethics Committee.

MEDIA RESOURCES



CBHD.org on
Twitter: [@bioethicscenter](https://twitter.com/bioethicscenter)



Bioethics.com on
Twitter: [@bioethicsdotcom](https://twitter.com/bioethicsdotcom)



The Bioethics Podcast at
thebioethicspodcast.com



Facebook Cause at causes.com/cbhd



Facebook Page at
facebook.com/bioethicscenter



Linked-In Group at linkd.in/thebhd



YouTube at
youtube.com/bioethicscenter



The Christian BioWiki
christianbiowiki.org

STAFF

PAIGE CUNNINGHAM, JD, MA

- In August, participated in the Charitable Dialogue on Christians and Healthcare, sponsored by Trinity Evangelical Divinity School and Trinity Graduate School. She addressed *imago Dei*, the meaning of "health," and the philanthropic ministry of the early church.
- Was interviewed by *Christianity Today* on parents' prayers for miraculous healing.
- In October, delivered the annual *Witherspoon Lecture* of Family Research Council, on "Markets and Consumers: The Commodification of Women and Girls."
- Wrote "On Removable Limbs, Fairness & Upgrades" for *Salvo* magazine's winter issue, addressing potential enhancement use of prosthetics.

MICHAEL SLEASMAN, PHD

- In October, attended the annual meeting of the American Society for Bioethics & Humanities in Washington, DC. While in DC, Michael had several meetings at Georgetown University, including a personalized research consultation with several staff from the Bioethics Reference Library to discuss acquisitions strategy for CBHD's Research Library as well as trends in bioethics research and publications.
- Taught the Foundations for Cultural Engagement course for Trinity Graduate School in the Fall semester.
- Spoke at Christ Church in Lake Forest in November on "Genesis and Bioethics."
- In November, Michael attended the annual meetings of the Evangelical Theological Society (in Milwaukee) and the American Academy of Religion (in Chicago). During AAR, he participated in a planning meeting for a new organization to facilitate Christian dialogue (pro and con) on human enhancement and transhu-

manism. If you are interested in becoming connected to this organization, please contact Michael directly at msleasman@cbhd.org.

- Interviewed in November on "religious ethics and the public square" as part of a qualitative research project for an upcoming monograph by a sociologist exploring this topic.
- Appointed as the chair of TIU's Institutional Review Board in the Fall.

HANS MADUEME, MD, PHD

- Participated on a panel at Covenant Theological Seminary for the conference "Science and Faith: Friends or Foes?" (Oct 12-13) in a session entitled, "Human Origins and Human Uniqueness."
- Presented in two sessions at the annual ETS meeting on "Sinning with Soul: Against Anti-Dualistic Biblical Scholarship" and "Original Sin, Christology, and the Virgin Birth: A New Response to an Old Conundrum."

JENNIFER MCVEY, MDIV

- Spoke at Christ Church in Lake Forest in November on "Reproductive Technology, Ethics, and the Christian."

JESSICA WILSON, MDIV, THM

- Presented the paper "Lost Narrative, Lost Truth? Affirming the Communicative Potential of Systematic Discourse" at the annual ETS meeting on the transposition of cognitive content from narrative to non-narrative discourse forms at the Evangelical Theological Society's national conference.
- Organized and facilitated a series of student discussions on Jeffrey P. Bishop's recent book, *The Anticipatory Corpse: Medicine, Power, and the Care of the Dying* (University of Notre Dame, 2011).

ON THE CBHD BOOKSHELF

ARTICLES OF NOTE: [For those interested in knowing what books and articles the Center staff have been reading](#)

- Dick, Helen. "Risk and Responsibility: State Regulation and Enforcement of the Direct-To-Consumer Genetic Testing Industry." *Saint Louis University Journal of Health Law & Policy* 6, no. 1 (2012): 167-199.
- Goldenberg, Aaron, and Richard Sharp. "The Ethical Hazards and Programmatic Challenges of Genomic Newborn Screening." *The Journal of the American Medical Association* 307, no. 5 (2012): 461-462.
- Greggo, Stephen, and Lucas Tillet. "Beyond Bioethics 101: Where Theology Gets Personal and Pastoral." *Journal of the Evangelical Theological Society* 53, no. 2 (2010): 349-363.
- Hauskeller, Michael. "Reinventing Cockaigne: Utopian Themes in Transhuman Thought." *Hastings Center Report* 42, no. 2 (2012): 39-47.
- Hughes, Austin. "The Folly of Scientism." *The New Atlantis* 37 (Fall 2012): 32-50.

COMING SOON: CBHD'S 2012 ANNUAL REPORT