

Cyber Attacks and Non-combatant Immunity

Patricia Steck, Ph.D

Century College, White Bear Lake, MN

Abstract: Violations of non-combatant immunity are generally assumed to be instances of direct physical harm to non-combatants. I conclude that there are less direct means of violating non-combatant immunity. I support this conclusion by establishing a theoretical framework to assess what it means to violate non-combatant immunity and then using that framework to analyze fictional scenarios involving non-lethal cyber-attacks.

Presented: ISME 2011, University of San Diego, January 2011

Please direct additional comments to: Patricia.steck@century.edu

The just war principle of non-combatant immunity is perhaps the least controversial idea in the ethics of warfare. The just war tradition readily accepts injury, torture and death as violations of non-combatant immunity. It is clear that bodily injury must be included in any conceivable version of non-combatant immunity, but it is less clear whether or not other impacts of war are also violations of non-combatant immunity. This paper will support the conclusion that it is possible to violate non-combatant immunity without causing direct physical harm. I will do this by examining the concept of harm to non-combatants with special attention to be paid to the impacts of cyber-warfare on non-combatants.

The principle of non-combatant immunity

The principle that non-combatants ought not be harmed by war is perhaps the least controversial and most binding principle of just war theory. In a just war theory based on Rossian *prima facie* duties, the set of just war principles must be satisfied in order to justify overriding the *prima facie* duty of non-injury (Steck, 2010)ⁱ. The principle of non-combatant immunity is the most obvious means of respecting the residue of overriding the duty of non-injury. While the means and methods of fighting war have changed significantly over time, the understanding of what it means to violate non-combatant immunity has not changed. This leads to the question of what constitutes harm to a non-combatant and the related question of whether every harm to a non-combatant constitutes a violation of the principle of non-combatant immunity?

It seems that there are two degrees of harm. Primary harms are physical, generally either directly related to the violence of war, or as an implication of the violence of war. Someone losing a limb in a roadside bomb or dying of cholera in a post-conflict epidemic would be

instances of primary harms of war. By contrast, secondary harms of war are generally either economic or psychological, so they are non-physical. A veteran with PTSD or someone whose livelihood is destroyed by the war has experienced secondary harms.

It cannot be the case that EVERY implication of war on non-combatants is an instance of a violation of non-combatant immunity. For example, it is often the case that war increases the need for goods produced by domestic factories. These factories must employ more people, buy supplies etc. and thus the war becomes good for those sectors of the economy. Additionally eliminating a just cause for war creates a positive long-term impact of the war. Along the same lines, if the post-war reconstruction period is conducted justly, the result will be a nation in better shape than before the war with a government and society that reflects the values of the residents (Steck, 2010).

The examples of terrorism and the Japanese internment camps established by the U.S. during World War Two illustrate some current intuitions about non-combatant harm. First of all, terrorism is primarily considered a violation of non-combatant immunity because the targets of terrorism are non-combatants. Non-combatant immunity is violated in the cases of those injured or killed in the attack, but physical injury isn't the only reason terrorism is considered wrong. Another reason is that terrorism's main aim is to coerce the residents of the target area or country. Simply killing a small or large number of people in a spectacular way isn't sufficient for a successful terrorist attack, in order for an attack to be successful the population must see the people killed as similar to themselves and change their behavior in response. So, terrorism has both primary and secondary harms. In the case of terrorism, the secondary impact on a civilian population is much longer lasting than the impact of the relatively low numbers of deaths and physical injuries. These impacts are intellectual, emotional and economic because they can

make an entire population afraid of another attack. In addition to the physical injuries caused by terrorism, it should be considered immoral because of the secondary harms.

The case of the internment of U.S. citizens of Japanese origin is even more interesting in terms of illustrating our intuitions of harms done to non-combatants. A summary of the Japanese internment camp history is that after Pearl Harbor the U.S. government decided that residents of Japanese descent posed a security risk. In order to reduce this risk, 120,000 residents of Japanese descent were placed in internment camps from the spring of 1942 to the fall of 1945. Japanese-Americans lost homes, businesses and their children had their schooling interrupted. After the war they faced the enormous task of rebuilding their lives. In 1988, 1.6 billion dollars of reparations were paid to the persons or heirs of persons who were sent to the internment camps. There is no evidence to support the assertion that Japanese-Americans posed a security threat.

In order for this example to clarify our intuitions, two assumptions must be stipulated. First, the people sent to the internment camps were not captured combatants. They were simply under suspicion because of their Japanese heritage, and as such they were considered a threat to domestic security. Second, the people in the camps were not intentionally physically or mentally harmed. Records from the camps show that deaths in the camp were due to inadequate medical care and not as a result of intentional violence. It may be the case that these assumptions are not 100% true, but for the most part the assumptions above conform to reality.

The fact that the U.S. government eventually paid reparations indicates that 43 years after the camps closed, indicates that the government considered the Japanese-Americans harmed. This brings to light two interesting aspects of harm to non-combatants. First, the harm does not need to be from opposing forces. Harm can be inflicted by the non-combatant's own

government. Second, economic and cultural damages can be considered harms absent even one civilian death. The question still remains as to whether or not harms of this sort are a violation of non-combatant immunity?

Possible scenarios that could cause harms to non-combatants

First of all, since the purpose of this paper is to discuss indirect harms to non-combatants, I take as an underlying assumption that direct physical harm to non-combatants is an undisputed harm and a violation of the principle of non-combatant immunity. The fact that harm to non-combatants can come from opposing or domestic sources should also be uncontroversial. The fact of the matter is, it doesn't matter who harms the non-combatants, the fact of their being harmed is what constitutes a violation of non-combatant immunity.

The real question is what constitutes harm to a non-combatant sufficient to be considered a violation of non-combatant immunity? In order to sort this out, I will develop four possible scenarios by which civilians are indirectly attacked. One scenario is intended to be a clear violation of non-combatant immunity, one scenario probably is not a violation and the interesting cases are between the two. These scenarios have the following characteristics in common; first, they are all intended to impact non-combatants and would only impact combat troops in ways similar to the ways they impact non-combatants, second, all scenarios are not directly lethal to non-combatants, so while the implications of the attacks may cause physical harm, the harm does not come from the attacks. As such, chemical and biological means of attacks are excluded from consideration along with conventional weapons, even if they are used in less than conventional ways.

While all of these scenarios are fictional, the current security threats of the modern world could result in similar end scenarios to those described below, or some combination of the results described below. While these scenarios discuss attacks on the U.S., it is also possible that the U.S. might develop similar aggressive tactics for use in a variety of situations. The analysis and application of just war principles remains the same regardless of who is the aggressor and who is the target.

Scenario, "I can't Google that" ¹

The U.S. economy is highly dependent on the internet. E-mail and websites are integral to communications within and between businesses. Financial and medical data are routinely sent over the internet. In this scenario, a group intends to harm the U.S. economy by taking down the internet 90 minutes at a time, at regular and announced intervals. Security experts have a long list of possible attackers and don't give an estimate of how long it might take to determine the source and motivation for the attacks. Experts predict it will take three to six months to make the internet backbone immune to attacks of this sort and since those responsible for the attacks will simply pass their methods on to other groups, the only real solution is to dramatically improve cyber-security.

After the first round of attacks institutions responsible for providing vital infrastructure develop back-up plans to provide electricity, insure transportation safety and to maintain the use of telecommunications technology. Medical providers develop means for insuring vital records are available, so few patients are impacted. Banks have not been able to solve the problem of providing reliable communication with POS terminals and ATMs, so these are not available during an attack. On-line commerce is interrupted every time, and once service returns websites are swamped causing cascading slowdowns

The main harm to U.S. citizens is in the impact this has on the economy. Businesses that rely on the internet see their profits decline and some that are already unstable fail outright. A few of the failures are internet based banks and the economy generally slows down due to a drop in consumer confidence. Consumers are afraid the outages will increase in duration and frequency, so they start hoarding cash and stop spending money on non-essential items. As a result, unemployment and home foreclosures increase.

Analysis

It is difficult to argue that the people who have lost jobs or homes in this scenario weren't harmed by the impacts of the attacks. The question, though, is how many causal links are permitted in a violation of non-combatant immunity? The attackers didn't directly kill anybody.

¹ In December of 2010, news reports confirmed that "attacks" on Google in China were initiated by the Chinese government.

They also didn't directly cause people to lose jobs or homes. The harms are due to the U.S. dependence on the internet and the inability to effectively prevent further attacks or find an alternative. The attackers, in essence, used the characteristics of a modern society to their advantage in planning an attack that would impact the country directly. The attackers would claim that their method is non-violent, and much less harmful than sporadic biological or chemical weapons attacks, in that nobody is physically harmed by their actions.

Scenario: "Back to the 70s"

Without warning, the internet goes down across the United States. The cause is a combination of denial of service attacks followed by malicious software that causes the equipment needed to run all but the most basic the internet functions to become permanently unusable. The internet instantly loses all technological advancements made in the last 25 years.

Within a few days power companies, phone companies, transportation infrastructure and water treatment plants have implemented their back-up systems. Most hospitals and banks have local back-up records, but no efficient means of sharing those records across distances. These emergency systems are sufficient to provide for the basic needs of most cities.

Computer experts indicate that designing and building replacement hardware that will resist similar attacks will take at least five years and cost three trillion dollars with no guarantee that the attackers won't find another way to attack. Predictably, the US economy makes a huge decline. Companies in the area that depended on the internet fail, unemployment rises significantly and there are long delays in receiving benefits. Credit cards and personal checks are no longer accepted, as they rely on electronic means to transfer funds. All transactions must occur in cash and the only way to get cash is to stand for hours in very long lines at your local bank branch. Since the current supply of "real" money is very limited, until more money can be printed, a family of four is allotted \$100 per week in cash. The economic failures cascade and many people lose jobs and homes.

Eventually, it is determined that the attacks have been conducted by a group calling themselves, "I love the 70s", which is supported by Hugo Chavez. His stated goal is to cripple the US economy by limiting US citizens to the use of technology available to them in before 1980. Chavez claims this is his alternative to sponsoring more traditional terror attacks on the U.S.

Analysis

It does seem that some substantial harm to non-combatants was incurred in this scenario. Instantly, non-combatants have been subjected to significant concerns about their continued well-being, or at a minimum concerns about continuing their current standard of living. For

many people the internet is an economic tool, and the economic impacts alone of an attack of this sort are significant.

This scenario also raises the question of whether or not costs to government could constitute harms to their taxpaying citizens. In order to repay a debt of this kind, the citizens may have to endure significant cuts in government spending, increased taxes and the economic impacts that go along with it.

Scenario: Wall Street Collapse

Hackers sponsored by a hostile foreign government attack the computer infrastructure supporting the stock exchange. The attacks are carried out by causing key indicator stocks to lose nearly all of their value. The automated stock trading programs use those indicators to make decisions concerning buying entire groups of stocks. Their attacks cause wild fluctuations in stock prices, which result in uncertainty and unprecedented declines in national economic conditions. The result is a deep depression and significant job losses across the country. The country can't keep the economy going and is forced to take many substantial austerity measures, which create housing and food insecurity for a large portion of the society. Many deaths and much discomfort are a direct result of the economic conditions, and those are a direct result of the attack.

Analysis

Like the other attacks, this one intentionally targeted civilians using non-lethal means. While the previous scenarios were the result of interrupted communication, the harms connected to this kind of attack are more amorphous, and therefore less likely to be immediately repaired. Further, the real harm is secondary when economic harms arise from fears on the part of a large number of people. Changing minds and erasing fears is a necessary step to economic recovery, and the process is quite complex and time consuming.

Scenario One Second After (Forstchen 2009)

The fictional book *One Second After*, by William R. Forstchen is an account of the aftermath of the deployment of a series of EMPs over the United States. An EMP does not immediately kill anybody; it simply blows out all circuitry within range of the blast.

The immediate impact is that nothing electronic functions. At the time of the attack people are stranded where they are with the resources they have on hand. For towns near major

interstates, this means a sudden influx of strangers needing food and shelter and no way for those people to get home. People with medical conditions who rely on electronics or technology die within hours or days. People with medical conditions who rely on medications soon find themselves short of medicine. Towns are forced to rely on local resources for food and fuel, as the transportation infrastructure completely breaks down.

Long term, such an attack would cause substantial conflicts over resources. The book details armed conflict with neighboring towns as well as travelling mobs. Lack of food and even the most basic medicine makes many places uninhabitable. Communicable diseases spread rapidly and within a year most of the population of the country is dead.

Analysis

This scenario seems to be the most intuitively a violation of non-combatant immunity. The EMP was deployed with the full knowledge of the immediate and long-term impacts on civilians. In this scenario, the secondary impacts are among the least serious. Rather, the primary impacts of starvation and death were the predictable results of an attack of this sort. It could be argued that directly killing many of these people would have been less painful than their actual post EMP existence. If this weapon was biological and the one-year survival rate was only 20%, it would clearly be a violation of non-combatant immunity. It seems intuitively plausible to conclude that an attack of this sort constitutes a violation of non-combatant immunity.

How to determine whether or not non-combatant immunity has been violated

It seems that intent to harm civilians is an important aspect of a violation of non-combatant immunity. This is based on Lackey's concept of objective vs. subjective kinds of violations of non-combatant immunity (Lackey, 60)ⁱⁱ. The general idea is that an objective violation occurs any time a non-combatant is harmed by an attack. A subjective violation happens when civilians are the target of the attack. Lackey implicitly accepts the doctrine of double effect, which says that civilian deaths are permissible when they are not the intention of the military action. Walzer applies a more stringent standard, the doctrine of double intention.

In this doctrine, the military action must *try not to harm* civilians, rather than simply *not try to harm* them (Lee, 3)ⁱⁱⁱ. An observation of current military training practices shows that the doctrine of double intention is at the core of military training values (Kahl).

The objective version is strict enough to be unreasonable. It's a sad fact of life that a justified military operation may accidentally harm civilians. In fact, that is why the principles of *jus ante bellum* are so important, because civilians are likely to be harmed in war and *jus ante bellum* principles mandate ethical reconstruction of civilian infrastructure, civil society and the like.

So, it seems that one of the options under the subjective version seems to be a likely candidate for a standard. The doctrine of double effect has a significant flaw, namely that it permits soldiers to put civilians in significant danger, as long as there is an equally significant military advantage to be gained. This danger can be known in advance and then deemed unavoidable, while options that are slightly less likely to be successful and significantly less risky to civilians are eliminated from consideration. The doctrine of double intention would mandate the use of the less risky option, thus it is more stringent than the doctrine of double effect.

Thus, it seems reasonable to conclude that the doctrine of double intention is a stringent, but still reasonable standard, so in order for harm to civilians to constitute a violation of non-combatant immunity, it must violate the doctrine of double intention. This is a necessary condition, but not a sufficient condition, as the question of what constitutes 'harm' must still be settled. This is because an attack that puts civilians at significant risk, but fails to actually cause harm is not a violation of non-combatant immunity. So, an action that constitutes a violation of non-combatant immunity must both be intended to put civilians at risk and actually cause harm.

Degrees of harm

The scenarios outlined above seem to indicate that there is a range of what might be considered ‘harm’ to civilians. The harms range from small inconveniences or interruptions of daily life to significant disruption of the culture and means of survival. Every scenario involves the intent to cause a disruption in the lives of civilians, so the necessary condition for a violation of non-combatant immunity has been achieved.

The next problem is making a distinction between small harms and significant harms. In order to do this, it is important to consider what constitutes a significant harm. A significant harm is something that is more than an inconvenience. One element is whether or not the civilians are able to fulfill their Rossian *prima facie* duties (Ross, 21)^{iv}? These duties are the basics of a satisfactory life, and inability to fulfill *prima facie* duties is a just cause for war. So, if an attack inhibits *prima facie* values, it is a significant harm.

Another element is whether or not the attack results in citizens being unable to experience the things that make life good. In this way, I’m thinking about Rawls’ idea of the general categories of what constitutes a good life, as expressed in *Theory of Justice*. Are the non-combatants able to live an intellectually and spiritually satisfying life after the attack? Is it possible for them to fully participate in civil affairs, both locally and nationally? Are they able to participate in worship services in a manner substantially similar to their participation before attack? Are they able to meet the basic needs of food, clothing and shelter? An attack becomes more similar to a violation of non-combatant immunity with every negative answer.

Scenario Analysis

It seems intuitively plausible, that while the “I can’t Goggle that” scenario isn’t a violation of non-combatant immunity – the “One Second After” is. In the former case the

disruptions are minimal and the society can continue to function along most of the same lines as before. In the latter, entire societies are disrupted and the majority of citizens were prevented from fulfilling many of their basic *prima facie* duties. It is also the case that citizens were prevented from participating in government in more than the most local of ways.

The first interesting case is the “Back to the seventies” scenario. It seems that folks in the seventies were able to fulfill their *prima facie* duties without modern technology. While the attack made their lives less than comfortable, after some initial adjustments, their lives could continue much in the same way as before. There is nothing in the nature of the attack that prevented them from seeking the things that made them happy in a Rawlsian sense.^v Granted, the means of acquiring the things that make them happy may have changed, but the actual things are still generally available. For example, people who had previously attended classes or worship services via the internet would need to go in person, but they are not prevented from actually worshipping in a manner that makes them happy. Political participation significantly predated the internet, so citizens can participate in the democracy in ways similar to their parents. For this reason, an attack of this sort doesn’t seem to be a violation of non-combatant immunity.

The Wall Street collapse scenario is the other interesting case. Unlike the one second after case, disruption of civil life and *prima facie* duties, to the extent that it happens at all, is the third link in the consequences chain. First the attack happens, then the markets collapse, then the significant disruptions occur. Although a much longer chain might form the basis of an argument that an attack didn’t violate non-combatant immunity, it is important to look at the intent of the attack. Clearly, in this case, the attack was aimed at harming the economic welfare of the target and, along with that, their ability to fulfill their *prima facie* duties.

Conclusion:

Non-combatant immunity can be violated by indirect attacks, aimed at civilians and designed to create a significant disruption of lifestyle and ability to fulfill *prima facie* duties. While intent to cause harm is a necessary condition, when the attack causes disruption of *prima facie* duties and the inability to make choices conducive to a good life, that attack becomes a violation of non-combatant immunity.

Lackey, D. (1989). The Ethics of War and Peace. Upper Saddle River, NJ, Prentice Hall.

Lee, S. (2004). "Double Effect, Double Intention, and Asymmetric Warfare." Journal of Military Ethics **3**(3).

Rawls, J. (1971). A Theory of Justice, Harvard University Press.

Ross, W. D. (1930). The Right and the Good. Indianapolis, Hackett.

Steck, P. (2010). A Rossian Just War Theory, University of Nebraska Lincoln.

ⁱ Steck, P. (2010). A Rossian Just War Theory, University of Nebraska Lincoln.

ⁱⁱ Lackey, D. (1989). The Ethics of War and Peace. Upper Saddle River, NJ, Prentice Hall.

ⁱⁱⁱ Lee, S. (2004). "Double Effect, Double Intention, and Asymmetric Warfare." Journal of Military Ethics **3**(3).

^{iv} Ross, W. D. (1930). The Right and the Good. Indianapolis, Hackett.

^v Rawls, J. (1971). A Theory of Justice, Harvard University Press.