The Linacre Quarterly 83 (1) 2016, 83–96

Article

Neglecting human ecology: The common element of global health failures

Matthew Hanley

The National Catholic Bioethics Center, Philadelphia, Pennsylvania, USA

Attempts to control malaria, AIDS, and maternal mortality in Africa have been woefully inadequate. This has involved adopting an almost exclusively technical preventive approach in the context of AIDS even though emphasizing human behavior holds the most promise. But on the other hand, it has also involved abandoning highly effective technical measures, as in the case of malaria. This suggests that the failure, at root, is anthropological in nature. The common element, it is argued here, is the failure to place the human *ecology resolutely above destructive ideologies. Sound public-health approaches have been spurned in favor of predetermined preventive approaches in the service of ideological aims rather than of man and the common good. This article examines the ideological forces that have ultimately driven global health policy, and proposes that a more humane anthropology would be beneficial.*

Lay Summary: *The scourges of malaria, AIDS, and maternal mortality have persisted in Africa, even though sensible and available means of addressing these epidemics, when stressed, have met with success. The reluctance to consistently emphasize the soundest public-health approaches—whether technical or behavioral in nature—indicate that global health policy has to a large extent been improperly concerned with advancing ideological agendas. The challenge we face today is not primarily technical but philosophical; the healing professions would perform a service by cultivating a higher view of man and an appreciation for objective moral truths that protect him.*

Keywords: HIV/AIDS, Malaria, Maternal mortality, Environmentalism, Ideology, Human ecology, Morality

Introduction

If we were to call to mind the persistent international health crises of AIDS, malaria, and maternal mortality, we may well be able to point to particular, or isolated, and regrettable errors in dealing with them. But is there a larger pattern of failure, a common element, in the prevailing approaches to controlling these prolific sources of preventable mortality in Africa?

The favored approaches to preventing these epidemics were deeply misguided from a purely public-health point of view. They each failed to stress the most advisable, most feasible, and most successful measures. Disregarding the verdicts of science and epidemiological observation, the authorities nevertheless defended their chosen approaches as "evidence based."

These failings are symptomatic of a larger problem: the exploitation of the medical profession itself in the service of ideological aims (Sgreccia 2012, 208). Many of today's ideological aims revolve around issues of sexuality. Not all of them

 DOI 10.1080/00243639.2015.1123890

do, of course, which explains why the response to malaria—one of the great human tragedies of the twentieth century—is easily worthy of inclusion.

The reason we are fighting these global health crises with one hand tied behind our backs, as we shall see, is not technical but philosophical and anthropological in nature. It is that anthropological dimension—the quality of regard we have for man—that has been decisive. One might even assert that these failures amount to a profound neglect of what the Magisterium has recently taken to calling the "*human* ecology." Pope John Paul II used the term in the 1991 encyclical *Centesimus annus*, stressing that the family, founded on marriage, is the "first and fundamental structure for a 'human ecology'" (John Paul II 1991, n. 39).

In *Caritas in veritate*, Pope Benedict XVI elaborated upon the concept, noting that it would be a mistake to "to view nature as something more important than the human person" (Benedict XVI 2009, n. 48). Caring for the natural environment is a duty, but even more important is the way humanity treats itself; "above all," he argued, caring for the created order entails the duty to "protect mankind from self-destruction." Human ecology is threatened today chiefly by "the moral tenor of society," which Benedict plainly asserted is the "decisive issue" (Benedict XVI 2009, n. 51). For this reason, nurturing the human ecology involves an invitation to contemporary society to seriously review its harmful lifestyles. At the heart of the encyclical is the notion that only conformity to truth—defending moral and ethical positions unpopular in ideologically charged elite circles—can safeguard authentic charity and foster integral human development.

"Human ecology" is one means of characterizing human interconnectedness, and as such it is inseparably linked to the delicate issues of life, sexuality, marriage, the family, social relations, and natural death. The general concept is that these realities are fundamental to integral human development; by failing to respect them, we contaminate the very domains necessary for human flourishing and co-existence. Although a precise definition of human ecology may be debated—indeed, Pope Francis's 2015 encyclical *Laudato si'* offers further development of this concept even as it has intensified debate—it entails the recognition of the primacy of man in the natural world and the objective moral order necessary for his flourishing. My contention here is that the failure to contain AIDS, malaria and maternal mortality can be traced back to the failure to recognize these essential components of human ecology.

As "human ecology" is generally an unfamiliar term, a concrete example may help illuminate the concept. As a result of sex-selective abortion, the ratio of boys to girls in Armenia, Azerbaijan, and Georgia is 117, 116, and 121, respectively; this compares with 118 in China and 111 in India, countries more typically associated with the practice. In Armenia, the first-child sex ratio is 138, and if the first child is a girl, the ratio for the second is a staggering 154 (Michael et al. 2013). These figures clearly indicate that something is structurally out of kilter at the most basic level of human composition; they adequately conjure up an image of an ecological meltdown.

In one of his 1980 talks that would form his Theology of the Body, St. John Paul II noted that "Human life's dignity and balance depend at every moment of history and at every point of geographical longitude and latitude, on who she (woman) will be for him (man), and he for her" (John Paul II 1980, n. 7). Though he did not explicitly refer to "human ecology," this passage—invoking as it does the notion of balance being a function of fundamental human

relationships—is also charged with that connotation.

In reviewing the principal responses to malaria, AIDS, and maternal mortality in Africa, we will see that they have each failed to place the *human* ecology resolutely above destructive ideologies. In practice, this has meant subordinating millions of lives to misguided efforts to tend to the environment and to sexual and reproductive health. This has involved predetermined preventive approaches along with explicit disregard for scientific truths and traditional medical ethics in the service of a larger ideological cause. To make gains in these areas, what we need most of all are sturdier ideas and a higher view of man.

AIDS Control: Risk Reduction or Risk Avoidance

Given that the vast majority of HIV incidence in Africa is driven by heterosexual contact, there are essentially two means of approaching the problem of transmission. On the one hand, people could be encouraged to *avoid risk* by practicing abstinence or remaining faithful. On the other hand, people could be encouraged to *reduce risk* inherent in certain behaviors by technical means; these primarily consist of condoms, voluntary counseling and testing, and treatment of other sexually transmitted infections as a means of curbing HIV transmission.

These technical measures, despite being trumpeted as promising, have failed to lower AIDS rates.[1]

Quite simply, each of Africa's declines in AIDS rates is most attributable to changes in sexual behavior—specifically fidelity, or what the public-health community sometimes calls "partner reduction," and abstinence (Hanley and de Irala 2010, 30). Furthermore, as Cambridge scholar Daniel Low-Beer has observed, when this type of shift in fundamental behavior did not occur, "HIV did not decline, even with greater resources, condom use, counseling, education, and treatment" (Low-Beer 2003).

Decades ago, Uganda produced the most spectacularly successful AIDS reduction in the world. They did so by intentionally emphasizing behavior change and shunning risk reduction. Taking the lead, Ugandan President Yoweri Museveni stressed the indispensability of human ecology as well as the impracticalities of risk reduction, stating:

> In the olden days you offered us the magic bullet of penicillin, now we are being told to protect our lives by a mere bit of rubber. In a country like mine where people have to walk five kilometers to get an aspirin, do you think that they will go there to get a condom? That is why I am asking my people to go back to our time-tested culture of no premarital sex and faithfulness in marriage. Young people need to be taught discipline, self-control, and at times sacrifice. (Museveni 1991)

Uganda's energizing results, oddly, were greeted with little cheer: the percentage of adults living with HIV/AIDS in Uganda dropped from 15 percent in 1991 to 5 percent in 2001. It was an unprecedented and unparalleled achievement. In the 5-year period during which Uganda achieved an 80 percent decrease in its HIV incidence (new cases), the country spent the modest sum of just $21 million. In fact, the behavioral changes were roughly equivalent to an 80 percent effective "social vaccine." Nothing close to that exists even to this day.

The reduction in the number of sex partners was the most significant factor in reducing HIV prevalence, with an estimated decrease of 65 percent between

1989 and 1995 in the number of people who said they had sporadic sexual relations. In fact, by the mid-1990s, 95 percent of adults said they had only one partner or none at all. The percentage of men who said they had more than three partners decreased from 15 to 3 percent, significantly lower than the percentage of other nearby countries with high HIV prevalence rates. In 1989, the number of "non-regular" partners reported in Uganda was similar to the numbers in Kenya, Zambia, and Malawi. By the mid-1990s, however, it was 60 percent lower in Uganda than in those countries. This largely explains the decrease in the HIV rate in Uganda and the lack of a decrease in those countries at that time.[2]

Another reason we can be confident that Uganda's AIDS decline was due to these behavioral changes is that their AIDS rates were going down, precipitously so, long before the introduction and expansion of condom promotion programs and voluntary counseling and testing services. In 1989, fewer than 3 percent of Ugandan women had reported ever using condoms. By 1995, that figure was still less than 8 percent—the lowest rate of the countries in that region. These low figures stand out sharply against the fact that African countries with the highest availability of condoms, such as Botswana, Zimbabwe, and South Africa, also have some of the highest HIV prevalence rates in the world.

In fact, as scholars in the U.K. argued in a 2004 *Journal of International Development* article, the promotion of condoms at an early stage proved counterproductive in Botswana (known for its very high AIDS rates), whereas the lack of condom promotion during the 1980s and early 1990s contributed to the relative success of strategies to change behavior in Uganda (Allen and Heald 2004). As a matter of fact, HIV prevalence has been rising in Uganda in recent years, as its preventive emphasis shifted to the risk reduction model favored by Western donors (Hanley and de Irala 2010, 37).

A handful of other countries have also achieved reductions in HIV prevalence subsequent to fundamental changes in behavior. Most recently, Zimbabwe's HIV prevalence dropped almost in half, from an astonishing 29 percent of all adults nationwide in 1997 to 16 percent in 2007, according to an important study published in 2011 (Halperin et al. 2011).

In a nutshell, changes in sexual behavior —substantial reductions in casual, extramarital, and commercial sex—accounted for the drop in Zimbabwe's HIV burden. Condom use did not shoot up during the same period; it had increased somewhat in earlier years, but stayed rather constant while the precipitous declines in HIV transmission occurred—so condoms cannot explain this decline (Halperin et al. 2011). It is also worth noting that the precipitous decline in AIDS prevalence in Zimbabwe coincided with a period of hyper-inflation and unemployment, thereby demolishing the theory that poverty, rather than behavior, drives the AIDS epidemic.

An important 2013 article published by the *African Journal of AIDS Research* has corroborated the preponderance of earlier findings. It evaluated population-based surveys from four African countries with high HIV prevalence (Côte d'Ivoire, Swaziland, Tanzania, and Zambia). The researchers' findings clearly indicated that condoms (as well as testing services) have had little population-wide impact; by extension, they argued that these interventions should not be the mainstay of prevention efforts. Alternatively, they concluded that "directly addressing the risk behaviors that spread HIV" is warranted (Hearst et al. 2013).

This type of unwelcome recommendation has consistently been ignored or underemphasized. The failure to do so has been consequential indeed; a well-regarded

Cambridge University researcher estimated that if a prevention program that actually emphasized behavior change had been implemented (as Uganda did with dramatic success), it might have saved 3.2 million lives in South Africa from 2000 to 2010, and prevented 80 percent of HIV infections in the hardest hit areas of sub-Saharan Africa (Allen 2002; Green 2011).

Abuse of Authority

Approximately a decade ago, UNAIDS commissioned researchers at the University of California at San Francisco to evaluate the impact of condom promotion on actual HIV transmission in the developing world. Their exhaustive review concluded that condoms have *not* been responsible for turning around *any* of the severe African epidemics.

Dr. Norman Hearst, who led the study, was originally surprised by the results himself, and soon realized that they were not what "UNAIDS wanted to hear at all" (Abraham 2009). Instead of welcoming the findings and adapting HIV prevention strategies accordingly, UNAIDS first tried to alter them, and then refused to publish them. The findings were so threatening to UNAIDS that the researchers were finally forced to publish them on their own in another prestigious, though less visible, peer-reviewed journal, *Studies in Family Planning* (Hearst and Chen 2004).

Meanwhile, explains Hearst, UNAIDS "released their own separate statement about how wonderful and effective condoms are. This did not have our names on it, nor would I have wanted it to." Hearst had worked with UNAIDS for years prior to this study but never received an explanation for their actions and soon sensed that he had been blacklisted. Hearst says we need to "move beyond debating how well condom promotion might work to examining how well it has" (Abraham 2009).

This episode provides a disturbing glimpse into the priorities of the leading AIDS agency of the United Nations. Although normally quick to insist on the right to "accurate information" about condoms, in this case UNAIDS placed their own ideological preferences above the welfare of those whom they are charged with protecting. In fact, this flagrant disregard for highly relevant evidence reveals their relative lack of interest in questions of epidemiological science. It would be difficult to avoid concluding that such actions fail others miserably, even by the standards of the most secular humanism.

A former UNAIDS employee, Elizabeth Pisani, wrote an entire book about her experience with the agency titled: *The Wisdom of Whores: Bureaucracies, Brothels and the Business of AIDS* (Pisani 2008). With firsthand knowledge, she provided a detailed account of the disingenuous and corrupt inner working of the agency; UNAIDS has an abysmal track record of manipulating data, suppressing inconvenient findings, and resisting sensible behavior change measures.

Condoms may protect some people from some sexually transmitted infections some of the time, but that is far from saying they have been effective or constructive as public-health policy. The CDC conceded as much when, in May of 2014, they announced a new recommendation: *uninfected* people at risk of HIV transmission should take a pill—a particular antiretroviral drug—on a daily basis. This is referred to as "pre-exposure" prophylaxis. This amounts to a shift in emphasis; as *The New York Times* relates, officials "have long been frustrated that the number of H.I.V. infections in the United States has barely changed in a decade, stubbornly holding at 50,000 a year, despite 30 years of advice to

rely on condoms to block transmission" (McNeil 2014).

The ineffectiveness of this most favored approach has been known for some time; even Dr. Anthony Fauci of the National Institutes of Health took to the pages of *The Washington Post* to characterize, in unusually strong terms, domestic AIDS prevention efforts as clearly insufficient (Fauci 2009). Dr. Fauci, however, made no mention of behavior change whatsoever. One suspects that he does not dare, because as Joseph Cardinal Ratzinger (later Pope Emeritus Benedict XVI) put it in a 1988 Cambridge lecture:

> whoever dares to say that mankind ought to refrain from that inordinate sexual license which gives AIDS its effective power is put on the sidelines as a hopeless obscurantist because of his public attitude. Such an idea can only be deplored and passed over in silence by the enlightened of today. (Ratzinger 1988)

The favored approach to AIDS control is actually philosophical in nature, rather than merely scientific, as it is commonly portrayed. Risk reduction is essentially the natural extension of—the embodiment of—dominant strains of thought in modern Western culture. That culture is characterized not only by a decline in faith but also, as John Paul II observed in *Veritatis splendor*, by a "decline or obscuring of the moral sense" (John Paul II 1993, n. 106). The modern Western mind is occupied by the following tenants, which are regarded uncritically as welcome guests:

Moral Relativism: the idea that there is no objective good or truth. No objective standards are to govern interpersonal (e.g., sexual) relationships.

Utilitarianism: the idea that behavior is only to be judged by its consequences. The whole point, as Bentham and Mill espoused, is to achieve the greatest good for the greatest number. The good here is associated with pleasure, so the general aim should be to maximize pleasure and to minimize pain. With that mindset, managing risk becomes the overriding objective. Risk reduction is quintessentially utilitarian. The great Russian philosopher Vladimir Soloviev observed back in the 1880s: "Carried to its logical end, the principal of utilitarianism is obviously equivalent to the complete negation of ethics" (Soloviev 1996, 142).

Radical Individualism: Personal autonomy—the "freedom" to do as one wishes—is exalted above virtually all else.

The retired British doctor and prolific author Theodore Dalrymple captured rather concisely this prevailing overall mentality, writing: "What I do is right because it is I who do it; the customer is always right, and life is my supermarket" (Dalrymple 2011).

For those who hold these underlying beliefs, turning to risk reduction seems logical, a matter of simple common sense. It is not necessarily easy, therefore, for many to grasp why the Church does not simply join forces with such efforts. The best explanation I have encountered comes from the Australian archbishop and bioethicist Anthony Fisher, O.P. The overarching consideration, he writes, is that "it is never the role of the Church, or its agencies, pastors, or members, to help people do the wrong things more efficiently or safely" (Fisher 2009, 357–8).

This gets to the crux of the matter: when considering a given behavior, do we think in terms of the category of the good, or do we think reflexively in terms of categories of safety or efficiency, without regard for what is good? The lack of concern about "the good" characteristic of risk reduction methodologies (concerned only with the "safe") sends a destructive message indeed; it implies that self-destructive behavior simply cannot be avoided. It is, at bottom, an ethic of despair and capitulation. It places no

premium on hope. And hope for the future is what is needed most—hope to be healed of past traumas; hope to live free of disease, discord, and inner turmoil.

By only trying to make everything "safer," we abandon all regard for how we should treat one another (the Golden Rule). In short, risk-reduction measures tend to facilitate the use of other people. There is no antidote or technical remedy for that.

As Karol Wojtyla (John Paul II) wrote back in 1960, in his book *Love and Responsibility*, "Only love can preclude the use of one person by another" (Wojtyla 1993, 30). Dismissing the traditional moral framework and adopting instead a utilitarian framework does not liberate the self from supposedly arbitrary "rules" but —and this seems generally underappreciated—involves the real danger of the loss of love itself. This poses a threat because love serves as the basis for the moral framework that alone can guarantee a harmonious human ecology; without the theological virtues of hope and love, therefore, the human ecology faces inevitable deterioration.

Taking a stand for love requires bravery. As the South African anthropologist Suzanne Leclerc-Madlala noted with insight, "There are many fears to be faced in this epidemic, and some of them have to do with our fear of taking an unpopular stand, of being associated with the moral right, or of being labeled a 'this' or a 'that'" (Leclerc-Madlala 2002).

Opposition to the risk-reduction mentality, therefore, is not a product of fear or irrationality, but is the product of holding people in high regard. It is to place trust in the capacity of people to change, to recognize and strive for what is good. By failing to recognize these human capacities, risk-reduction measures are, as Dalrymple has described them, inherently "infantilizing" (Dalrymple 2006, 41).

Believing what Pascal wrote in his *Pensées* would hinder professional advancement today, but it gets to the heart of the problem with the reigning philosophy of risk reduction:

> It is dangerous to make man see too clearly his equality with the brutes without showing him his greatness. It is also dangerous to make him see his greatness too clearly, apart from his vileness. It is still more dangerous to leave him in ignorance of both. (Pascal 1941, 132, n. 418)

Risk reduction strategies manage to hold people in both too high and too low regard: too high in that they condone and facilitate all manner of behavior, seeing no need for restraint because man can do no wrong; too low in the belief that man has no capacity to change, and is irrevocably locked into destructive lifestyles. To veer too far in either direction is to cultivate disaster.

Public-health authorities, however, are not always against risk avoidance. At least when it comes to tobacco, avoiding it altogether is to be preferred over any risk reduction measure. A 2012 article in the *British Medical Journal* was unabashed to make the following recommendation: "But for most smokers quitting is the best option and should be presented as achievable and attractive" (Hastings, de Andrade, and Moodie 2012). To suggest the same with respect to sexual activity would be to cross the cultural Rubicon, something our public-health institutions dare not do.

Maternal Mortality

This same dominant vision has stymied efforts to curb maternal mortality, which in Africa is estimated to occur in 640 per 100,000 live births, compared to 14 in the

United States; this represents one of the largest disparities in public-health statistics (Mulcaire-Jones and Scanlon 2011). Globally, maternal mortality accounts for 350,000 deaths per year; Melinda Gates identified a subset of 100,000 that occur "after unintended pregnancies" (Goldberg 2012), thereby designating them, for all intents and purposes, as a cause of death —much like the complications and infections that actually do kill, whether a woman's pregnancy is planned or not.

New York Times columnist Nicholas Kristof has echoed this predominant viewpoint, pleading that if we could only halve the number of pregnancies, we could halve the maternal mortality. By doing so he makes clear, if unintentionally, that he views persons themselves as part of the problem to be solved: by eliminating or "preventing" people, we eliminate or reduce the problem. This, of course, can never be the product of a truly Christian worldview. But should it even rightly be called secular "humanism"—given that it downgrades the value of all human life and that, lacking any deference towards the transcendent, it ultimately involves the inhumane coercion of the weak by the powerful, not the kind of solidarity needed to address real problems of infrastructure and human development?

Such a viewpoint paves the way for a fundamentally evasive approach to maternal and infant mortality in which upgrading the quality of medical care—insisting on actual survival strategies—is subordinated to the goal of reducing the number of pregnancies.

The overall focus has been on contraceptive technology, not on what causes 90 percent of maternal mortality; this approach has had little impact in Africa for decades, as Drs. George Mulcaire-Jones and Robert Scanlon have noted in the pages of this journal (Mulcaire-Jones and Scanlon 2011). They squarely insist that approaches must be oriented around what should be an obvious consideration: contraception does nothing to save the actual woman suffering from anemia or experiencing a complication around the time of delivery, and nothing for an asphyxiated newborn. Instead, the main proximate causes of maternal mortality—hypertensive diseases, obstructed labor, and hemorrhage—should be targeted with measures known to save lives at the most critical juncture (onset of labor through 7 days postpartum): antibiotics, safe blood banks, skilled birth attendants, and uterotonics (Mulcaire-Jones and Scanlon 2011).

The creative energies of the Gates Foundation, as Melinda has made clear, are fixated on upgrading contraceptive technology: developing new contraceptives that women could inject themselves, and perhaps even an entirely new class of (non-hormonal) drug without side effects. They are even entertaining the "crazy idea" (their words, meant positively) of creating an implantable device which a woman could turn on and off at will, and would last her entire reproductive lifetime.

By definition, this approach does nothing for desperate souls—women and newborns—in their hour of peril. This focus seems further misplaced considering the highly relevant demographic finding that the number of children people actually want—their desired fertility rates—turns out to be the single best predictor for their actual fertility levels, and not to be that closely correlated to the availability of contraceptives. In other words, respected demographer Nicholas Eberstadt notes, family planning programs tend not to "make an important independent contribution to reducing fertility levels in developing nations" (Eberstadt 2012).

This is but one truth that must be utterly disregarded to maintain such an emphasis on exporting contraceptives. That is always a hazardous proposition

since without truth, as Benedict XVI has noted, "there is no social conscience and responsibility, and social action ends up serving private interests and the logic of power" (Benedict XVI 2009, n. 5). Regarding artificial contraception as a panacea—an essential element to human development—is a fine illustration of what Benedict XVI had in mind when he wrote that the "true and gravest danger of the present moment is precisely this imbalance between technological possibilities and moral energy" (Ratzinger 2005).

In justifying her decision to make international family planning her top priority, Gates explained that taking sexuality and the natural law seriously meant, in essence, "not serving the other piece of the Catholic mission, which is social justice" (Daily Mail 2012). The inversion is striking, in that she views some fundamental moral considerations pertaining to family life as an obstacle rather than key to human development; Ratzinger has warned that this type of subjective moralism is "capable of arriving at contempt for man in the name of great objectives" (Ratzinger 2005).

Malaria: Shunning the Technical Fix

With the technical mentality in mind, let us now turn our attention, finally, to that other great killer: malaria. It still claims up to a million lives a year; approximately 90 percent of malaria deaths occur in Africa. Its history, tragically, represents a curiously countervailing antagonism towards the technical fix.

Malaria used to be a problem in the United States; prior to World War II, at least a million Americans contracted malaria annually. In 1948, Paul Müller was awarded the Nobel Prize for Medicine for pioneering the application of DDT as a pesticide. In 1952, there were a grand total of two cases in the US.

This spectacular success, as Robert Zubrin details in his illuminating review of the fate of DDT, was replicated throughout the world (Zubrin 2012). Sri Lanka's 2.8 million cases in 1946 evaporated to a mere 17 by 1963. South Africa achieved an 80 percent reduction. It was virtually eradicated in Europe, and malaria deaths virtually disappeared in India. A 1955 global DDT initiative wound up curbing malaria rates in several Asian and Latin American countries by 99 percent. Zubrin puts this astonishing accomplishment into perspective: "Never before in history had a single chemical saved so many lives in such a short amount of time" (Zubrin 2012).

The desired silver bullet—an inexpensive, highly effective, and durable tool—was at hand. Yet it would soon be taken off the table. Reliance upon technical tools—drugs, testing, and condoms—rather than behavior, have remained the almost exclusive approach to AIDS control despite their lackluster record. By contrast, spraying DDT indoors intelligently makes no demands on behavior and does not damage human or natural ecology, but it was nevertheless shunned.

Things all changed, of course, with the 1962 publication of Rachel Carson's revolutionary book *Silent Spring*. In it she made several unfounded and unsubstantiated allegations about the threat DDT posed to the environment, including her claim that some species were faced with "imminent extinction;" on these grounds, she urged that the use of DDT be prohibited. The birth of environmentalism as a mass movement is largely traced back to this book.

Her arguments revolved around the desire to protect wildlife, but as Zubrin writes: "The fraudulence of *Silent Spring* goes beyond mere cherry-picking or discredited data: Carson abused, twisted, and distorted many of the studies that she

cited, in a brazen act of scientific dishonesty" (Zubrin 2012). He is far from alone in that assessment; writing in *Forbes* in 2012 (to mark the fiftieth anniversary of Carson's book) Henry Miller and Gregory Conko concurred that "the fears she raised were based on gross misrepresentations and scholarship so atrocious that, if Carson were an academic, she would be guilty of egregious academic misconduct" (Miller and Conko 2012).

Despite the success of DDT-driven anti-malaria campaigns and evidence of its safety, the bankrolled and well-choreographed push to ban DDT intensified. International development agencies essentially chose not to fund anti-malaria projects that used DDT: "Third World governments were told that if they wanted USAID or other foreign aid money to play with, they needed to stop using the most effective weapon against malaria" (Zubrin 2012).

As a result, Sri Lanka's 17 cases in 1963 became half a million cases per year by 1969. Such calamities would continue to be replicated *en masse*, despite the fact that the National Academy of Sciences had pleaded, in vain, for sanity to prevail, noting that "in little more than two decades, DDT has prevented 500 million deaths due to malaria that would otherwise have been inevitable;" Zubrin estimates that more than 100 million deaths in Africa alone are attributable to DDT restrictions (Zubrin 2012). Anthony Daniels (better known as Theodore Dalrymple) rendered the following verdict on this ideologically driven public-health policy: "It is probably fair to say that Rachel Carson singlehandedly did more damage to Africa, though admittedly without intending to, than three centuries of the Atlantic slave trade" (Daniels 2001).

Considerable progress has been made, particularly over the past decade or so, in reducing both malaria incidence and mortality; that progress is chiefly attributable to the use of pesticides as vector control, including indoor spraying. Intermittent DDT use and its corresponding results are evident in several countries: South Africa, for instance, reverted back to DDT in the late 1990s, and in a span of 2 years, cut incidence by 93 percent; Namibia parlayed DDT use into a 92 percent reduction in hospital admissions and a 96 percent reduction in mortality between 2001 and 2009, with similar results observed in neighboring countries (Tren, Kamwi, and Attaran 2012).

Despite such overwhelming results, and the fact that no other tool comes close to matching its effectiveness, radical environmentalist groups, along with the United Nations Environment Program (UNEP), persist in their unyielding quest for a global ban on DDT; this includes pushing the only country that still produces DDT, India, to halt doing so (Tren, Kamwi, and Attaran 2012). Several entities rigidly disregard the vast body of evidence that DDT is not associated with harm to human health or the environment (Tren and Roberts 2011). Still others tout the supposed benefits of alternative, "environmentally sound" measures, while recklessly claiming that malaria can be effectively controlled without the use of DDT and other insecticides; a new international initiative does precisely that very thing (Roberts and Tren 2011).

How can this record of zealotry be explained? Fighting the green fight may give a sense of meaning to those who embrace environmentalism as a pseudo-religion; financial stakes of other stakeholders may also be a factor, but more unsavory elements cannot be dismissed. As Roger Bate, co-author of *The Excellent Powder: DDT's Political and Scientific History*, notes, some of the actors were concerned about overpopulation and therefore "actively opposed DDT use because of its life-saving capability" (Bate 2010). One of the founders of the Club of

Rome, noting that the virtual elimination of malaria in Guyana coincided with a doubling of the birth rate, specified that his "chief quarrel with DDT in hindsight is that it has greatly added to the population problem" (Zubrin 2012).

DDT vs. the Pill

Here, with this view of humans as polluters in mind, a word might be said about artificial contraception, particularly as Carson cited an expert who claimed that DDT was a "chemical carcinogen." This too is false, but the contrast with the birth control pill—an actual chemical carcinogen—is worthy of elaboration.

Though it is not widely advertised, the steroids taken by more than 100 million women around the world to prevent pregnancy—oral contraceptives—are known human carcinogens, according to the International Agency for Research on Cancer. In 2006, the Mayo Clinic published an important meta-analysis that found a statistically significant association between use of oral contraceptives and pre-menopausal breast cancer; specifically, it concluded that a woman who takes the pill before her first full-term pregnancy stands a 44 percent greater chance of contracting breast cancer prior to menopause, compared with those who do not take it before giving birth (Kahlenborn et al. 2006). Taking the pill for 4 of more years prior to first full-term pregnancy is even more risky (52 percent).

Furthermore, there are also decades of scientific findings demonstrating that its active ingredient (EE2) along with other estrogens "cause widespread damage in the aquatic environment by disrupting endocrine systems in wildlife" (Owen and Jobling 2012). Water treatment plants are simply unable to break down these hormones, leading to serious adverse impacts on aquatic life, including diminished capacity for reproduction; one disturbing byproduct is the phenomenon known as "intersex fish," in which eggs develop in the testes of male fish.

To take one recent example, University of Colorado scientists found that of the 123 fish they had caught at a nearby mountain stream for research purposes, "101 were female, 12 were male and 10 were strange 'intersex' fish with male and female features;" this constituted, for one of the biologists on the research team, "the first thing that I've seen as a scientist that really scared me" (Laugesen 2007). Though this phenomenon has been observed for three decades, official responses have been sluggish at best (Owen and Jobling 2012).

Elevated estrogen levels in the water supply may well contribute to prostate cancer in men; a significant correlation, at any rate, between use of the pill and prostate cancer incidence has been established. It would be premature to assign causation, but the significant association surfaced—independently of wealth—in each of the 88 countries in which it was put to the test (Margel and Fleshner 2011).

Overall, then, the contrast could not be more unmistakable: for decades, authorities have shuddered at the thought of utilizing innocuous chemicals such as DDT for philanthropic purposes of vector control, whereas authorities have adopted studied silence about the environmental and carcinogenic impact of *artificial* contraception, even though that has meant making peace with harming women and the environment. The pill, called upon to dilute the burden of maternal mortality, does nothing to rescue any imperiled life, even as it causes cancer; meanwhile, the life-saving pesticide that poses no threat to human health or the environment is willfully abandoned. In each case, human life is the casualty. This is not, of course, a hallmark of humanism or philanthropy.

To condemn DDT but condone the pill is at least to verge on countenancing misanthropy and environmental indifferentism. Although global health policy is heavily tilted in that direction (anti-DDT, pro-pill), true *philanthropists* would resolutely place the human person—and his natural human ecology—at the center of their assessment of the promise and the perils of these tools.

It is evident that the following broadly incontrovertible facts have not guided health policy or the prevailing approach to human and natural ecology: the pill harms the environment. DDT in the quantity necessary for malaria control does not. The pill causes cancer; DDT does not. DDT saves lives; the pill does not.

The inability to say what is manifestly so or not so, Romano Guardini (a mentor to Ratzinger) perceptively wrote nearly fifty years ago, is "the most hideous manifestation of tyranny" (Guardini 1998, 20). Those who obscure the truth are doing nothing less than "depriving man of his humanity;" actually realizing that, Guardini further notes, would utterly crush them. This explains why the most germane truths remain buried: one does not part with one's w*eltanschauung*—one's particular philosophy or view of life—without great cost and disorientation.

It is all too easy to get distracted by the microscopic elements of debates about the effectiveness of a particular preventive tool for a particular population in a particular context; the manifest failures we have reviewed, however, point to something broader and enable us to see the forest for the trees. The problem lies in the fact that global health policy has amounted to the projection of the prevailing w*eltanschauung* which fails to respect the human ecology, while claiming to be humanistic and philanthropic. Its low regard for man, and for the moral habitat needed for man to flourish, is at the heart of policies that have had such disastrous results.

The remedy must therefore be found in a philosophical shift that embraces the essential components of a human ecology, namely the recognition of the primacy of man and respect for the moral principles necessary for his flourishing. This would necessarily involve a repudiation of the utilitarian ethic and an increased appreciation for objective moral norms.

That is obviously a challenging program, particularly since talk of morality tends to grate on many modern ears. Discarding it, however, amounts to regression rather than progress. The crux of the matter, as Joseph Ratzinger pinpointed, is that "morality is not man's prison but rather the Divine Element in him;" it "is not some special burden for Christians: it is the defense of man against the attempt to abolish him" (Ratzinger 2010, 42, 44).

The only logical antidote to the toxic prevailing ethos, therefore, is "non-conformism;" Pope Benedict XVI indicated that what is needed above all is people with "an unwillingness to submit" themselves to the logic or fashions of the day (Ratzinger 2005). Though he was speaking explicitly about spiritual renewal, the applicability to public-health policy is apparent: the only reason non-conformity is needed in the public-health arena is precisely because this will protect mankind from the scourges that have exacted such a great human toll.

NOTES

1 The epidemiological trends mentioned in this section—examples of success and failure in curbing HIV transmission—are described in detail in Hanley and de Irala (2010).

2 For further details, see Hanley and de Irala (2010, 30–34).

References

Abraham, Curtis. 2009. UNAIDS and the myth of condoms' efficacy against AIDS. *East African*, February 7.

Allen, Arthur. 2002. Sex change. *New Republic*, May 27. http://www.newrepublic.com/article/sex-change.

Allen, T., and S. Heald. 2004. HIV/AIDS policy in Africa: What has worked in Uganda and what has failed in Botswana? *Journal of International Development* 16: 1141–1154.

Bate, Roger. 2010. The excellent powder. *American*, April 21. http://www.american.com/archive/2010/april/the-excellent-powder/article_print.

Benedict XVI, Pope. 2009. *Caritas in veritate, on integral human development in charity and truth*. http://w2.vatican.va/content/benedict-xvi/en/encyclicals/documents/hf_ben-xvi_enc_20090629_caritas-in-veritate.html.

Daily Mail. 2012. Catholic Melinda Gates reveals plans to put contraception "on the global agenda" and make it her primary public health priority. *Daily Mail*, May 7. http://www.dailymail.co.uk/news/article-2140911/Catholic-Melinda-Gates-reveals-contraception-primary-public-health-priority.html.

Dalrymple, Theodore. 2006. *Romancing opiates*. New York: Encounter Books.

Dalrymple, Theodore. 2011. Why has Britain turned into a giant rubbish bin? *The Telegraph*, July 16.

Daniels, Anthony. 2001. Morality for solipsists. *New Criterion*, February. http://www.newcriterion.com/articlepdf.cfm/morality-daniels-2243.

Eberstadt, Nicolas. 2012. The Islamic world's quiet revolution. *Foreign Policy*, March 9. http://foreignpolicy.com/2012/03/09/the-islamic-worlds-quiet-revolution/.

Fauci, Anthony S. 2009. A three-in-one policy cocktail for fighting the HIV pandemic. *Washington Post*, April 16.

Fisher, Anthony. 2009. HIV and condoms within marriage. *Communio* 36: 329–59.

Green, Edward C. 2011. *Broken promises: How the AIDS establishment has betrayed the developing world*. Walnut Creek, CA: Left Coast Press.

Goldberg, Michelle. 2012. Melinda Gates' new crusade: Investing billions in women's health. *Newsweek*, May 7. http://www.newsweek.com/melinda-gates-new-crusade-investing-billions-wom ens-health-64965.

Guardini, Romano. 1998. *Learning the virtues that lead you to god*. Manchester, NH: Sofia Institute Press.

Halperin, D.T., O. Mugurungi, T.B. Hallett, B. Muchini, B. Campbell, T. Magure, C. Benedikt, and S. Gregson. 2011. A surprising prevention success: Why did the HIV epidemic decline in Zimbabwe? *PLoS Medicine* 8(2): e1000414. http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1000414.

Hanley, Matthew, and Jokin de Irala. 2010. *Affirming love, avoiding AIDS: What Africa can teach the West*. Philadelphia, PA: The National Catholic Bioethics Center.

Hastings, G., M. de Andrade, and C. Moodie. 2012. Tobacco harm reduction: The devil is in the deployment. *British Medical Journal* 345: e8412. http://www.bmj.com/content/345/bmj.e8412.

Hearst, Norman, and Sanny Chen. 2004. Condom promotion for AIDS prevention in the developing world: Is it working? *Studies in Family Planning* 35: 39–47.

Hearst, N., A. Ruark, E.S. Hudes, J. Goldsmith, and E.C. Green. 2013. Demographic and health surveys indicate limited impact of condoms and HIV testing in four African countries. *African Journal of AIDS Research* 12(1): 9–15.

John Paul II, Pope. 1980. Interpreting the concept of concupiscence. General audience, October 8. *L'Osservatore Romano* (English), October 13, 1980, 7. https://www.ewtn.com/library/PAPALDOC/jp2tb42.htm.

John Paul II, Pope. 1991. *Centesimus annus, On the Hundreth Anniversary of* Rerum novarum. http://w2.vatican.va/content/john-paul-ii/en/encyclicals/documents/hf_jp-ii_enc_01051991_centesimus-annus.html.

John Paul II, Pope. 1993. *Veritatis splendor*. http://w2.vatican.va/content/john-paul-ii/en/encyclicals/documents/hf_jp-ii_enc_06081993_veritatis-splendor.html.

Kahlenborn, C., F. Modugno, D.M. Potter, and W.B. Severs. 2006. Oral contraceptive use as a risk factor for pre-menopausal breast cancer: A meta-analysis. *Mayo Clinic Proceedings* 81(10): 1290–1302. http://polycarp.org/mayo_clinic_article_english_2008.pdf.

Laugesen, Wayne. 2007. Contracepting the environment. *National Catholic Register*, July 10.
Leclerc-Madlala, Suzanne. 2002. Prevention means more than condoms. *Mail and Guardian*, October 4.
Low-Beer, Daniel. 2003. Going face to face with AIDS: This is a routinely avoidable disease. *Financial Times*, November 28.
Margel, D., and N.E. Fleshner. 2011. Oral contraceptive use is associated with prostate cancer: An ecological study. *BMJ Open* 1: e000311. http://bmjopen.bmj.com/content/1/2/e000311.full.
McNeil, Donald G., Jr. 2014. Advocating pill, US signals shift to prevent AIDS. *New York Times*. May 14.
Michael, M., L. King, L. Guo, M. McKee, E. Richardson, and D. Stuckler. 2013. The mystery of missing female children in the Caucasus: An analysis of sex ratios by birth order. *International Perspectives on Sexual and Reproductive Health* 39(2): 97–102.
Miller, H.I., and G. Conko. 2012. Rachel Carson's deadly fantasies. *Forbes*, September 5. http://www.forbes.com/sites/henrymiller/2012/09/05/rachel-carsons-deadly-fantasies/2/.
Mulcaire-Jones, G., and R. Scanlon. 2011. Safe passages pro-life response to the tragedy of maternal deaths. *Linacre Quarterly* 78(2): 202–210.
Museveni, Yoweri. 1991. AIDS and its impact on the health and social service and infrastructure in developing countries. Speech by the president of Uganda at the International Conference on AIDS in Florence, Italy, June 16.
Owen, R., and S. Jobling. 2012. Environmental science: The hidden costs of flexible fertility. *Nature* 485: 441.
Pascal, Blaise. 1941. *Pensées*. New York: Random House.
Pisani, Elizabeth. 2008. *The wisdom of whores: Bureaucrats, brothels and the business of AIDS*. London/Granta/New York: Norton.
Ratzinger, Joseph Cardinal. 1988. Consumer materialism and Christian hope. Lecture delivered at Cambridge University. http://www.catholiceducation.org/articles/politics/pg0143.htm.
Ratzinger, Joseph Cardinal. 2005. Cardinal Ratzinger on Europe's crisis of culture. Lecture delivered at Rome, April 1. http://www.catholiceducation.org/articles/politics/pg0143.htm.
Ratzinger, Joseph Cardinal. 2010. *A turning point for Europe?* San Francisco: Ignatius Press.
Roberts, D., and R. Tren. 2011. International advocacy against DDT and other public health insecticides for malaria control. *Research and Reports in Tropical Medicine* 2: 23–30.
Sgreccia, Elio. 2012. *Personalist bioethics: Foundations and applications*. Translated by John A. Di Camillo and Michael J. Miller. Philadelphia: The National Catholic Bioethics Center.
Soloviev, Vladimir. 1996. *The crisis of Western philosophy: Against the positivists*. Hudson, NY: Lindisfarne Press.
Tren, R., and D. Roberts. 2011. DDT paradox. *Environmental Health Perspectives* 119(10): a423–a424. http://ehp.niehs.nih.gov/1103957/.
Tren, R., R.N. Kamwi, and A. Attaran. 2012. The UN is premature in trying to ban DDT for malaria control. *British Medical Journal* 345: e6801. http://www.bmj.com/content/345/bmj.e6801.
Wojtyla, Karol. 1993. *Love and responsibility*. San Francisco: Ignatius Press.
Zubrin, Robert. 2012. The truth about DDT and *Silent Spring*. *New Atlantis*, September 27. http://www.thenewatlantis.com/publications/the-truth-about-ddt-and-silent-spring.

Biographical Note

Matthew Hanley M.P.H., travelled frequently to Africa while working as a technical advisor for Catholic Relief Services. More recently, he has been a senior fellow with the National Catholic Bioethics Center.