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Developing Destruction: the Arms Industry, Catholic Scientists, and Morality

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**DEVELOPING DESTRUCTION: THE ARMS INDUSTRY, CATHOLIC
SCIENTISTS, AND MORALITY**

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Drew Jones, May 1, 2009

I. Introduction: Why This Question?

The armaments factory worker

I cannot influence the fate of the globe.
Do I start wars? How can I know
whether I'm for or against?
No, I don't sin.
It worries me not to have influence,
that it is not I who sin.
I only turn screws, weld together
parts of destruction,
never grasping the whole,
or the human lot.

I could do otherwise (would parts be left out?)
contributing then to sanctified toil
which no one would blot out in action
or belie in speech.
Though what I create is all wrong,
the world's evil is none of my doing.
But is that enough?

-Pope John Paul II¹

This poem grasps at the serious problem of conscience which confronts a simple laborer who is building something, a weapon. Any weapon, whether sword or atomic warhead, cannot be thought of as a morally neutral object, as most weapons are created with the intent to be used in war. People working in the arms industry, like the subject of the poem, expose themselves to the possibility that the creative energy of their mind and the work of their hands may make the world a more dangerous and less peaceful place. In the worst of circumstances, it is a distinct possibility that the weapons which they have assisted in creating and constructing will take the life of another person or, in the gravest

¹ Karol Wojtyła. *Easter Vigil and Other Poems*. Translated by Jerzy Peterkiewicz. Random House: New York. 1979.

of imaginable situations, vaporize a whole city and ignite a fuse which would end civilization.

As the poem indicates, the worker is not in a position of great power, and neither formulates policy nor makes the decision to go to war, nor will the subject even necessarily pull a trigger or enter a launch command. The puzzling question, “How can I know whether I’m for or against?” is complicated. For or against what exactly? It could indicate an uncertainty about how the weapon being manufactured will be used, and who it could be used against. There is another implication as well; the morality of the act is hazy, not absolutely wrong but not necessarily right either. The next line makes a sort of pronouncement of the definite morality, that the worker’s actions are not inherently sinful. Yet a problem remains in the mind of the speaker, to “turn screws, or weld together parts of destruction” may be allowing, helping, or resulting in another’s destructive rampage or far more problematically injure others or endanger their safety. Small actions such as working in this arms factory do not directly harm others, but to continue one’s job without thinking of the consequences is morally and ethically unacceptable.

The second stanza considers the problem of the laborer in more depth. What could be done to stop the production of arms? “I could do otherwise (would parts be left out?)” ponders two distinct issues. First, the worker’s conscience is troubled by laboring in an armaments factory, and might he just consider working somewhere else. The second issue, presented as a question, wonders if quitting would be an effective answer to a troubled conscience. This worker would no longer build weapons, but someone else

would fill that position and the grim reality of an ever growing stockpile of weapons would continue. As the poem explains, in both the first stanza and here again, the work itself is not sinful, very much the opposite. No one can diminish or condemn the worker's desire to earn a living, as work is a sacred and necessary aspect of life. However, this work, which happens to be in the armaments factory, retains its good nature but produces something which is evil. The poem ends with a simple line, a question which must linger in the mind of the subject and the reader, "But is that enough?"

A question similar to this has driven me to seek an answer to the question: is it moral for me, as a Christian and a Catholic specifically, to apply for and hopefully get an internship in the arms industry, or would to do so risk my involvement in sin? What lead me to this question? In high school I took a trip around California, south along the coast from San Francisco and across into the Mojave Desert and back through the central valley. On the northern end of the desert are China Lake Naval Air Weapons Station and the city of Ridgeview, which to me were places of surreal beauty and great mystery. Why does the navy need a facility in the desert and what do people do there? According to the website of the Naval Air Warfare Center Weapons Division, which works out of China Lake and Point Mugu, California, their primary function is "maintaining a center of excellence in weapons development for the Department of the Navy"², a role which relies on the employment of scientists and engineers. Several years later, as a chemistry major I looked on this website and found that paid internship programs were available in

² Naval Air Warfare Center, Weapons Division, *About The Weapons Division*.
<http://www.navair.navy.mil/nawcwg/nawcwg/about/index.html>

several areas in science, engineering, and business. At first I was excited, and then, like in the mind of the worker in the poem, the question arose, “But is that enough?”

Is it enough to assume that as an intern my work would be doing very little to advance or support the vast machinery of America’s military? Is it enough that I was just curious to see what the center does and would be unwilling to have a career in the arms industry? Due to these unknowns I sought the advice of others and really began looking at what the Church had to say about the not so peaceful world which we live in. My decision came down to not understanding enough to have properly formed my conscience on the matter, and in my uncertainty I decided to not even apply.

However, this decision was not final or absolute. I am sure that Catholics have worked in the arms industry before, and that some still do with clean consciences, and so I wish to consider the moral and ethical dilemma which faces Catholic scientists and engineers who work in the arms industry. If “I only turn screws, weld together and parts of destruction” or maybe synthesize a new explosive or calculate the drag of an open bomb bay door, is it enough to simply go about my work “never grasping the whole, or the human lot.”

My incompletely formed conscience cannot be a justification or excuse for my decision to apply, for an uninformed conscience cannot be clear or certain. Furthermore, leaving it uninformed is a flight from making a fully educated decision and a failure to understand the true consequences of the arms industry in the modern world, and its impact on the possible practice of my discipline. The object of my thesis then is this, to

adjudicate the morality and ethical impact of working in the arms industry, both specifically in the United States at the current moment and more generally.

I will begin by taking into consideration the many sources of moral insight available to Catholics on warfare and arms, especially those since the Second Vatican council, including official Church documents, bishop's letters, diplomatic statements from the Holy See, Papal speeches, and public personal letters. Subsequently, considering these sources, I wish to examine closely the current and historical frameworks which have informed them in order to understand the Catholic tradition as a more unified whole.

After comprehending what the Church says about war and arms in a general sense, I will closely examine a few specific statements directed towards Catholic men and women working in the defense industry, and again attempt to recognize the moral and ethical ideas which underpin them. Having formed a coherent picture of Catholic moral teaching I will explain and defend my solution to the question which I have sought to answer. Lastly, I will make positive recommendations about what both Catholic and non-Catholic scientists, engineers, and others ought to be doing with their professional expertise and skills with regard to the arms industry.

II. The Church's Teachings and Statements on Weapons since John XXIII

If we are to understand the morality of working in the arms industry, we must first examine the morality of arms themselves. We may conceive of a weapon that can be used in a way consistent with the principles of just war, which could be used to destroy a target of military or industrial significance without too significantly endangering whole civilian populations. On the other hand, we can envision a weapon with such destructive power that its negative effects would always be disproportionate to the strategic advantage gained, and whose use would most certainly kill or injure large numbers of civilians. The first weapon, because it has the potential to be used justly, is not inherently wrong to develop, design, or produce. However, the second weapon is impossible to use justly, and therefore cannot be devised or created without in some way participating in the evil which its use would entail.

Before the Twentieth Century humanity may have envisioned creating weapons of the second type, but the ability to do so was out of reach. However, advances in theoretical and applied sciences allowed such weapons to leave the confines of the imagination and become realized and tangible instruments of death and destruction. The consequences of this development, particularly in regards to nuclear arms, were a heightened sense of fear and suspicion among the nations of the world.

The Church which had spoken before about war, peace, arms, and justice did not remain silent with relation to these matters. Through her councils, popes, bishops, and diplomatic statements, the Church called her members and all people of good will to see the grave evil and injustice of a global order dominated by hostility and mistrust,

increasing stockpiles of armaments, and indifference to the human suffering. The papacy of John the Twenty-third was concurrent with the solidification of the Arms Race between the United States, Soviet Union, and their allies. During April of 1963, John XXIII promulgated *Pacem in Terris* as a response to the international social and political situation.³ The encyclical addresses the immorality and injustice of the Cold War and how authentic peace should and must be built, despite the challenge of immense antagonism between peoples and nations.

Pacem in Terris begins by proclaiming the ordered purpose of the universe:

That a marvelous order predominates in the world of living beings and in the forces of nature, is the plain lesson which the progress of modern research and the discoveries of technology teach us. And it is part of the greatness of man that he can appreciate that order, and devise the means for harnessing those forces for his own benefit.

But what emerges first and foremost from the progress of scientific knowledge and the inventions of technology is the infinite greatness of God Himself, who created both man and the universe. Yes; out of nothing He made all things, and filled them with the fullness of His own wisdom and goodness.⁴

It is here, in the introductory paragraphs of *Pacem in Terris*, that John XXIII establishes the need to see progress and technological advances in their subordinate position to the common good, natural law, and the teachings of the Church. The developments of

³ John XXIII, *Pacem in Terris* (Rome: 1963), 172.

⁴ *Ibid.* 2-3.

science and technology therefore cannot be ends in and of themselves; rather they must serve more important purposes. The first among these other purposes is to call our attention to the magnificent complexity and organization of nature. It is our ability to do so that reminds us of our dignity and greatness within creation. Mindful of this most basic fact, we should quickly understand one meaning and purpose of technology, our own advancement. In context, this particular message is clearly a first gentle encouragement to use technology for the good of humanity rather than its quick and certain destruction.

The second paragraph goes on to indicate the greatest purpose of technology and humanity itself, to know and love God. This idea is radically opposed to the atheism integral to Soviet communism and secularism, which would seek to abolish the truth so straightforwardly established before. However, what does this have to do with the morality of weapons and the effort to obtain peace? Catholic teachings about any subject must be firmly grounded in a coherent and consistent understanding of God, humanity, and creation for the teachings to be valid and meaningful to those who receive and implement them.

Imagine if one were to attempt to teach about peace with a far different foundation or understanding of humanity. If the physical world is not essentially ordered, but rather a continuous chaotic struggle, there is no initial indication of why peace should be preferred over war. For example, if one's foundation is radical social Darwinism, war could simply be seen as humans attempting to gain the things they need to be more successful at passing on their superior traits. However, from a Catholic perspective the

conclusion is flawed because it ignores obvious aspects of the human experience as cooperative and ordered.

Therefore, by asserting that the world is created in an orderly fashion for the good of humanity certain conclusions about peace and other moral questions will rationally follow. John XXIII explains that human interaction should reflect the order found in nature and additionally ought to be governed by the law of human conscience.⁵ When this does occur, and humans interact according to the dictates of their consciences, they will end up acting in a manner conducive to the common good.⁶ This is true in every relational sphere; from interactions within a family to the international affairs of independent states. If individuals and states accept and follow this reasoning, peaceful relations are the natural consequence.

John XXIII then goes on to address numerous matters pertaining to peace, either those situations which threaten and impede it or those circumstances that promote peace and allow it to thrive. Individuals' inherent rights to make a living, worship as they choose, assemble and associate, immigrate, and participate in the political life of their nation must be upheld.⁷ Governments must create laws and policies which are consistent with natural law and encourage to the common good.⁸ This responsibility extends beyond the borders of individual nations, encompassing how states interact with one another.⁹ States, and their leaders, cannot consider their individual self interest any more than individuals may, and therefore must cooperate to further the common good of other

⁵ Ibid. 5-6

⁶ Ibid. 7

⁷ Ibid. 14-27

⁸ Ibid. 51&53

⁹ Ibid. 80

nations.¹⁰ At a most basic level this entails mutual respect and trust between nations and their leaders and a willingness to promote justice with respect to nations' rights and duties.¹¹ Some specific responsibilities of nations include: protecting minorities and refugees, creating institutions that allow for greater cooperation, and fostering international trade.¹² Efforts along these lines were already taking place, for example in the United Nations, which John XXIII commends and affirms.¹³

However, seeing such positive progress does not allow him to ignore the urgency and gravity of the Cold War and the Arms Race associated with it. The immense resources devoted to developing and producing arms in industrialized nations prevents greater and more rapid international cooperation for several reasons. An obvious consequence of such large expenditures on arms is an increased burden for those living in industrialized nations, as resources that could be used for other more productive ends are diverted towards building arms. Another effect is that these countries have a reduced ability to assist developing nations in achieving development themselves.¹⁴ Additionally, not only were fewer resources possibly available for developing nations, receiving those resources was contingent on a nation's cooperation with the ideologies and intentions of the donor nation. For example, if a nation needed financial backing or engineering expertise to build a major public works project, assistance would be given only if that nation would agree to host a military installation. If peace is promoted through cooperation based on shared goals and objectives, such a situation cannot be seen as

¹⁰ Ibid. 86

¹¹ Ibid. 91

¹² Ibid. 94-96, 103-106, 98-99, & 101-102

¹³ Ibid. 107-108

¹⁴ Ibid. 109

positively affecting peace as it is not sincere cooperation, but rather self-interested transaction.

The problem of misdirected resources was exacerbated by nations concentrating unnecessarily on security through keeping pace with an adversary's capability.¹⁵ This mentality was evident in talk of missile gaps and the Space Race, as whatever the Soviet Union did the United States had to do and vice versa. Any shortcoming was viewed as a failure to maintain a nation's ability to defend itself against an impending attack. This mentality did not belong exclusively to the two superpowers, but was also adopted by any nation which felt threatened by the mere prospect of aggression. Lasting peace cannot be achieved if it relies on maintaining a precarious equilibrium of destructive ability because any shift causes the temporary calm to disappear.

The constant competition to maintain a sense of dominance is harmful not only to a nation's corporate safety or its government, but individuals as well.

Consequently people are living in the grip of constant fear. They are afraid that at any moment the impending storm may break upon them with horrific violence. And they have good reasons for their fear, for there is certainly no lack of such weapons. While it is difficult to believe that anyone would dare to assume responsibility for initiating the appalling slaughter and destruction that war would bring in its wake, there is no denying that the conflagration could be started by some chance and unforeseen circumstance.¹⁶

¹⁵ Ibid. 110

¹⁶ Ibid. 111

Stockpiles of nuclear weapons pose numerous and different threats to humanities shared existence. Their use, testing, development, and accumulation constitute attacks of varying severity on human life and dignity.

The grave consequence of using such arms in either a limited assault or all-out strike is the most apparent hazard. The destructive capacity of even a small warhead is enormous when compared to conventional explosive munitions. Destructive capacity alone does not accurately describe the human deaths and suffering which such a weapon's use would cause. Equivalent amounts of conventional explosives cannot atomize someone standing outside at the time of the blast, cause homes to instantaneously be set ablaze, produce radiation burns and sickness, or increase cancer rates in people for decades afterward. These terrible consequences alone should deter any nation from manufacturing or possessing nuclear weapons.

The testing, development, and production of nuclear weapons also endangers human life and health. Atmospheric testing releases large amounts of radioisotopes which can increase the frequency of rare cancers in downwind communities and can cause lasting environmental contamination even in remote testing locations.

Development and production of nuclear weapons, and the materials and parts which go into building them can also have similar consequences. Negligent and accidental releases of radioactive material can occur, leading to similarly increased cancer rates for workers, nearby residents, and anyone using water contaminated by runoff. The side-effects of creating nuclear weapons, while not as catastrophic as their use, are an injustice to those

affected because they must suffer unnecessarily and unfairly to maintain a false sense of national security.

The Arms Race itself, and the fear and uncertainty which it creates, present another violation of human dignity. All people possess a right to live with some level of certainty and security about their future interests, but the continued preparation and buildup of nuclear weapons weakens this fundamental ability. For example, a husband and wife should be able to provide for themselves and their children a safe place to live and food on the table every day. How can anyone assure these necessary things if a nuclear first-strike might come at any moment? A family would need to live in a constant state of alert and preparation for that possibility; living in a reinforced bunker with adequate supplies to survive a nuclear winter. No family or individual could reasonably be expected to prepare to that degree when a much more commonsense approach exists, disarmament.

John XXIII asserts that this enormous dilemma must be solved by mutual arms reductions and a comprehensive ban on nuclear weapons.¹⁷ This of course could only be accomplished if nations were able to relate honestly, openly, and fairly, thereby creating reciprocally binding and meaningful agreements. However, disarmament requires more than treaties:

Everyone, however, must realize that, unless this process of disarmament be thoroughgoing and complete, and reach men's very souls, it is impossible to stop the arms race, or to reduce armaments, or—and this is the main thing—

¹⁷ Ibid. 112

ultimately to abolish them entirely. Everyone must sincerely co-operate in the effort to banish fear and the anxious expectation of war from men's minds.¹⁸

Weapons in and of themselves are not the essential problem, but merely symptoms of a greater crisis. The true crisis is humanity's willingness to wage war. For if no nation, government, or person had a desire to ever wage war creating or possessing arms would be pointless. Therefore, disarmament and lasting peace can only be accomplished by abolishing war as a viable option in the minds of individuals and the broader perception of societies.

However, simply because weapons are not the root cause of the problem does not mean that they can be ignored in pursuing a solution. Disarmament requires that nations' stockpiles and war waging capability will be reduced, and far fewer or no new weapons built. Consequently, countries that have built-up the industrial and military infrastructure required for designing, testing, manufacturing, and stockpiling arms will need to be reduced as well.

As explained before in the encyclical, many resources are wasted on the accumulation of arms, requiring some nations to invest in a worthless undertaking and denying others the resources they need to thrive. Accordingly, the transition away from arms production will eventually result in a greater availability of talent, capital, and assets for peaceful purposes. The vast arms caches cannot be overlooked either, but should instead find new non-aggressive uses. For instance, dismantled arms could be repurposed for energy production, mining, construction, and manufacturing.

¹⁸ Ibid. 113

The principle message of *Pacem in Terris* is that even in a world stubbornly fixed on the threat of war and preparing for it; humanity truly desires and needs enduring peace. Achieving this hoped for peace will require systematic transformations which are straightforward, but not without difficulty. Agreements and treaties will certainly be required to reduce and hopefully eliminate the arms reserves of rival nations. Yet, the greatest challenge that must be overcome to end the Cold War and related Arms Race will not be eliminating nuclear arms, but rather producing an international order in which mutual trust will allow peace to take root and flourish.

The same topics addressed in *Pacem in Terris* were also addressed by the Second Vatican Council, which was officially convened in October of 1963 by Pope John XXIII and closed in December of 1965 by Pope Paul VI.¹⁹ *Gaudium et Spes*, The Pastoral Constitution on the Church in the Modern World, set out to explain the Church's perspective on the modern world and her relation to it.²⁰ The first part of the document sets out much like *Pacem in Terris*, expressing the Church's foundational understanding of man, society, and man's purpose in God's divine plan.²¹ The second part of the document then applies this knowledge to several pressing and concrete problems facing the Church and world. The situations which the document consider include the family and marriage, the development of culture, economic development, politics, and lastly the advance of peace and establishment of an international community.²²

¹⁹ Edward P. Hahnenberg, *A Concise Guide to the Documents of Vatican II* (Cincinnati: St. Anthony Messenger Press, 2007), 8.

²⁰ The Second Vatican Council, *Gaudium et Spes* (Rome: 1965), 2.

²¹ *Ibid.* 11.

²² Hahnenberg, *A Concise Guide to the Documents of Vatican II*, 57.

Not surprisingly, this final chapter articulates many points similar to those found in *Pacem in Terris*. As before, “Peace is not merely the absence of war; nor can it be reduced solely to the maintenance of a balance of power between enemies; nor is it brought about by dictatorship.”²³ Again, peace is not acquired simply at a national level, but must be fostered in the lives of individuals in order become real and lasting. The language of *Gaudium et Spes* adds a sense of urgency to this mission by calling Christian believers to be peacemakers, led forth by Christ.²⁴

Gaudium et Spes also differs from *Pacem in Terris* through the use of much tougher and more forward language about “scientific weapons”, which in context implies nuclear arms. The Council considers war in the atomic age a new, distinct, and more terrible possibility than any other previous war.²⁵ “The horror and perversity of war is immensely magnified by the addition of scientific weapons. For acts of war involving these weapons can inflict massive and indiscriminate destruction, thus going far beyond the bounds of legitimate defense.”²⁶ This change is naturally not without consequence, and in the framework of just war theory, scientific weapons are illicit for two reasons.

The first is mentioned directly in the quote, that nuclear arms cause *indiscriminate* destruction. What exactly does this term mean? Just war theory expresses a difference between combatants and civilians, and what actions can be taken against these two categories during wartime. In a just war it is acceptable to target enemy soldiers, bases, and even weapons depots, because immobilizing these limits the duration of war and

²³ The Second Vatican Council, *Gaudium et Spes*, 78.

²⁴ *Ibid.* 77.

²⁵ *Ibid.* 79.

²⁶ *Ibid.* 80.

helps bring about its conclusion so that peace may again flourish. On the other hand, targeting civilian populations is unjust because they are not immediately involved in waging war, and specifically targeting them does nothing to bring a war closer to its conclusion. In fact, one could even claim that doing so may motivate combatants to fight longer and with greater intensity, as they feel the direct threat to their families, community, and nation. The use of nuclear arms violates the principle of discrimination because their effects cannot be limited to combatants.

For example, if it was my objective to destroy munitions factories in the industrial part of a large city using a nuclear warhead I would most likely succeed. However, my use of that warhead would also likely destroy surrounding homes and businesses, and the people in them, not involved with arms production. Furthermore, the long-lived fallout would cause radiation poisoning immediately and result in other damaging effects like cancer and birth defects for many decades, long after the war has ended. Clearly, these dreadful consequences cause unacceptable and undeserved harm to civilian populations; incompatible with just war theory.

The second aspect of nuclear weapons rendering them illicit is their immense destructive capability. In the language of just war theory, an attack which causes more damage than necessary to achieve a desired and acceptable result is *disproportionate*. On its face, this idea may appear quite utilitarian. For example, I may kill x number of civilians, as long as in doing so I can expect to save more than x number of lives. However, this is not the case. The justification for killing innocents is accounted for by

the principle of double effect. As is explained by Thomas Aquinas in his *Summa*

Theologica:

... Now moral acts take their species according to what is intended, and not according to what is beside the intention, since this is accidental as explained above. Accordingly the act of self-defense may have two effects, one is the saving of one's life, the other is the slaying of the aggressor.²⁷

In war of self-defense the intent is clear, to end the war and establish lasting peace. A side effect of doing so may be innocent deaths, but that was not the intent. Aquinas later says in the same article:

...though proceeding from a good intention, an act may be rendered unlawful, if it be out of proportion to the end. Wherefore if a man, in self-defense, uses more than necessary violence, it will be unlawful: whereas if he repel force with moderation his defense will be lawful...²⁸

This point is important. In a just war, the right course of action is one which accomplishes the objective with a minimum of violence. Doing otherwise is wrong because the injury done overshadows the benefit of accomplishing that which is intended.

Returning to my earlier example; not only is it wrong to use my nuclear warhead to destroy munitions factories because the attack is not selective enough, but also because the advantage gained by doing so is outweighed by the death of numerous innocent civilians. Could have the same mission been completed using less force and without

²⁷ Fathers of the English Dominican Province, trans., *Summa Theologica, Vol. II* (New York: Benzinger Brothers, Inc., 1947), 1471.

²⁸ *Ibid*, 1471.

taking so many lives? The answer is most certainly yes. If I possess the ability to build and utilize a nuclear warhead chances are I already have conventional arms more than capable of destroying the munitions factories without annihilating the surrounding area and endangering so many lives.

Gaudium et Spes explicitly denounces the use of any weapon whose use could be considered gravely indiscriminate and disproportionate: “Any act of war aimed indiscriminately at the destruction of entire cities of extensive areas along with their population is a crime against God and man himself. It merits unequivocal and unhesitating condemnation.”²⁹ This statement rules out any conceivable use of strategic nuclear arms, especially those applications which would specifically target urban areas, even if military facilities existed in or near these cities.

Gaudium et Spes, much like *Pacem in Terris* before it, also criticizes the Arms Race more generally as a practice which does not result in peace, but the ever greater threat of war:

Whatever be the facts about this method of deterrence [the capability of swift reprisal], men should be convinced that the arms race in which an already considerable number of countries are engaged is not a safe way to preserve a steady peace, nor is the so-called balance resulting from this race a sure and authentic peace.³⁰

Modern scientific weapons, even if they are never used, are unjust in their very existence because they keep nations in a state of anticipation for war. As *Pacem in Terris* before,

²⁹ The Second Vatican Council, *Gaudium et Spes*, 80.

³⁰ *Ibid.* 81.

Gaudium et Spes emphasizes the connection between insecurity and the buildup of arms, as well as the threat spending on arms poses to economic and social development in less affluent nations.³¹ The remainder of *Gaudium et Spes* focuses on efforts to prevent the spread of a mentality of arms based deterrence and the work still required while working for enduring peace, including the formation of a stronger international community and endeavors intended to share the wealth and expertise of developed nations with those still developing.³²

The most significant difference to note between *Pacem in Terris* and the chapter of *Gaudium et Spes* concerning peace is the distinct change in tone. John XXIII's encyclical has a pastoral and personal character, which invites us to consider the human suffering caused by nuclear weapons and the Arms Race and encourages individuals and nations toward conversion to an attitude of peace and cooperation. In contrast, The Second Vatican Council's pastoral constitution unambiguously declares the wrong of ever using nuclear arms indiscriminately and disproportionately and firmly insists that believers cooperate with all people of good will in establishing and sustaining authentic peace.

The last document of significant length which I will consider with respect to the morality of arms themselves is "The Challenge of Peace: God's Promise and Our Response". Issued in May of 1983 by what was the National Conference of Catholic Bishops, the pastoral letter invites and challenges American Catholics to actively work

³¹ Ibid. 81.

³² Ibid. 82-90.

toward the avoidance of nuclear conflict and eventually to bring about the eradication of nuclear arms and to end the threat of nuclear warfare.³³

The letter consists of four major sections. The first part provides a brief summary of the historical and modern teachings of the Church on war and peace, with particular attention to scripture, the just war tradition, and pacifism.³⁴ The next section goes on to apply these principles in morally evaluating contemporary tactics and policies including nuclear deterrence and first-strike.³⁵ Part Three then provides several positive suggestions regarding policy changes which could be implemented in order to ease the threat of war and create a more peaceful international situation.³⁶ The final section concludes by concentrating on the pastoral implementation of the letter. In particular, it calls on the Catholic community to initiate efforts which will foster faithfulness to the teachings expressed before, and provides exhortations to specific groups like educators, youth, and politicians.³⁷

Part II is the most pertinent involving the morality of weapons. As before in both *Pacem in Terris* and *Gaudium et Spes*, there is a nearly singular focus on the somewhat new problem which nuclear weapons confront long-standing just war theory with.

However, *Challenge to Peace* claims that there is more left to be said about nuclear arms:

The nuclear age has been the theater of our existence for almost four decades; today it is being evaluated with a new perspective. For many the leaven of the

³³ National Conference of Catholic Bishops, *The Challenge of Peace: God's Promise and Our Response* (Washington D.C.: 1983) 4.

³⁴ *Ibid.* 5-121.

³⁵ *Ibid.* 122-199.

³⁶ *Ibid.* 200-273.

³⁷ *Ibid.* 274-339.

gospel and the light of the Holy Spirit create the decisive dimension of this new perspective.³⁸

This should not be interpreted as a break from the prior teaching of John XXIII or the Second Vatican Council. Rather, time has proven those teachings in a most profound way. Stockpiles of nuclear weapons have continued to expand, nations have remained in defensive postures, and all the while pressure for the Arms Race to cease has continued to grow more substantial and persistent.³⁹ However, the stockpiles now amassed possess the capability to entirely eradicate human civilization in its current form; a possibility which was not likely during the papacy of John XXIII. The change needed to address this new and pressing is summed up here:

Traditionally, the Church's moral teaching sought first to prevent war and then to limit its consequences if it occurred. Today the possibilities for placing political and moral limits on nuclear war are so minimal that the moral task...is prevention: as a people, we must refuse to legitimate the idea of nuclear war.⁴⁰

This statement departs only slightly from *Gaudium et Spes*, as it calls not only for the rejection of nuclear attacks on cities and policies of total war, but any nuclear warfare.

The reason for this change is apparent. The posture of nations in possession of nuclear arms is one of complete preparedness for quick and certain retaliation on a massive scale. Given the uninhibited nature of this revenge and its disturbing consequences, no use of nuclear weapons can be rationalized or legitimately considered.

³⁸ Ibid. 125.

³⁹ Ibid. 127-128.

⁴⁰ Ibid. 131.

However, this idea is the very paradox which lies at the heart of nuclear deterrence strategies and is not without implications as to the morality of arms:

Precisely because of the destructive nature of nuclear weapons, strategies have been developed which previous generations would have found unintelligible.

Today military preparations are undertaken on a vast and sophisticated scale, but the declared purpose is not to use the weapons produced. Threats are made which would be suicidal to implement.⁴¹

The Arms Race is a Sisyphean task, as moving the rock, that is building an ever larger stockpile, results in no progress, because as soon as the other side adds to its arsenal any temporary advantage disappears. Furthermore, any temporary advantage is pointless because it cannot be exploited without risking the lives and values which the advantage is imagined to protect. Accordingly from this perspective, nuclear arms are not immoral simply when used or when their cost constitutes an undue burden on a nation's citizens and denies valuable resources to the poor. Rather, the existence of nuclear arms cannot be justified or reasoned out. Consequently, they should not be designed, tested, manufactured, or stockpiled; doing so is positively absurd and unjustifiable.

The situation is illogical, and the only reasonable solution which will ultimately put an end to the absurdity is complete disarmament. Given this reasonable and certain conclusion, it would seem that nothing more needs to be said. The bishops' go on to consider the morality of specific atomic tactics and policies because, "...the danger of the situation is clear; but how to prevent the use of nuclear weapons, how to assess

⁴¹ Ibid. 136.

deterrence, and how to delineate moral responsibility in the nuclear age are less clearly seen or stated.”⁴² If this further reflection on the morality of specific limited use of nuclear weapons and policies of deterrence is required, then we cannot yet definitively say that nuclear weapons are intrinsically immoral in every case.

Challenge of Peace begins by deliberating more intensely about the morality of using nuclear arms. Much as *Gaudium et Spes* before, the bishops’ letter judges the morality of using nuclear weapons applying the principles of discrimination and proportionality.⁴³ As seen before, this naturally makes a strategy of total war unjust, as in such a conflict those principles are disposed of in order to devastate an enemy as quickly as possible. From the bishops’ perspective this appears to be the most likely scenario of nuclear exchange, and once again the evil of this policy is affirmed.⁴⁴ However, this does not address the implications, however remote, of a so called ‘limited’ nuclear conflict. In constructing an argument against ‘limited’ nuclear warfare, the bishops first choose to reiterate the wrong of targeting civilian populations for any reason, because discrimination between combatants and non-combatants is a foundational principle of just war theory.⁴⁵

Subsequently, first-strike policy is evaluated as a viable option, particularly with regard toward ensuring the security of Western Europe and NATO aligned countries. While the bishops recognize the deterrent value of refusing to state a no first-strike policy, they urge NATO to acknowledge the improbability of ‘limited’ nuclear exchange

⁴² Ibid. 138.

⁴³ Ibid. 144.

⁴⁴ Ibid. 144.

⁴⁵ Ibid. 147-149.

and the almost assured escalation to total war; recommending instead the implementation of a different non-nuclear strategy.⁴⁶ Nonetheless, "...the deterrence of a nuclear attack may require nuclear weapons for a time, even though their possession and deployment must be subject to rigid restrictions."⁴⁷ This statement evidently affirms the temporary necessity of nuclear arms; thus suggesting the possession of nuclear weapons cannot be seen as inherently evil and neither can the arms themselves.

Next, *Challenge of Peace* considers the possibility 'limited' nuclear warfare as an act of retribution as opposed to a first-strike. The analysis chooses to avoid complex and unresolved political and scientific issues relating to the logistics and consequences of 'limited' nuclear attack. Instead, the bishops decide to focus on the unresolved nature of these issues in the context of just war theory:

One of the criteria of the just-war tradition is a reasonable hope of success in bringing about justice and peace. We must ask whether such a reasonable hope can exist once nuclear weapons have been exchanged. The burden of proof remains on those who assert that meaningful limitation is possible.⁴⁸

Using nuclear weapons on even a limited scale could seriously threaten the lives, health, safety, and social and economic stability. Additionally, we cannot know for certain the severity and extent of these possible effects, and also cannot predict whether a 'limited' nuclear response will not rapidly escalate beyond a 'limited' scope. This unpredictability prevents policy makers and military leaders from realistically claiming that such nuclear

⁴⁶ Ibid. 152, 156.

⁴⁷ Ibid. 154.

⁴⁸ Ibid. 159.

strikes would bring us closer to peace, a precondition of attempting any action under the criteria of just war. Here, it would appear that there is no use for nuclear arms, and therefore no reason for possessing them other than the paradoxical reason discussed previously, deterrence.

“The moral challenge posed by nuclear weapons is not exhausted by an analysis of their possible uses. Much of the political and moral debate of the nuclear age has concerned the strategy of deterrence.”⁴⁹ Already mindful of the perils of deterrence, the bishops’ wish to consider with greater rigor the strategy’s morality, in order to provide us a higher degree of clarity on the issue. The reason for this clarification is not apparent as the problems of deterrence seem obvious, but in the time following Vatican II the issue was not fully resolved.⁵⁰ On the one hand, nuclear policy and increasing stockpiles of arms constantly endanger peace and constitute a wrong against humanity. On the other hand, deterrence effectively prevents the greater moral wrong of an actual nuclear attack from occurring.⁵¹ In the words of the bishops’:

“The possession of nuclear weapons, the continuing quantitative growth of the arms race, and the danger of nuclear proliferation all point to the grave danger of basing "peace of a sort" on deterrence. The other dimension is the independence and freedom of nations and entire peoples, including the need to protect smaller nations from threats to their independence and integrity.”⁵²

⁴⁹ Ibid. 162.

⁵⁰ Ibid. 169.

⁵¹ Ibid. 169.

⁵² Ibid. 174.

Which assessment deserves moral precedence? For the conference of bishops, the answer depends on how deterrence is practically carried out. Some policies and approaches to deterrence are better than others, specifically under consideration are targeting doctrine and the effectiveness of deterrent strategies.⁵³ Targeting doctrine and actual use are necessarily associated, as a nation's ability to discourage attack relies on its ability to provide a credible reciprocal threat. After all, what use would warheads have if they were meant to never leave their silos? The principle moral issues associated with targeting are again discrimination and proportionality. In outside consultation with those familiar with American strategies, it became immediately apparent to the bishops that if existing strategies which only single out military targets were to be executed, the result would be a catastrophic number of civilian fatalities.⁵⁴ While such actions could be considered discriminate, meeting on criteria for justice in war; they would not be proportionate, and therefore unjust and prohibited.⁵⁵ *Challenge of Peace* stops short of condemning strategic planning for specific nuclear scenarios, instead choosing to emphasize the overwhelmingly harmful consequences of any actual attack.

The second question is deterrence strategy itself, particularly its objectives. What are the limits of deterrence? The bishops declare that insofar as the objective of deterrence is to prevent nuclear attacks, it is acceptable.⁵⁶ However, strategies which are specifically directed at a rival nation's defense infrastructure undermine the stability of

⁵³ Ibid. 177.

⁵⁴ Ibid. 180.

⁵⁵ Ibid. 182.

⁵⁶ Ibid. 185.

deterrence itself.⁵⁷ The bishops conclude that deterrence cannot be seen as an end, but rather must be an intermediate step on the way to a more lasting peace in which deterrence will no longer be necessary.⁵⁸

While at times its teaching is apparently contradictory, *Challenge of Peace* reaffirms the profoundly negative implications of using and possessing nuclear arms. While *Pacem in Terris*, *Gaudium et Spes*, and *Challenge of Peace* never explicitly condemn nuclear arms themselves as intrinsically evil, there seem to be few acts other than dismantling them which are not moral wrongs. The object itself is not inherently sinful, but because it only has sinful uses, what good is accomplished in its production or possession? Nuclear weapons are the clearest example of an armament whose existence constitutes an occasion of sin, because no possible use is justifiable and even their possession threatens human dignity and peace. The destructive and sinful effects of testing, producing, possessing, and possibly using nuclear weapons render their defensible existence impossible.

The Cold War era Arms Race, and the nuclear weapons which it brought into being, stand as unambiguous examples of circumstances and arms which smother efforts to further peace and fan the flames of injustice. However, as treaties reduced stockpiles of nuclear arms and the Cold War ended, these threats remained in various different forms. People around the world continue to be threatened by terrorism, civil wars, genocide, unexploded munitions, and hostile nations.

⁵⁷ Ibid. 184.

⁵⁸ Ibid. 186.

Benedict XVI's 2008 letter to Cardinal Renato Martino, President of the Pontifical Council for Justice and Peace, specifically addressed some of these ongoing threats. The letter was sent as encouragement to participants in a seminar entitled, "Disarmament, Development and Peace. Prospects for Integral Disarmament."⁵⁹ Naturally, Benedict XVI reiterates many of the ideas found in *Pacem in Terris* and *Gaudium et Spes*, including the need for real economic and social development, and particularly the moral and human formation of individuals.⁶⁰ However, some new ideas and emphases arise out of the same timeless principles which inspired those previous documents.

Benedict XVI calls attention to the concept which is relevant to disarmament for nations both possessing and not possessing nuclear weapons:

As long as there is a risk of offence, States will need to be armed for reasons of legitimate defence, which is a right that must be listed among the inalienable rights of States since it is also connected with the duty of States themselves to defend the security and peace of their peoples. Yet an excessive accumulation of arms does not appear legitimate to us...⁶¹

Earlier, we concluded that nuclear weapons too significantly endangered justice and peace to be a permanent part of a nation's defensive strategy. However, this did not negate the requirement of nations to defend their inhabitants against various forms of

⁵⁹ Benedict XVI, "Letter to Card. Renato Raffaele Martino on the occasion of the International Study Seminar promoted by the Pontifical Council for Justice and Peace on the theme: "Disarmament, Development and Peace. Prospects for Integral Disarmament"" (2008).

⁶⁰ Ibid.

⁶¹ Ibid.

aggression and violence. This right and obligation is referred to as *legitimate defense*.

However, as the quote reveals, this right has limits. Benedict goes on to say:

Lack of respect for this "principle of sufficiency" leads to the paradox by which States threaten the life and peace of the peoples they intend to defend, and, from being a guarantee of peace, arms for defence risk becoming a tragic preparation for war.⁶²

Nations that exceed the limits of a satisfactory defense capability include those possessing nuclear weapons and/or excessive conventional arms stockpiles. Once more, the great injustice of such circumstances is affirmed.

What criteria can be used to judge whether a nation's defense exceeds the Principle of Sufficiency? As earlier documents mention, the production of arms, and the enormous expenditure of material and intellectual resources, represent an unnecessary burden on the citizens of wealthy nations and deny resources better spent on development from those who need them most. A more just, and therefore peaceful, arrangement would reallocate money being wasted on arms to efforts intended to assist developing nations.⁶³

Benedict XVI also mentions a number of other arms related dangers, and encourages efforts to eliminate them. These include nuclear, chemical, and biological industries and programs which further military ambition, and all weapons, particularly conventional weaponry like cluster munitions, mines, and small arms.⁶⁴ Why these

⁶² Ibid.

⁶³ Ibid.

⁶⁴ Ibid.

weapons specifically? In general, these arms are consistently used in ways incompatible with just war theory. As shown before, using nuclear weapons proportionately and discriminately is difficult if not impossible. The same is true for chemical and biological weapons. These arms are designed to cause devastation and human suffering far in excess of that which could ever be considered proportionate or minimally respectful of human dignity.

The typical use of many types of conventional arms is no better. While some technologies and tactics allow militaries to fight more just wars in theory, this may be far from actuality. For example, the air force may no longer need to carpet bomb an entire city, but even a single precision guided bomb can cause disproportionate civilian casualties due to inadequate target intelligence and selection or system malfunction. Furthermore, there are numerous conventional arms whose uses or effects are routinely unjust. Mines and bomblets from cluster munitions present a unique hazard to civilian populations because of their persistent ability to explode long after being set or dropped. Small arms are another example, as their low cost, high portability, and reliability make them sought-after commodities for guerilla fighters and criminal organizations. These weapons are as or more dangerous than the threat of nuclear warfare, and require the same type of concern.

What should we conclude about the morality of weapons themselves, both nuclear and conventional? The answer is at once complicated and yet straightforward. A Catholic understanding of weapons, war, and peace must originate in a profound understanding of the human person's role in God's purposeful creative action. Mankind

is meant to live in a peacefully ordered world, not in the chaos of war and conflict. Therefore, the primary objective of any war must be to restore this rightly desired peace. However, peace cannot be pursued and will not be honestly achieved by sacrificing our own humanity, and so even war must be governed by moral principles. These high-minded ideals though are mere dreams or illusions if they do not encounter the terrible reality of warfare. Although we recognize that even our best attempts to wage just wars will be foiled by uncertainty and human frailty, anything but our best attempt is unacceptable.

The practical consequences of opting for a just war ethic require that our strategies and weapons in and before warfare conform to principles such as discrimination and proportionality. In every case we must consider the morality of this policy or that weapons system, based on both realistic predictions and whatever prior evidence there may be. We may determine that some of these are inconsistent with just war in their execution, use, or effects. Consequently, such strategies and armaments will need to be dismantled and replaced by better and more legitimate defensive preparations. Weapons themselves are neither inherently good nor evil. Rather, the morality of arms is dependent on their design, production, accumulation, use, and effects. Weapons and the circumstances surrounding them should dispose our actions toward the promotion of justice and peace and away from the attractions of selfishness and hostility.

III. The Role of Catholic Scientists and Engineers in the Arms Industry

Having grasped some truth about the nature of warfare and arms; how should we evaluate the moral and ethical implications of contributing our intellectual efforts and daily labor to their development? Here, it is good to recall the words delivered to scientists and scholars by John Paul II at Hiroshima:

Hiroshima and Nagasaki: Few events in history have had such an effect on man's conscience. The representatives of the world of science were not the ones least affected by the moral crisis caused throughout the world by the explosion of the first atomic bomb. The human mind had in fact made a terrible discovery. We realized with horror that nuclear energy would henceforth be available as a weapon of devastation; then we learned that this terrible weapon had in fact been used, for the first time, for military purposes.⁶⁵

Catholic scientists cannot fail to consider the practical implications of their work on the world. The physicists, chemists, and engineers who contributed to the development of nuclear theory and technologies fundamentally made possible the atrocities unleashed at Hiroshima and Nagasaki. Whether or not they had anticipated or agreed to the use of their work against civilians, the fact remains that their work harmed human lives.

What responsibility do they bear for this evil? On the one hand the decision was not theirs alone to make; as the decisions of a long chain of other individuals eventually delivered the bombs to their targets: presidents, top military leaders, strategists, pilots, navigators, and eventually bombardiers each played a part. On the other hand, because

⁶⁵ John Paul II, "Address to Scientists and Scholars", *Origins* 10 (1981), 621.

they knew in at least some imperfect sense the consequences of their work; they had the capability and obligation to freely choose whether or not to be involved.

In situations such as this, an idea from Catholic moral teaching comes into play, known as the Principle of Cooperation. My degree of involvement in another's sin determines if I myself have or have not committed a sinful act. English Jesuit Henry Davis defines the various extents using several distinctions including: formal or material, immediate or mediate, and proximate or remote.⁶⁶ In formal cooperation, I intend and assist in committing the sinful act of another, which is always sinful.⁶⁷ This is opposed to material cooperation; in which my action itself is not inherently sinful and I do not intend the other's sin, but assist none the less.⁶⁸ Material cooperation can further be divided into immediate, directly assisting in a sinful act itself, or mediate, merely providing a secondary means to commit a sinful act.⁶⁹ Mediate material cooperation can also be further divided into proximate, assisting closely, or remote, assisting in a way less intimately connected to the act itself.⁷⁰

Typically the Principle of Cooperation has been used to consider the morality of carrying out a duty or profession when the laws or common standards of that work oppose Catholic morality. A rather antiquated example is the participation of a servant in his or her employer's sinful activity. Certainly it is formal cooperation to directly assist in and intend the wrong they are going. However, there are situations which are less

⁶⁶ Henry Davis S.J. , *Moral and Pastoral Theology*, vol. 1 (London, New York: Sheed and Ward, 1958), 341.

⁶⁷ Ibid. 341.

⁶⁸ Ibid. 341.

⁶⁹ Ibid. 341.

⁷⁰ Ibid. 341-342.

clear. For example, a chauffeur may be asked to drive to a certain location, not knowing what is to occur there. If the passenger is going there to murder someone, then clearly the chauffeur cannot comply, even if their cooperation may be only mediate and proximate.

A more modern and relevant examples can be found in the healthcare professions, where a doctor or nurse may be asked to participate in a procedure like an abortion or euthanasia, which are always intrinsically wrong. Cooperation in these cases is never to be allowed, unless there is a serious proportionate cause and if doing so will not cause scandal. In the world of modern healthcare this means that Catholic doctors and nurses should not participate in these or other procedures which defy moral law. That is unless their involvement is rather, minor like sterilizing tools or caring for a patient after the procedure and not doing so would risk the life of a patient or cause their removal from the medical profession, both of which are serious proportionate reasons. The same is true for Catholic healthcare institutions sharing resources with other hospital systems, who should not allow partner physicians to perform illicit procedures using space or resources under the proper control of the Catholic institution.

It would appear that in the case of scientists, engineers, or other individuals working in the arms industry, who do not intend any sins that may be committed with the weapons they helped to produce, their cooperation is material. Therefore, they do not bear definite responsibility for the injustices of wars fought with their weapons. Furthermore, because the involvement in war is indirect and secondary to the actual conflict, their cooperation is limited to material and mediate. However, the act of

working in the arms industry is proximate and not remote, because the production of arms is closely associated with waging war. Therefore, working in the arms industry does not cause an individual to sin insofar as their cooperation is not formal, i.e. not intending the unjust use of an arm during wartime, and the reasons for doing so are proportionate to any possible harm resulting from their work.

For example, if a scientist's country was involved in and waging a just war and the only work he or she could find was in an armaments factory; the scientist could work there provided that a small contribution to any possible injustice was outweighed by the need to earn a living and contribution to the positive and just defense of the nation. In this situation the decision to work in that arms industry is relatively easy, so long as the weapons being produced are compatible with that nation's just war effort. However, involvement in the production of the sorts of arms considered before that have no or few wholly just uses, like nuclear arms, this is less justifiable. In these circumstances or in nations that possess a sufficient defensive capability, a scientist's work in the arms industry constitutes cooperation in furthering injustice and the continued expansion of a nation's militaristic aims. Therefore, the proportionate reasons for continuing to be employed in the arms industry must be of a much more serious and significant degree. In these case scientists, engineers, and other various workers should make a sincere effort to find work elsewhere.

IV. Concluding Thoughts

Is simply trying to find any other job enough? Currently, I live in a nation engaged in wars of doubtful justifiability and fought using often indiscriminate and plainly disproportionate tactics. However, my individual contribution means so little to this vast system. It may be possible that contributing in a very limited way, like verifying the chemical composition of the paint used in the production of missiles, may be proportionate to my need to provide for a family. Yet, would it not be possible for me to find other work? If I could find another job without risking my family's economic wellbeing, I really ought to do so, even if it may mean taking a lower paycheck or having to sacrifice a longer commute or a move to another city.

What always matters more is my duty and desire as a Catholic to act in a manner consistent with love of God and others, thereby serving the common good of my family, nation, and indeed all mankind. To work in the arms industry when better alternatives are available is to ignore this most central principle of my faith. Seeking this better way, the path of sacrifice, is not a matter to be taken lightly. Rather, it requires that we look upon the world and ask where our gifts and talents intersect with a world very much in need.

Like everyone else called to live out the Christian vocation, Catholic scientists, engineers, and manufacturing workers ought to pursue work in fields and industries which reflect their desire to serve the deepest physical, mental, and spiritual needs of the human person. Ideally, this would include working on innovations, devices, and products that contribute positively to the welfare and development of all peoples and nations,

especially those most socially and economically underprivileged. Finding these jobs may not be easy for a number of factors, the primary one being that most jobs are tied to industries and companies focused on generating profitable products and not on serving the needs of humanity. Therefore, the question must continue to be asked, “But is that enough?” By always seeking to answer this question, and changing what we are doing if the answer is no, we can be assured of the sanctity of our toil.

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