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Will Japan become a nuclear power? A predictive study about the possible responses by China, North Korea and South Korea.

"The discovery of nuclear reactions need not bring about the destruction of mankind any more than the discovery of matches" - Albert Einstein

"All the waste in a year from a nuclear power plant can be stored under a desk" - Ronald Reagan

"A world without nuclear weapons would be less stable and more dangerous for all of us" - Margaret Thatcher

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Introduction

Japan is a country about which much has been written. Its miraculous economic recovery from the ashes of World War II has been the most extraordinary economic development of the last century. Japan went from an industrialized country doing shoddy, low quality products, to outperform the United States and the European nations in many industries where the exceptional combination of government support and private initiative materialized in one of the most successful development models in history.

After the end of World War II and the tragic experience of the two atomic bombs dropped on the Japanese cities of Hiroshima and Nagasaki in August 1945, Japan had to relearn how to become a pacifist nation. The Allied occupation led by the United States forced upon the Japanese nation a Constitution which deprived the nation of its sovereign rights to declare war and maintain military forces, except a small self defense force.

The world's fear about the resurgence of Japanese militarism and imperialism was too great to leave open any possibility for the events of World War II to reoccur. Japan's neighbors in the South East region, also devastated by the war, were satisfied to see that the once powerful Japan was forced to take a pacifist posture. However, rather than being forced to do this, most Japanese embraced pacifism wholeheartedly, seeming to have learned from the experience of having suffered extensive destruction of lives and resources during the two nuclear attacks.

Today, Japan has come back. Its economy is the second in the world, after the United States, and its participation in world affairs is moving rapidly toward a more active role.

Literature Review

Japan conducted research into nuclear weapons during World War II, although it is believed that during that period of time they did not accomplish very much. In more modern times, Japan is a signatory member of the Nuclear Non-Proliferation Treaty (which was opened for signature in 1968 and extended indefinitely in 1995), and has advocated a pacifist international policy, subscribing and encouraging non-proliferation treaties, maybe because Japan is the only country in the world against whom atomic weapons have been used. The cities of Hiroshima and Nagazaki were destroyed on August 6 and 9, 1945, and this dramatic event may have influenced Japan's well-known pacifist policy.

In 1974, Japanese Prime Minister Eisaku Sato was awarded the Nobel Peace Prize for his activities against nuclear proliferation, including his advocacy of the so-called Three Nonnuclear Principles, which became the national principles of the government of Japan (Kamiya 2003, 65) which have become the cardinal piece in Japan's nuclear policies.

Japan is an unusual country, and people usually wonder about what seems like inherent contradictions in Japanese foreign policy. On one hand, Japan is the second economic power, after the United States. On the other hand, Japan until quite recently when it has started to play a more active international role, Japan seemed quite shy to use its power in the political arena, preferring to hide perpetually under the protective military umbrella of the United States. Certainly, there are several explanations for this state of affairs. One possibility is that Japan is caught between opposite currents or forces which have influenced the development of its foreign policies: its pacifist orientation because of its militaristic past, and the new geopolitical realities in the region.

Article 9 of the Japanese Constitution , approved on May 3, 1947 during the American occupation under the command of General Douglas McArthur, states that the Japanese people

shall forever renounce war as a sovereign right of the nation and the threat or use of force as a means of settling international disputes. This constitutional proviso, accepted as part of a settlement that preserved the Japanese monarchy and kept the Emperor from being removed or even tried as a war criminal along with many other Japanese leaders (Benke 2001, A-25), was reinforced at the time by what seemed like a national determination that land, sea, and air forces, as well as other war or military potential, shall never be maintained.

While Japan has been struggling with this clause for the last several years, and clearly modifying its literal reading into a more flexible interpretation which allows the Japanese to keep military "defense" forces and help the US military in certain ways, some sectors of the Japanese population would like to adhere more faithfully to the literal interpretation. One reason may be that Japan has not forgotten the loss of the three million Japanese lives during the four years of Japan's participation in World War II, including the atomic bombings of Hiroshima and Nagasaki, as well as a large number of people injured in combat or affected by radiation.

Japan's present nuclear capabilities

In general, it seems that Japan has the scientific, technological and industrial capability to develop nuclear weapons if they wanted to do so. Countries with much less economic development as Israel, India and Pakistan are believed to have produced nuclear weapons (Friedman and Lebard 1992, 354).

However, while the Japanese obviously has the technological capability to develop nuclear weapons, if they are producing them it must be in utmost secret, because so far there have not been accusations or evidence that they are doing this. However, there has been some speculation that nuclear weapons, if produced, could be located in US military bases in Japan (Schulman 2005, 7).

Factors that may affect Japan nuclear ambitions

In his magnificent book "Japan Imperatives for Nuclear Weapons" (2002), Dr. Dubhash Kapila mentions the following factors which may affect Japan's going nuclear:

Japan's imperatives for nuclear weapons capability probably arose the same day that this country was subject to a nuclear attack in August 1945. The Korean War (1950-1953) strengthened this imperative, not only because the war was very close to Japan's borders, but also because the war itself came very close to become a nuclear confrontation. Being protected by the US nuclear umbrella probably did not reduce Japan's interest in nuclear weapons, because they had to be prepared for the eventuality that the US may no longer continue providing this protection. East Asia has not become more peaceful after the termination of the Cold War. If anything, the region has become more turbulent and militarized. Japan's development of nuclear weapons could provide both strategic and political stability in the East Asia zone, in addition to reinforcing Japan's own security, while diminishing the country's vulnerabilities to coercive pressures from its neighbors (Kapila 2002, 10-200).

Dr. Kapila followed up this early study with another paper entitled "Japan at the Strategic Crossroads" (2004), where he expressed his opinion in favor of Japan developing nuclear weapons, arguing that

Japan is the only major nation in the continent of Asia which does not have nuclear weapons; and that this becomes more necessary as a deterrent to her three other nuclear armed neighbors with unpredictable intentions (China, Russia and North Korea). He said that it is illogical for the Japanese to believe that its Peace Constitution can shield them from either conventional or nuclear attacks, or threats of attacks. He warned that peaceful nations may invite aggression and

that “peaceful nations too need deterrence, especially when existing in a hostile neighborhood” (Kapila 2006, 2).

Internal politics and its Constitution

Japan’s Constitution is a pacifist document, written at the end of World War II, in which the Japanese government and people committed themselves to never use war again. Many people in Japan still remember the tragedies of the atomic bombs thrown against two Japanese cities at the end of the war. It is to be expected that at least a large segment of the population of the only country in the world which has been the victim of nuclear weapons would be wholeheartedly against its possession and use. However, another segment of the population realizes that times have changed, and that in order to safeguard the great economic advances made by the country since the end of the war, that Japan has no recourse than to develop, possess and be ready to use atomic weapons, and this is what politicians have been repeating for the last several years.

On April 2, 2002, the President of the Liberal Party Ichiro Ozama declared “if China gets too inflated, Japanese people will get hysterical. It would be easy for us to produce nuclear warheads… We have plutonium at nuclear power plants in Japan, enough to make several thousand warheads. If we get serious, we will never be beaten in terms of military power” (Schulman 2005, 20).

On May 31, 2002, Chief Cabinet Secretary Yasuo Fukuda mentioned that “Japan’s ‘Peace Constitution’ does not preclude the acquisition of nuclear weapons by Japan” and that “circumstances have changed to the point that even revising the Constitution is being talked about… depending upon the world situation, circumstances and public opinion could require Japan to possess nuclear weapons” (Kapila 2006, 3).

On October 24, 2004, a group of academicians, business leaders and retired government officials requested the Japanese Government to develop military capabilities to be able to launch pre-emptive military strikes against enemy military bases from which threats could arise for Japanese security (Kapila 2006, 4).

On September 5, 2006, former Japanese Prime Minister Nakasone said that "there is a need also to study the issue of nuclear weapons" and emphasized that "there are countries with nuclear weapons in Japan's vicinity. We are currently dependent on US nuclear weapons as a deterrent, but it is not necessarily known whether the US attitude will continue" (Kapila 2006, 6).

Prime Minister Shinzo Abe said: "We need deterrence in order for Japan not to get embroiled in wars and to prevent an invasion of Japan. It is a fact that we maintain world peace with deterrent force. In addition, it is not necessarily unconstitutional for Japan to use tactical nuclear weapons in our defense" (Kapila 2006, 8).

Neighbors worry about Japan's re-militarization

It is extremely unlikely that Japan's remilitarization and her strategic shift could lead to a repetition of her history of Asian invasions in the early and mid-20th century. However, there is no question that Japan's more pro-active stance on military affairs has worried many of its neighbors. However, Japan's increased military role is still projected under the security umbrella of its treaty with the United States, and it has been the United States which has given encouragement and tacit approval to Japan's playing a greater military role in the region. This is unlikely to change in the future, but as the attention of the United States gets diverted to other geographical areas, the most likely scenario is that Japan's military role will continue to increase in the future.

On the other hand, the anxieties of the Asian neighbors are shared by lots of supporters inside Japan. A substantial portion of the Japanese population would like to continue with the military restrictions imposed by Article 9 of the Japanese Constitution. After all, the Japanese have not forgotten the loss of three million Japanese lives during the four years of Japan's participation in World War II, including the atomic bombings of Hiroshima and Nagasaki, as well as the large number of people injured in combat, or affected by radiation.

In addition, national power and prestige in the 21st century is not based on the extraction of raw materials from colonies as in the past. Powerful countries today have an interest in maintaining political stability to promote economic growth. As the economies of the Asian neighbors continue to improve in the future; these attractive markets will become more and more important to Japanese businesses, and another reason why Japan will not repeat the history of its Asian invasions in the early and mid-20th century.

Japan's potential nuclear capabilities

Japan has been working with a nuclear program practically since the 1950s. It is generally believed that during the final battles preceding the surrender of Japan that the nuclear facilities where Japan was developing the atomic bomb may have been destroyed. It is known that Germany sent Japan about 1200 pounds of uranium oxide in a submarine which was captured in the North Atlantic and taken to Portsmouth, New Hampshire; and ironically, there has been speculation that this material may have been processed into weapons-grade uranium and used to make the American bomb that was dropped in Hiroshima (Benke 2001, A-25).

Other historians even go as far as speculating that American bombing of Japanese research laboratories and the destruction of other elements of the Japanese nuclear establishment may

have been what kept Japan from developing and using the atomic bomb first, before the United States did so (Wilcox 1995, 191).

However, even if the Japanese were unable to go very far in the development of the atomic bomb during the war, which American bombing at the time was making unlikely, they may have had plans to use nuclear materials as radiological chemical agents, if not necessarily in bombs. The fact that American occupying forces found and destroyed five cyclotrons in Japan (Green 2005, 2) is reminiscent of more recent talks about destroying the real or potential nuclear capabilities of other countries.

The problem, as we all know, is that nuclear power can also be used for the production of energy and that many countries, especially those deprived of oil reserves, have become interested in the development of this source of energy. Japan is probably the most spectacular example, because this country up to the year 2002 imported nearly 80 percent of its total energy requirements and almost 100 percent of its petroleum requirements (Statistical Handbook of Japan 2002, 79-80).

Nuclear energy accounts for 26.6% of the total energy produced in Japan, because Japan has very few natural resources of its own and has to import about four-fifths of its energy needs (Hyodo 2001, 203). Japan ranks third worldwide in installed nuclear capacity, behind the United States and France (Nuclear Weapons Program 2006, 7). Until 1988, Japan was engaged in uranium exploration, not only in Japan but abroad, although later on these activities were transferred to the private sector (Nuclear Weapons Program 2006, 2).

Japan has a long tradition and long standing policy of relying on nuclear power to generate the electricity that the country needs, because it does not have the hydroelectric potential of many other industrialized nations, and has led the world in the development and implementation

of nuclear power generation. The commercial enrichment plant at Rokkasho, Japan, the largest reprocessing plant of uranium in the world (with a capacity of 800 tons per year at a cost estimated of US$ 15 billion), and whose completion has been delayed for many years, started operations at the end of 2007 (Nuclear Capable States 2006, 2).

Japan's objective of attaining self-sufficiency in electric power has been based mostly on power using plutonium, which as we all know, is a byproduct in nuclear power plants that use uranium and which can be reprocessed into weapons-grade nuclear material. Some nations believe that this interest in the development of nuclear power to generate electricity is just a pretext to hide the real reason which is to enable Japan to produce the necessary materials for the production of atomic weapons. It has been reported that "by the end of the year (2006) Japan will have an inventory of about 55 tons of separated reactor grade plutonium" (Nuclear Capable States 2006, 9). This is enough plutonium to manufacture 10,000 warheads, more than the combined nominal arsenals of the US and the former Soviet Union combined under the START II Agreement (Kamiya 2003, 10).

However, the Japanese are also demonstrating that it is possible to reuse and control plutonium rather than (like most other nations) just wondering what to do with a material that remains toxic almost forever and with no agreement on where to keep it, whether it should be "buried, entombed, dumped at sea" (Wilcox 1995, 23) or thrown into space. Finding ways to be able to reuse plutonium, to make it part of an ongoing fuel system for power generation in sophisticated mechanisms, seems an admirable goal and one which could deprive the development of nuclear energy of one of its biggest criticisms.

With or without the United States?

As long as the United States maintains its own defense at a level high enough to include the protection of Japan, the financial savings to Japan are tremendous. If we take into consideration the awesome expenditures that the United States must make to remain the world's only superpower and how much modern weapons system now cost, it is possible to imagine how much the next generation of military hardware and software will cost. Military planes cost now what warships used to cost just a couple of decades ago, and a warship today has a price tag in the billions of dollars (Chinworth 2004, 32).

While Japan is the second economy in the world, until relatively very recent it has used only a tiny part of its industrial production –less than one percent- for the production of military materials (Green 2005, 2). In fact, there was a one percent of GNP ceiling on military spending which was abolished by Prime Minister Nakasone (Hook and others 2001, 162). This is not to imply that American military protection is without any costs, because it has been estimated that it costs Japan about $ 5 billion a year to pay for the costs of keeping the American military bases on Japanese soil (Chinworth 2004, 32), but this amount is practically insignificant compared to what would cost Japan to duplicate the American military power.

In addition, there is the fact that the geography and demographics of Japan could make it dangerous for Japan to become a nuclear power. Japan is of about the size of the state of California, not a very large country, and much of its population and industrial facilities are densely concentrated in relatively small areas, such as around Tokyo and the Kobe-Osaka area.

According to some experts, this means that Japan is vulnerable to air attacks that could be devastating (Sullivan 2004, 28). The same author reports that in the later stages of World War II, specifically between the months of May and August 1945, "after the Americans gained air

superiority, that long-range B-29 bombers, carrier planes, and even battleships firing from just off shores were able to bombard Japanese targets almost at will" (Sullivan 2004, 29).

According to this author, even conventional weapons only could hurt greatly any Japanese city. He added: "the infamous incendiary raids by General Curtis Le May's 20th Air Force, including one on Tokyo that killed some 100,000 people, demonstrated that it did not require atomic weapons to demolish Japanese cities" (Sullivan 2004, 30).

If this is truly the case, it is possible to speculate that a single submarine with two or three multiple-head ballistic system could probably destroy the Japanese nation. However, it can also be argued that the fact that Japan could be very vulnerable to a nuclear attack may increase – rather than decrease- Japan's determination to possess the nuclear weapons and use them in submarines around potential targets for a responsive attack, a reminder of one of the military strategies used by the United States in its struggle with the former Soviet Union during the Cold War.

While it is doubtful that the United States will abandon its responsibilities to Japan under the treaties signed with this nation, it is an inescapable fact that the United States, as the world's hegemon, is more and more overstretched with its present military presence in Iraq and Afghanistan; and the tremendous challenges posed by international terrorism, especially along the boundaries of the Islamist countries from the Philippine Islands to Afghanistan to the Middle East. In addition, the main goal of the United States in the region is to provide long-term stability.

However, scholars such as Michael Chinworth have written widely about the now-remote, but still not an unlikely possibility of an eventual abandonment of Japan by the United States. Chinworth recommends that Japan should build its own credible military and hedge itself against

abandonment. He points out that the United States has been "fading out" of Asia and the Pacific since the Vietnam War (Chinworth 2004, 119).

American forces remain in Asia, but they are no longer what they were at one time. The strong US presence in the Philippines is a thing of the past. American troops in South Korea have been greatly reduced. The idea of the stronger of the two allies abandoning the weaker part is not unheard of in history and goes back to Thucydides' Peloponnesian War (Chinworth 2004, 120). The stronger may either abandon the weaker party or may draw it into military adventures in which the weaker party does not want to participate. So far Japan, because of its Constitution, has been cooperating with the United States on the sidelines, but as the partnership becomes more equal in the future Japan could be better off on its own.

Recent events have been seen by some as a demonstration that the United States' distractions may have encouraged both China and North Korea to escalate their military arsenals as well as to make sporadic provocations against Japan, such as China's rigid opposition to a nuclear weapons program by Japan, and North Korea's missile test firings.

On the other hand, the attitude of the United States toward Japan's development of nuclear weapons seems to encourage Japan to have those weapons. Most likely, the United States would like to see a militarized Japan to help the United States with its global responsibilities, especially in the areas close to Japan. In the 1970s, President Nixon considered arming Japan with nuclear weapons (Hyodo 2001, 204). More recently, Vice-President Dick Cheney commenting about the nuclear developments in North Korea said that "Japan may be forced to consider whether or not they want to address the nuclear issue" (Schulman 2005, 11).

There are also some people in Japan who would like Japan to become more independent militarily from the US and rely on its own means, more or less in the same way that Charles de

Gaulle advocated for France in a NATO-dominated Western Europe. This policy, known in Japan as *Kokusanka*, or indigenization of defense production, could have potential benefits for Japan (Morterin 2003, 3). Proponents of going in this direction would like to see a Japanese military which is independent from the United States and completely autonomous. In this manner, Japan could become more flexible in reacting to any potential threat in the future.

In addition, a country that has to develop all its armaments could keep its industrial production going on for a very long time even in the face of potential economic recessions. The idea of *Kokusanka* is that true security for Japan can also come by having an independent national industrial and military strength. Japan already produces some of the most sophisticated weapons in the world, including modern tanks, jets, ships and missiles for its own military forces, although under agreement with the US government, they cannot change or improve the design (Green 2005, 4).

Also, Japan is already manufacturing and building rockets that can launch satellites into space and which are powerful enough to serve as strategic missile launchers. The Tangegashima launch facility, on an island south off the island of Kyushu is already operated as a security military base (Kapila 2002, 7). For several years now Japan has had its H-1 and H-2 rockets, which are launchers comparable to the Titan missiles which were the backbone of American strategic nuclear capability (Kapila 2002, 7). Japanese heavy industry could be able to produce relatively easily the Trident-type missile submarines which can remain under water and out of enemy reach for long periods of time (Kapila 2002, 8). These submarines could deter potential attackers from using nuclear weapons against Japan.

However, Japan has been working under some severe limitations. It has been reported that in the production of F-15 fighters, for example, they use a “black box” made in the United States,

whose main objective is to keep Japanese engineers in the dark as to how those weapons really work (Green 2005, 2-3). Industrial giants such as Sony, Toshiba and Mitsubishi would love to play a greater role not only in military production, but also in design and innovation of military equipment – which, by the way, could also benefit the United States as long as the security alliance with Japan continues.

It is difficult to pinpoint specifically the most conspicuous change made in the security relationship between Japan and the US since 9/11, because the changes have been profound. There have been several global and regional issues which have affected Japan's national security in the recent decade. China has awakened its gigantic power and is ready to become a formidable competitor, not only in trade, but also politically and militarily. North Korea has continued its quest for nuclear weapons, has declared that already has tested one, and has gone as far as (on August 31, 1998) sending a three-stage rocket flying over the Japanese island of Honshu, which landed in the Pacific Ocean, about 1022 miles from the launching site.

Japan's most important partner, the United States, has been busy waging its war on terrorism, which prompted the Japanese to pass its Antiterrorism Law of October 2001, just one month after the dramatic events of 9/11 in the United States. This law was probably the most important security policy of the recent decade because it changed Japan's security relationship with the US. Under this law, the restrictions and limitations about the previous role of the SDF in areas outside of Japan have been loosened to a large degree.

For the first time after World War II, Japanese warships have been dispatched to the Indian Ocean to provide non-combat support to American forces operating in the neighborhood of Afghanistan. This strengthening of the military relationship with the United States has been viewed by many Japanese as a potential violation of Article 9 of the Japanese Constitution,

which states that the Japanese people forever renounce war as a sovereign right of the nation and the threat or use of force as a means of settling international disputes. However, most Japanese see these changes as necessary in view of the greatly altered world situation.

It is possible that the events of 9/11 may have given Japan an excuse to become more active militarily and to reinforce its military ties with the US. China's military budget of about $ 80 billion has become the world's third largest, and North Korea's nuclear aspirations have been a thorn in the politics of East Asia. Hook, Gilson, Hughes & Dobson (2001) mention that "the continuing threat from North Korea has been used by Japan to legitimate the acquisition and development of a missile defense system (Hook and others 2001, 163).

Japan now has four Aegis destroyers (including the Kirishima which can track up to 200 aircraft and missiles simultaneously, and launch attacks on up to ten targets). Japan also is almost ready to deploy a dual-stage missile defense system, which consists of SM-3 launched from warships and PAC-3 launched from land. However, although this system was not deployed to threaten Japan's neighbors, it constitutes an important deterrent to a potential attack from North Korea, which has about 200 Rodong missiles capable of reaching any area of Japan.

Japan is also ready to revise the Japan-US Guidelines, which emphasize the strategic importance of the Taiwan Straits. China's anti-secession law mandates military action in case Taiwan decides to remain a free and independent nation. This has basically forced Japan to move closer to the US, and include Taiwan in a relatively recent joint statement issued by the two countries.

Concluding Comments

Japan is already, if not a nuclear state, at least a "para-nuclear weapons state" because it "would have no technological or material difficulties to produce nuclear weapons… could

produce nuclear weapons within a year's time… and on the strength of its nuclear industry and its stock-piles of weapon-grade plutonium, Japan can be considered as a virtual nuclear weapons state" (Schulman 2005, 5).

Japan has a present scientific, technological and industrial capability to build nuclear weapons. With the second largest world economy, highly developed infrastructure, and well-developed science and technology, Japan would have to make little efforts to produce atomic weapons and maybe even thermonuclear weapons if they decide to do so. In addition, the overpowering presence of China and the unreliable and irresponsible behavior of North Korea both are pushing Japan into becoming a nuclear power, although it is unlikely that Japan will do so, at least as long as its military partnership with the United States continues.

Actors and Perceptions

China

China has been rapidly increasing its military capabilities, especially since its turn toward "capitalist" development, mainly because of the cash dividends of the new and successful economic policies which have provided the necessary funds. China obviously is destined to become the giant of Asia, and among its political aspirations is to become the hegemonic power in the region, which Japan also entertains as a principal political and military objective.

Fortunately for Japan, China is also seen by most Asian countries as a potential threat to their national security. This could make Japanese rearmament more reasonable given the circumstances in the region, although not the possession of nuclear weapons. Japan's presence is stabilizing in the area when the magnificent economic and military power of China is considered. In addition, Japan's presence is neutralizing, because China and Japan need each other, and although both of them are fierce trade competitors, especially when trying to obtain the

necessary energy to fuel their development, Japan has the technology and China has an enormous market, relatively cheap labor, and so far a stable economic climate, regardless of the powerful image in the background of the Chinese Communist Party.

China's militarization has always worried both Japan and the United States. However, after China's adoption of capitalist economic policies and the explosive growth of its economy, China has been able to invest in military weapons and equipment so many resources, that this security concern has expanded to tremendous proportions. China has been increasing its military budget by more than ten percent per year since 1989, rapidly modernizing its military capabilities, and reaching the impressive amount of $US 80 billion, the world's third largest after the United States and Russia, and almost double the military budget of Japan, which is Asia's second largest defense budget. China has been acquiring modern weapons and technology from many countries, but mainly from Russia. China also has been urging the European Union to lift its arms embargo, which was imposed after the uprising of Beijing's Tiananmen Square in 1989 (Kim 2007, 34).

At the same time that China has been improving and strengthening its military strength, it has been studying carefully the military lessons of the recent decades: the Persian Gulf War in 1991, the US deployment to the Balkans in the late 1990s, and most recently, the swift destruction of Saddam Hussein's military forces in 2003 (Kim 2007, 35).

As a response to this renewal of China's military might, Japan has strengthened its military alliance with the United States, is participating in the development of the US missile system, has committed non-combatant troops in Iraq, and is going in the direction of reinterpreting or modifying its pacifist constitution to become a "normal" country. Japan now regards China as an economic and military threat (Mastanduno 2006, 125).

In December, 2004, Japan passed its New Outline for National Defense and a medium-term defense force development plan for the years 2005-2009, in which China, as well as North Korea, were mentioned as major threats. The document mentions that China is modernizing its nuclear and missile capabilities, as well as its naval and air forces, and expanding its area of operations at sea; and declared its decision to turn an "elementary defense force into a flexible defense one", and that Japan "could make the permanent legalization of sending troops overseas in cooperation with the United States and change in its three principles in exporting weapons" (Kim 2007, 35).

Concerns about Chinese military buildups are nothing new, but what is new is the alarming rate of growth of the Chinese military budget. For this reason, speculation about Japan's potential acquisition or development of nuclear weapons has been a constant topic of speculation. Hermen Kahn, in his book The Emerging Japanese Super State, concluded that the "Japanese will inevitably feel that Japan has the right and duty to achieve full superpower status and that this means possessing a substantial nuclear establishment" (Pyle 2007, 256).

Of course, Japan has not developed nuclear weapons and has continued to reaffirm its pacifist orientation, although is using a step-by-step approach to become a "normal" country. Japan's dispatch of its Self-Defense Forces to the Indian Ocean in November 2001 to give logistical support to the US-led military campaign in Afghanistan, in fulfillment of a Japanese anti-terrorist law enacted a month earlier, was severely criticized by both China and North Korea. North Korea said that "this is little short of a declaration of a war to the DPRK and China" (Kim 2007, 30).

China sees Japan as a military enemy but is unlikely to do anything different if Japan continues with the status quo. However, if Japan to declare itself a nuclear power, most likely it

will intensify its efforts not only to defend itself from Japanese missiles but also would be ready to destroy the Japanese islands if it becomes necessary. In such an eventuality, most likely China will continue helping the North Korean nuclear program and resist to participate in the Six-Country talks which so far have attempted to provide North Korea with funds and technological expertise for its development of energy in exchange for North Korea's destruction of its nuclear program.

South Korea

The relations between Japan and the Republic of Korea (ROK) or South Korea, were cordial, but strained for most of the Cold War period. The two nations still have a territorial dispute over the so-called 'Tokto and Dokdo', which South Korea calls 'Takeshima,' which are islets located between Japan and South Korea under the sovereign control of South Korea, but which Japan claims as its own; and this dispute has been an ongoing source of stress between the two nations for years.

In 1905, Japan incorporated 'Takeshima' into the Shimane Prefecture, and claimed it as Japanese. However, this claim was made at a time when Japan was colonizing the Korean Peninsula, which Japan had annexed in 1910. When Japan's colonization ended in 1945 with its defeat in World War II, it lost control over the islets. Tokto and Dokto consist of two small islets and reefs with a total area of 0.23 square kilometer, which South Korea claims and where it has stationed coast guard personnel since 1954. Japan claims that this area is within its EEZ (exclusive economic zone), but South Korea denies Japan's claims over this territory. According to the UN Convention on the Law of the Sea, the exclusive economic zones of both nations overlap, but the two nations have failed to reach an agreement on how to demarcate their respective exclusive economic zones.

In 1981, when both nations were discussing the establishment of diplomatic relations, South Korean President Chun demanded that Japan should provide a massive US$ 6 billion aid package to South Korea in order to make amends for the colonial past. The demand apparently did not seem to surprise Japan very much, as it had been receiving those demands from smaller countries in the area for quite some time. Japan pledged US $ 4 billion in ODA (Hook and others 2001, 176), and this amount was accepted by the South Korean authorities, which led to the normalization of relations. In addition, Japan also pledged additional economic assistance amounting to half a billion dollars over ten years to settle claims from the period (Pyle 2007, 76).

Japan and South Korea had mutual interests to establish diplomatic relations, but the United States was also very interested in having its two main allies in the area to make amendments and move ahead. The influence of the United States on both nations is substantial. The United States basically has guaranteed the security of both Japan and South Korea since the end of World War II. The division of the Korean Peninsula into a communist North and the capitalist, although not always democratic South, has been the main justification for the deployment of 100,000 American troops in Japan and Korea (Pyle 2007, 344).

South Korea is a capitalist, democratic nation presently within the sphere of influence of the United States and aligned with Japan because of the powerful nuclear umbrella provided to the two nations by the American presence in the region. However, if Japan were to become a nuclear power, most likely only because of a potential American withdrawal from the region, South Korea would perceive Japanese rearmament negatively, and would probably react by developing its own nuclear program.

North Korea

The nuclear ambitions of North Korea have been known for quite some time. In fact, it seems that the North Korean authorities have repeatedly used the nuclear argument in order to extort concessions from the United States, Japan, Russia, and even to a certain extent from China, which has declared that the North Korean missile and nuclear tests have made the situation in the region more "complex and challenging" (Kim 2007, 24).

The North Korean authorities not only admitted that they had developed nuclear weapons, but even declared that they had tested one of its atomic bombs. The unpredictability of the North Korean regime is a thorn in Japanese politics, and with good reason. Japan is within distance for a potential nuclear attack from North Korea. In fact, as recent as August 31, 1998 the North Koreans sent a three-stage rocket flying over the Japanese island of Honshu, which landed in the Pacific Ocean, about 1022 miles from the launching site, apparently with the unsuccessful attempt of placing a satellite in orbit (Chinworth 2002, 109).

In response to the rocket test, Japan announced that it would develop its own surveillance satellite system, and the relations between the two countries deteriorated to such an extent that three years later, in 2001, the Japanese Maritime Self-Defense Force saw a North Korean spy ship in Japan's jurisdictional waters and immediately sank it, which constituted the first use of military force by Japan since the end of World War II (Pyle 2007, 296-297).

In addition, after the missile launches, Japan began economic sanctions by banning the entry of North Korean officials, ship crews, chartered flights and the only direct passenger ferry between the two nations, the North Korean vessel Mangyongbong-92 (Kim 2007, 30). Japan also announced that it would not provide any more food aid to North Korea. However, in 2000, the Japanese government decided to give another half-million tons of rice to this country (Kawashima 2005, 83).

Talks within Japan political circles have debated publicly the potential wisdom of Japan's acquiring nuclear weapons for quite some time, but these talks intensified in the wake of North Korea's nuclear test in October 2006. It has been pointed out that such debates could put pressure on China to use its influence with North Korea so that the North Korean leaders do not create a crisis in the region. The debates have generated so much publicity that even Kofi Annan, at the time UN Secretary General, expressed the opinion that Japan should restrain itself from having such debates about the possible possession of nuclear weapons, and should continue with its longstanding non-nuclear policy. The North Koreans have expressed that Japan is protected by the US "nuclear umbrella," and that Japan constitutes a serious menace to the sovereignty and integrity of North Korea. Many people also believe that such public debates could jeopardize global nuclear nonproliferation efforts because it could encourage other nations to do the same.

The development of nuclear weapons by North Korea has forced Japan to weight and consider all its options. Japan can either become the victim of blackmail by the North Koreans or make the difficult decision of building its own nuclear capability. Both options are likely to create an intensive reaction among the Japanese population (Kawashima 2005, 91). Japan would find extremely difficult to resist obtaining nuclear weapons of its own also if a united Korea were to develop them or obtain them from North Korea after unification. Japan's former vice minister of foreign affairs expressed his concerns about the North Korean nuclear program saying that it was "a truly nightmarish and totally unacceptable development" that would subject Japan to "an agonizing choice between accepting the position of easy victim of nuclear blackmail or developing its own nuclear capacity, which would trigger internal turmoil in Japan" (Pyle 2007, 345).

North Korea has the following missiles, which it can use to deliver nuclear weapons: a) TAEPODONG-2 (ICBM): This is believed to be the most advanced missile, which has a range of up to 9,320 miles. This missile could potentially hit the mainland United States with a small payload, but it is not believed to be very accurate at the present time; b) TAEPODONG-1: This is the missile which is believed to have been used in August 1998, and which landed close to Japan's eastern coast after having traveled a distance of approximately 1,022 miles; c) RODONG: This type of missile is important in North Korea's missile arsenal. It is believed that North Korea has at least 200 Rodong missiles. These missiles have a smaller range – approximately 620 miles – but enough to hit Japan; and d) SCUD: This type of missiles has the shortest range, maybe enough to target South Korea. North Korea has about 600 missiles of this type.

North Korea's nuclear program, however, is not Japan's only security problem. North Korea most certainly possesses chemical and biological weapons. Defectors from North Korea have testified that the country produces about 20 different chemical agents for military use, especially mustard, phosgene, sarin and the V-agents, potent poisons which can wipe out entire communities (Bermudez 2001, 231). Current estimates of the inventory suggest that North Korea has between 2,500 and 5,000 tons of chemical weapons of several kinds, and that they can be loaded in a warhead of the ballistic missiles (Bermudez 2001, 231). North Korea also produces about a dozen different strains of bacteria, including the bacteria that produce anthrax, cholera, botulism, hemorrhagic fever, plague, smallpox, typhoid and yellow fever (Bermudez 2001, 234).

North Korean nuclear, chemical and bacteriological programs represent a clear threat to the security of the region. However, if Japan were to declare itself a nuclear state, North Korea most likely will pursue its nuclear program with the aid of China because both North Korea and Japan

will be greatly affected. Japan is still perceived in the eyes of both China and North Korea as a militarized aggressive neighbor, and the memories of World War II are still fresh.

Research Design

Although there are several analytical methods to conduct a predictive study, in this case the Lockwood Analytical Method for Prediction (LAMP) has been selected. This method is best suited for studies such as this which are based on international predictions and processes. An important distinction between the LAMP method and other analytical methods is that it forces the analyst to consider the perceptions of all the actors involved in a particular scenario instead of focusing on only one single perspective. Another important characteristic of the LAMP method is that it is not a quantitative methodology, which is not particularly suited for this type of analysis. The LAMP method focuses on relative probabilities and is a 12-step program that includes:

1. Determine the issue for which you are trying to predict the most likely future.
2. Specify the national actors involved.
3. Perform an in-depth study of how each national actor perceives the issue in question.
4. Specify all possible courses of action for each actor.
5. Determine the major scenarios within which you will compare the alternate futures.
6. Calculate the total number of permutations of possible alternate futures for each scenario.
7. Perform a pairwise comparison for all alternate futures to determine their relative probability.
8. Rank the alternate futures for each scenario from highest relative probability to the lowest based on the number of votes received.
9. Assuming that each future scenario occurs, analyze each alternate future in terms of its consequences for the issue in question.

10. Determine the focal events that must occur in our present in order to bring about a given alternate future.
11. Develop indicators for the focal events.
12. State the potential of a given alternate future to "transpose" into another alternate future.

Limitations

Although LAMP is specially suited for this type of study, there is always cause for concern in predictive studies. LAMP makes an attempt to address the "free will" of the actors involved but it is extremely difficult or impossible to forecast every possible behavior of every actor. The perception of each actor is based on the analyst's understanding of those perceptions and might be consciously or unconsciously biased. However, the researcher has made an effort to avoid this by conducting an exhaustive research about the behavior of each actor in the past and the present according to the published literature. The sources used by the researcher, of course, also carry the possibility of bias and error from their respective authors. Therefore, the author can only assure that a conscious effort has been made to avoid those limitations.

Potential Courses of Action for Interested Actors

The three major neighboring states which are directly and negatively affected by Japan becoming a nuclear power are China, South Korea and North Korea, although other minor states in the region, specifically the ASEAN nations would also resent Japan from adopting this policy.

The LAMP methodology requires, once the actors and their perceptions of the events have been identified, to determine all the possible courses of action for the interested actors. While there are innumerable potential permutations of behavior which are open and available to the interested actors, it is possible to narrow those potential actions to a small number of actions available to all actors in the analysis.

For China, South Korea and North Korea there are really four potential courses of action: to use coercion or diplomatic efforts to discourage Japan from developing nuclear weapons, to intensify their efforts to become nuclear states or to increase their nuclear capabilities as in the case of China, to use force to deter Japan from developing nuclear weapons, or to do nothing. The last potential action, to do nothing, is unlikely because this scenario would mean that the interested actors have no impact on Japan's behavior and, therefore, this remote possibility is not included in this analysis.

Major Scenarios

In the LAMP methodology, the potential courses of actions for Japan are considered "scenarios", and they represent the different situations which the analyst will need to investigate.

For Japan, there are three major scenarios that will be considered: (a) Japan starts a nuclear weapons program and declares itself a nuclear power; (b) Japan continues and maybe intensifies the development of nuclear energy program while cooperating with international agency requests for transparency; or (c) Japan does not pursue an independent nuclear weapons program. Each scenario posed by Japan would produce a very different future and very different responses from each of the three interested actors. However, in order to effectively predict the most likely future, an analysis of the possible permutations of actions by the interested actors becomes necessary in relation to each of the three potential scenarios posed by Japan's behavior.

Permutations of Behavior

In the LAMP methodology, the equation for determining the number of how many alternate futures are possible for each interested actor is $xy = z$. In this equation, "x" equals the number of actions available to each actor, "y" equals the number of actors involved and "z" equals the number of alternate futures to be compared. In this study, I am considering three possible courses

of action for each of the three interested actors involved: the People's Republic of China (China), the Republic of Korea (South Korea) and the People's Democratic Republic of Korea (North Korea). Japan is not included because its courses of action are the scenarios. In this manner, the equation for this analysis is 3(3) = 27. This means that there are 27 possible alternate futures to compare for China, North Korea and South Korea, for each of the three scenario posed by Japan.

The next step is to create a table of alternate future permutations, and use these to perform a pairwise comparison of all the alternate future permutations for each scenario, which will be abbreviated in the following way:

Pursues independent nuclear capabilities – (NC)

Does not pursue independent nuclear capabilities - (ZC)

Pursues additional peaceful nuclear capabilities only – (PC)

The three scenarios are:

Scenario I: Japan pursues independent nuclear capabilities

Scenario II: Japan does not pursue independent nuclear capabilities

Scenario III: Japan pursues additional peaceful nuclear capabilities only

Table 1 – Alternative Future Permutations

Table 1 - Alternate Future Permutations			
Possible Future	China	SK	NK
1	NC	NC	NC
2	NC	NC	PC
3	NC	PC	NC
4	PC	NC	NC
5	NC	PC	PC
6	PC	NC	PC
7	PC	PC	NC
8	PC	PC	PC
9	NC	NC	ZC

10	NC	ZC	NC
11	ZC	NC	NC
12	NC	ZC	ZC
13	ZC	NC	ZC
14	ZC	ZC	NC
15	ZC	ZC	ZC
16	PC	ZC	ZC
17	PC	ZC	PC
18	ZC	PC	PC
19	ZC	ZC	PC
20	PC	ZC	ZC
21	ZC	PC	ZC
22	NC	ZC	PC
23	NC	PC	ZC
24	PC	ZC	NC
25	PC	NC	ZC
26	ZC	PC	NC
27	ZC	NC	PC

NC - Pursues independent nuclear weapons capabilities
ZC - Does not pursue independent nuclear weapons capabilities
PC - Pursues additional peaceful nuclear energy capabilities only

Pairwise Comparison for Each Scenario

Using Table 1 (Alternative Futures Table) it is now possible to conduct a pairwise comparison of each alternate future for each scenario. This procedure is done by comparing the likelihood of each alternate future against each other possible future. Alternate Future # 1 is compared to Alternate Future # 2 in this specific scenario to determine which is more likely to occur. This comparison is made by the analyst based on his or her understanding of the viewpoints and perspectives of the actors involved. The comparison continues until all possible futures have been compared to each other.

The LAMP equation used to determine how many pairwise comparisons are necessary is: x= (n-1)-(n-2)…+ (n-n). In this equation, “n” is the total number of alternate futures to be analyzed and “x” is the total number of pairwise comparisons to be made. In the present analysis, “n” equals 27 and, therefore, “x” equals 351 pairwise comparisons for each scenario. To keep track

of this analysis, a new table is made adding a fourth column to the alternate futures table for each scenario and labeling it “votes”, which indicate the number of votes received. The results of these votes indicates which alternate future seems more probable than the others and allows for further analysis of the most likely future for each of the three scenarios.

Tables 2 through 4 contain the voting results of the pairwise comparison analysis of all the alternate futures related to the three scenarios posed by Japan.

Table 2 - Alternate Futures Pairwise Comparison

Scenario I : Pursues independent nuclear energy capabilities				
Alternate Future #	China	SK	NK	Votes
1	NC	PC	NC	3
2	NC	PC	PC	5
3	PC	PC	NC	7
4	PC	PC	PC	8
5	NC	PC	ZC	23
6	ZC	PC	NC	26
7	NC	NC	NC	1
8	NC	ZC	NC	10
9	ZC	PC	PC	18
10	NC	NC	PC	2
11	NC	ZC	PC	22
12	PC	NC	NC	4
13	PC	ZC	NC	24
14	ZC	PC	ZC	21
15	PC	NC	PC	6
16	PC	ZC	PC	17
17	NC	NC	ZC	9
18	NC	ZC	ZC	12
19	ZC	NC	NC	11
20	ZC	ZC	NC	14
21	ZC	NC	PC	27
22	ZC	ZC	PC	19
23	PC	NC	ZC	25
24	PC	ZC	ZC	16
25	PC	ZC	ZC	20
26	ZC	NC	ZC	13

27	ZC	ZC	ZC	15

Total number of votes: 351

NC - Pursues independent nuclear weapons capabilities
ZC - Does not pursue independent nuclear weapons capabilities
PC - Pursues additional peaceful nuclear energy capabilities only

Table 3

Alternate Futures Pairwise Comparison

Scenario II: Does not pursue independent nuclear weapons capabilities				
Alternate Future #	China	SK	NK	Votes
1	NC	NC	NC	12
2	NC	NC	PC	8
3	NC	PC	NC	3
4	PC	NC	NC	15
5	NC	PC	PC	1
6	PC	NC	PC	10
7	PC	PC	NC	4
8	PC	PC	PC	2
9	NC	NC	ZC	17
10	NC	ZC	NC	13
11	ZC	NC	NC	24
12	NC	ZC	ZC	18
13	ZC	NC	ZC	26
14	ZC	ZC	NC	25
15	ZC	ZC	ZC	27
16	PC	ZC	ZC	20
17	PC	ZC	PC	11
18	ZC	PC	PC	6
19	ZC	ZC	PC	23
20	PC	ZC	ZC	21
21	ZC	PC	ZC	14
22	NC	ZC	PC	9
23	NC	PC	ZC	5
24	PC	ZC	NC	16
25	PC	NC	ZC	19
26	ZC	PC	NC	7
27	ZC	NC	PC	22

Total number of votes: 351

NC - Pursues independent nuclear weapons capabilities

ZC - Does not pursue independent nuclear weapons capabilities
PC - Pursues additional peaceful nuclear energy capabilities only

Table 4
Alternate Futures Pairwise Comparison
Scenario III – Pursues additional peaceful nuclear energy capabilities only

Alternate Future #	China	SK	NK	Votes
1	NC	NC	NC	7
2	NC	NC	PC	10
3	NC	PC	NC	3
4	PC	NC	NC	18
5	NC	PC	PC	1
6	PC	NC	PC	11
7	PC	PC	NC	4
8	PC	PC	PC	2
9	NC	NC	ZC	22
10	NC	ZC	NC	15
11	ZC	NC	NC	25
12	NC	ZC	ZC	19
13	ZC	NC	ZC	27
14	ZC	ZC	NC	24
15	ZC	ZC	ZC	26
16	PC	ZC	ZC	20
17	PC	ZC	PC	8
18	ZC	PC	PC	6
19	ZC	ZC	PC	13
20	PC	ZC	ZC	21
21	ZC	PC	ZC	14
22	NC	ZC	PC	5
23	NC	PC	ZC	9
24	PC	ZC	NC	17
25	PC	NC	ZC	23
26	ZC	PC	NC	12
27	ZC	NC	PC	16
Total number of votes:				351

NC - Pursues independent nuclear weapons capabilities
ZC - Does not pursue independent nuclear weapons capabilities
PC - Pursues additional peaceful nuclear energy capabilities only

Ranking of the Alternative Futures

Tables 2, 3 and 4 from the previous section show each alternate future and the number of votes that those same alternate futures received in the pairwise comparisons for each of the three scenarios posed by Japan. The next step in the analysis is to rank the alternate futures from the highest relative probability to the lowest based on the number of votes received by each future. Tables 5, 6, and 7 are the alternate futures tables for each scenario arranged from the highest to the lowest number of votes.

Table 5

Scenario I : Pursues independent nuclear energy capabilities				
Alternate Future #	China	SK	NK	Votes
7	NC	NC	NC	27
10	NC	NC	PC	26
1	NC	PC	NC	25
12	PC	NC	NC	24
2	NC	PC	PC	23
15	PC	NC	PC	22
3	PC	PC	NC	21
4	PC	PC	PC	20
17	NC	NC	ZC	19
8	NC	ZC	NC	18
19	ZC	NC	NC	17
18	NC	ZC	ZC	16
26	ZC	NC	ZC	15
20	ZC	ZC	NC	14
27	ZC	ZC	ZC	13
24	PC	ZC	ZC	12
16	PC	ZC	PC	11
9	ZC	PC	PC	10
22	ZC	ZC	PC	9
25	PC	ZC	ZC	8
14	ZC	PC	ZC	7
11	NC	ZC	PC	6
5	NC	PC	ZC	5
13	PC	ZC	NC	4
23	PC	NC	ZC	3
6	ZC	PC	NC	2

21	ZC	NC	PC	1

Total number of votes: 351

NC - Pursues independent nuclear weapons capabilities
ZC - Does not pursue independent nuclear weapons capabilities
PC - Pursues additional peaceful nuclear energy capabilities only

Table 6

Scenario II: Does not pursue independent nuclear weapons capabilities				
Alternate Future #	China	SK	NK	Votes
5	NC	PC	PC	27
8	PC	PC	PC	26
3	NC	PC	NC	25
7	PC	PC	NC	24
23	NC	PC	ZC	23
18	ZC	PC	PC	22
26	ZC	PC	NC	21
2	NC	NC	PC	20
22	NC	ZC	PC	19
6	PC	NC	PC	18
17	PC	ZC	PC	17
1	NC	NC	NC	16
10	NC	ZC	NC	15
21	ZC	PC	ZC	14
4	PC	NC	NC	13
24	PC	ZC	NC	12
9	NC	NC	ZC	11
12	NC	ZC	ZC	10
25	PC	NC	ZC	9
16	PC	ZC	ZC	8
20	PC	ZC	ZC	7
27	ZC	NC	PC	6
19	ZC	ZC	PC	5
11	ZC	NC	NC	4
14	ZC	ZC	NC	3
13	ZC	NC	ZC	2
15	ZC	ZC	ZC	1

Total number of votes: 351

NC - Pursues independent nuclear weapons capabilities
ZC - Does not pursue independent nuclear weapons capabilities
PC - Pursues additional peaceful nuclear energy capabilities only

Table 7

Scenario III : Pursues additional peaceful nuclear energy capabilities only

Alternate Future #	China	SK	NK	Votes
8	PC	PC	PC	27
5	NC	PC	PC	26
3	NC	PC	NC	25
7	PC	PC	NC	24
22	NC	ZC	PC	23
18	ZC	PC	PC	22
1	NC	NC	NC	21
17	PC	ZC	PC	20
23	NC	PC	ZC	19
2	NC	NC	PC	18
6	PC	NC	PC	17
26	ZC	PC	NC	16
19	ZC	ZC	PC	15
21	ZC	PC	ZC	14
10	NC	ZC	NC	13
27	ZC	NC	PC	12
24	PC	ZC	NC	11
4	PC	NC	NC	10
12	NC	ZC	ZC	9
16	PC	ZC	ZC	8
20	PC	ZC	ZC	7
9	NC	NC	ZC	6
25	PC	NC	ZC	5
14	ZC	ZC	NC	4
11	ZC	NC	NC	3
15	ZC	ZC	ZC	2
13	ZC	NC	ZC	1
Total number of votes:				351

NC - Pursues independent nuclear weapons capabilities
ZC - Does not pursue independent nuclear weapons capabilities
PC - Pursues additional peaceful nuclear energy capabilities only

A quick view at tables 5, 6 and 7 shows that within each scenario there are some patterns which become evident. In the next section, an analysis of the five alternative futures receiving the most votes within each scenario will be discussed and analyzed.

Analysis of Alternate Futures

Scenario I: Japan pursues independent nuclear weapons capabilities

Scenario I is the most detrimental scenario to international and regional stability, with Japan openly becoming a nuclear power and thus violating the Non-Proliferation Agreement.

Alternate Future # 7: All three countries – China, South Korea and North Korea – decide to either continue or start developing their nuclear weapons capabilities.

The most likely scenario if Japan were to pursue independent nuclear weapons capabilities would be that all three major countries in the region would also decide either to start (South Korea) or to continue their nuclear weapons programs (China and North Korea). This decision on the part of Japan will also encourage some other minor actors (such as Thailand, Indonesia and even Vietnam) to entertain the possibility of pursuing their own nuclear weapons programs, with the region losing the apparent stability produced by the presence of US forces in the region.

Alternate Future # 10: China and South Korea continue the development of their nuclear weapons program and North Korea pursues the development of nuclear energy capabilities.

In this scenario North Korea has already exchanged its present nuclear program for financial aid and other concessions and remains undisturbed by Japan's declaration of becoming a nuclear power. There is a new leadership in North Korea that worries more about the country's economic development than about restarting its nuclear weapons program. China has extended its nuclear umbrella to protect North Korea against any potential aggression by Japan. However,

China has intensified the development of nuclear weapons and South Korea has started its own independent nuclear weapons programs mostly in response to Japan's becoming a nuclear power.

Alternate Future # 1: China and North Korea continue the development of their nuclear weapons program and South Korea pursues the development of nuclear energy capabilities.

In this scenario China and North Korea, countries which already have been pursuing a nuclear weapons program just continue and perhaps intensify it. However, South Korea decides on the pacific alternative of developing only its nuclear energy capabilities. This could be motivated by a South Korean leadership which has established more intimate relationship with Japan as a consequence of collaborating during the long years in which American troops were present in South Korea, or because such troops are still stationed in South Korea and the United States government has threatened to withdraw its forces if South Korea were to develop a nuclear weapons program and make the situation in the area still more unstable and volatile.

Alternate Future # 12: North and South Korea either start or continue the development of their nuclear weapons capabilities while China concentrates on the development of nuclear energy capabilities.

In this scenario the two Koreas, the communist North and the democratic and capitalist South either start or continue the development of nuclear weapons capabilities, and although China is already a nuclear power it decides instead to continue the development of its nuclear energy capabilities in an effort to support its rapidly growing economy. This alternative future does not contemplate that China will not continue having nuclear weapons, which it means is that the country's main efforts will be dedicated to improve its economy rather than aggressively pursue more nuclear weapons in retaliation for Japan's becoming a nuclear power.

Alternate Future # 2: China continues the development of its nuclear weapons capabilities while South Korea and North Korea pursue only the development of their nuclear energy capabilities.

In this scenario China reacts to Japan's decision to have nuclear weapons with an intensification of its military buildup which includes the further development and sophistication of nuclear weapons while the two Koreas, for different reasons, decide to pursue only the development of their nuclear energy capabilities. South Korea will still be under the protection of the United States, American forces will still continue stationed in South Korea and the United States has threatened to withdraw its forces if South Korea becomes another nuclear power. North Korea has already accepted a beneficial agreement of financial and technical aid in exchange for stopping and dismantling its nuclear weapons program; and the new Korean leadership is more interested in the economic development of the country than in reacting aggressively to the Japanese decision to become a nuclear state.

Scenario II: Japan does not pursue independent nuclear weapons capabilities

This scenario resembles the status quo, which although is not deprived of problems, represents the actual world in which we live right now. In this situation, the United States continues with its military presence in the region and continues to include Japan and South Korea under the protection of its nuclear umbrella. China continues its vigorous military buildup financed by its rapidly increasing economy but is still unlikely to threaten the United States for many years to come because of the inferiority of its forces in relation to the United States; and North Korea's nuclear program continues "on" and "off" under the capricious behavior of the North Korean leaders, tamed only by the Six-Country talks and by the pressure exercised on North Korea by its important neighbors, including China.

Alternate Future # 5: China continues the development of its nuclear weapons program but both South Korea and South Korea pursue peaceful nuclear energy capabilities only.

In this scenario China reacts to Japan's decision to have nuclear weapons with an intensification of its military buildup which includes the further development and sophistication of nuclear weapons while the two Koreas, for different reasons, decide to pursue only the development of their nuclear energy capabilities. South Korea will still be under the protection of the United States, American forces will still continue stationed in South Korea and the United States has threatened to withdraw its forces if South Korea becomes another nuclear power. North Korea has already accepted a beneficial agreement of financial and technical aid in exchange for stopping and dismantling its nuclear weapons program; and the new Korean leadership is more interested in the economic development of the country than in reacting aggressively to the Japanese decision to become a nuclear state.

Alternate Future # 8: All three actors – China, South Korea and North Korea – pursue peaceful nuclear energy capabilities only.

In this scenario, Japan's decision to have an independent nuclear weapons program does not make any of the main actors react in the same way, but all of them decide instead to pursue peaceful nuclear energy capabilities only, maybe knowing that those nuclear activities could also help in the future if a decision is made to develop or to increase efforts in the development of nuclear weapons capabilities.

Alternate Future # 3: China and North Korea continue the development of their nuclear weapons program but South Korea pursues only peaceful nuclear energy capabilities.

In this scenario China and North Korea, countries which already have been pursuing a nuclear weapons program just continue and perhaps intensify it. However, South Korea decides on the

pacific alternative of developing only its nuclear energy capabilities. This could be motivated by a South Korean leadership which has established more intimate relationship with Japan as a consequence of collaborating during the long years in which American troops were present in South Korea, or because such troops are still stationed in South Korea and the United States government has threatened to withdraw its forces if South Korea were to develop a nuclear weapons program and make the situation in the area still more unstable and volatile.

Alternate Future # 7: China and South Korea continue the development of additional peaceful nuclear energy capabilities only while North Korea continues the development of its nuclear weapons program.

In this scenario China has made some progress moving toward democracy although the ruling communist party continues at the helm of the government but now allowing greater personal freedom; and both China and South Korea pursue the pacific route of developing peaceful nuclear energy capabilities. However, the situation in North Korea has not improved and the communist regime, now more isolated than ever because of the changes in China, continues the development of its nuclear weapons programs.

Alternate Future # 23: China continues the development of its nuclear weapons program, South Korea pursues additional peaceful nuclear energy capabilities only and North Korea does not pursue an independent nuclear weapons capability.

In this scenario, China continues as usual, pushing ahead with its militarization program which includes the development of its nuclear weapons program, but South Korea, under the protection of the United States, concentrates only on pursuing nuclear energy capabilities; and North Korea, now dedicated to built its economy after a successful agreement has been reached

to dismantle its nuclear program, is not interested in dedicating large sums from its scarce resources to start a new nuclear weapons program.

Scenario III: Japan pursues additional peaceful nuclear energy capabilities only

Alternate Future # 8: All three countries – China, South Korea and North Korea – continue the development of their peaceful nuclear energy programs.

In this scenario, Japan's decision to have an independent nuclear weapons program does not make any of the main actors react in the same way, but all of them decide instead to pursue peaceful nuclear energy capabilities only, maybe knowing that those nuclear activities could also help in the future if a decision is made to develop or to increase efforts in the development of nuclear weapons capabilities.

Alternate Future # 5: China continues and intensifies the development of its nuclear weapons program while South Korea and North Korea continue the development of their peaceful nuclear energy programs only.

In this scenario China reacts to Japan's decision to have nuclear weapons with an intensification of its military buildup which includes the further development and sophistication of nuclear weapons while the two Koreas, for different reasons, decide to pursue only the development of their nuclear energy capabilities. South Korea will still be under the protection of the United States, American forces will still continue stationed in South Korea and the United States has threatened to withdraw its forces if South Korea becomes another nuclear power. North Korea has already accepted a beneficial agreement of financial and technical aid in exchange for stopping and dismantling its nuclear weapons program; and the new Korean leadership is more interested in the economic development of the country than in reacting aggressively to the Japanese decision to become a nuclear state.

Alternate Future # 3: China and North Korea continue the development of their nuclear weapons programs while South Korea pursues only the development of its pacific nuclear energy program.

In this scenario both China and North Korea, the two countries that had nuclear weapons programs in the past continue developing them; while South Korea, protected by the American troops stationed in its soil, decides to pursue peaceful nuclear energy capabilities only because the South Koreans do not feel that developing nuclear weapons is the right response to Japan's provocation.

Alternate Future # 7: China and South Korea continue the development of peaceful nuclear energy capabilities while North Korea continues the development of its nuclear weapons program.

In this scenario China has made some progress moving toward democracy although the ruling communist party continues at the helm of the government but now allowing greater personal freedom; and both China and South Korea pursue the pacific route of developing peaceful nuclear energy capabilities. However, the situation in North Korea has not improved and the communist regime, now more isolated than ever because of the changes in China, continues the development of its nuclear weapons programs.

A**lternate Future # 22:** China continues the development of its nuclear weapons programs, South Korea does not pursue an independent nuclear weapons program and North Korea pursues only peaceful nuclear energy capabilities.

This future scenario contemplates North Korea as having eliminated its nuclear program after the successful implementation of an agreement among the six negotiating nations and has received enough financial and technological aid to make it desist from engaging anew in another

nuclear weapons program. China and South Korea basically continue the present approach, with China further developing its nuclear weapons and South Korea, under the protective umbrella of the United States, relies on the American troops stationed in its territory to defend itself against any potential aggression. With Japan and the United States still as allies, South Korea does not fear an attack from Japan.

Transposition of Alternate Futures

Alternate futures may transpose into one another if actions by one actor change the perceptions of one or more of the involved actors. If this transposition happens, it could change the relative probability of all possible futures as time and action progresses. The possibility of transposition of the top five alternate futures within each scenario is briefly discussed below:

Scenario I: Japan pursues independent nuclear weapons capabilities

The five most likely futures in this scenario are futures number 7, 10, 1, 12 and 2. However, there could be events which transpose one future into another. If Japan were to pursue nuclear weapons there will be an intense opposition from all of Japanese's neighbors, including the most important actors analyzed in this paper which are China, South Korea and North Korea. All those nations most likely will become nuclear or continue their nuclear programs and most likely intensify them as a reaction to the Japanese acts. However, if the United States continues involved in the region, if American troops are still stationed in the Korean peninsula, it is unlikely that Japan will pursue nuclear weapons. Therefore, a focal event is whether the United States is still present in the area or not. If the United States decided to leave the region by withdrawing its troops from Japan and South Korea, Japan would become worried about its security and could decide to develop an autonomous nuclear weapons program to counter the powerful presence of China. However, if the United States continues involved in the region it is

unlikely that Japan will pursue this route. Moreover, if the United States, after making a declaration that they will withdraw from the region reverses this course and declares that they would stay, Japan will see this hesitancy on the part of the United States, but most likely do nothing except what it has been doing of developing its nuclear energy capabilities.

Future No. 10, where both China and South Korea pursue nuclear weapons while North Korea pursues only pacific nuclear energy could translate into Future No. 3 because the leaders in North Korea once more repudiate the agreement reached with the six nations involved in the negotiations for dismantling its nuclear program, and go back to continue its nuclear weapons program. On the other hand, if no agreement has been reached, both North Korea and China will continue the development of nuclear weapons while South Korea continues the development of nuclear energy for pacific use. The only factor which could make South Korea to develop nuclear weapons would be the withdrawal of American forces from South Korea, which could transpose future No. 1 into future No. 7.

Future No. 12 will happen only if China achieves regional domination and the United States has withdrawn from the area. In this situation both Koreas will pursue nuclear weapons or maybe a unified Korea will pursue nuclear weapons because it fears both Japan and China. Future No. 2 also has China increasing its nuclear weapons capabilities with the two Koreas pursuing nuclear energy development, a situation more likely to happen with the American presence in the area after an agreement has been reached with the North Koreans about dismantling their nuclear weapons program.

Scenario II: Japan does not pursue independent nuclear weapons capabilities

As long as the United States remains involved in the area, Japan is unlikely to pursue an independent nuclear weapons program both because of its own Constitution and because it

realizes that pursuing this objective will affect negatively its trade relations with the ASEAN nations, the two Koreas and China. In any event, Japan has the capability to produce nuclear weapons any time it decides to do so, probably in a relatively short period of time of about one year. Japan has an advanced network of nuclear power plants and generates a substantial portion of its energy from nuclear sources. As long as the status quo continues in the area Japan will continue to pursue only this objective.

If Japan does not pursue nuclear weapons this also probably means that the United States continues involved in the area, and this will be enough to calm down any anxieties on the part of South Korea. Future No. 8, which contemplates the possibility of the three actors pursuing only nuclear energy for pacific purpose assumes the preponderance of China in the region. This could happen without Japan becoming very worried as long as it is still protected by the nuclear umbrella of the United States. Future No. 8 could transpose into Future No. 5 only if China feels that it is getting behind in the nuclear race and that the continued presence of the United States in the area is perceived as an intromission into its sphere of influence. Future No. 3 could transpose into Future No. 5 if North Korea is able to agree on a plan to dismantle its nuclear weapons program and abandons its “on” and “off” policy with the main objective of forcing financial concessions from the Western powers, mostly South Korea, Japan, and the United States. A more serious North Korean government able to make an agreement and fulfill its responsibilities under the agreement is likely to move Future No. 3 to Future No. 5.

Future No. 7 can occur only after China assumes complete hegemony in the region, something unlikely to happen as long as the United States is present in the area. The United States at this point is unlikely to abandon the area, but a declining United States and isolationist feelings at home could make the decision of bringing the troops home, probably as a

consequence of a monumental reduction of US military forces and budget. This obviously would have drastic and very negative repercussions in the area and would mean leaving China to do as it pleases with Taiwan and in the area, maybe only contained by South Korea and Japan. As long as the United States remains engaged in the area it is unlikely that Future No. 7 will occur. The same is true for future No. 23. This contemplates an even higher development of Chinese military power to the extent that both China and North Korea decide to "do nothing" in reaction to Japan obtaining nuclear weapons. One variable important in the two futures (No. 7 and No. 23) is the economic development of China, whether China is able to continue its meteoric economic development now that the world has entered into a recession and when the United States, which constitutes the most important market for Chinese products, is also going through tough economic times. As long as the Chinese economy continues to grow, the Chinese will continue dedicating a substantial portion of their additional income to increase and modernize its military capabilities, including the further development of nuclear weapons capability.

Scenario III: Japan pursues additional peaceful nuclear energy capabilities only

This scenario is only a slight alteration from the status quo. Japan has been developing nuclear energy capabilities for quite some time, and as long as they are protected militarily by the United States they will probably continue to do so. Nuclear energy is a relatively cheap substitute for imported oil and the Japanese dependence on foreign oil is very high because it does not produce any within its territory. Therefore, this scenario involves only a slight reinforcement or intensification in the Japanese objective of developing nuclear energy, maybe with the purpose of exporting energy to the ASEAN nations or to substitute nuclear energy for other types of energy in processes that now are being done with oil or other type of energy.

This scenario is a peaceful scenario which means that both China and the United States contain each other in the region, but a situation which creates a stable environment for increased trade and prosperity. However, any potential political conflict, such as the potential declaration of independence on the part of Taiwan, or the declaration of Japan to occupy the islands disputed with China in the Sea of China could cloud the tranquility and generate transmutations from one future to another. On the other hand, the peaceful solution of those conflicts could transpose the futures to other futures, such as alternate future No. 5, where two nations pursue only nuclear energy, or alternative future No. 3, where at least one nation pursue only nuclear energy.

Conclusion

The most important variable in an assessment of the likely scenarios that could eventually happen if Japan were to become a nuclear power is the position and the attitude of the United States. If the United States continues involved in the region, and American troops continue stationed in Japan and South Korea, it is unlikely that Japan will develop an independent nuclear weapons program. To do that the Japanese government will have to convince its population about the need to acquire those weapons, something that the Japanese population is adamant to do, probably because the Japanese people still remember or have heard a lot about the atomic bombs they suffered in Hiroshima and Nagazaki. The newer generations of Japanese, grown in a democratic government and under the military protection of the United States, are unlikely to endorse a government initiative to produce nuclear weapons unless they are forced to do this by an American withdrawal or by a bellicose attitude on the part of either China or North Korea. However, if Japan were to pursue this route, most likely all three major nations in the area will start or continue nuclear weapons programs with the result of a great instability in this part of the world.

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Appendix A

Probability Tree Analysis of the responses of China, South Korea and North Korea to Japan becoming a nuclear power

Probability tree analysis is a useful tool for determining the likelihood of events in a graphical manner, making any analysis relatively easy for the writer to explain and for the reader to understand. Probability trees, like the LAMP method previously explained and used in the analysis of the same problem above are attempts to evaluate the likelihood of certain events to happen in the future.

The design of a probability tree basically means to simplify reality by giving probability values to each branch in the tree. The sum of the probabilities at each level of branching in the tree will always equal one. After the probability scores are assigned the path probability of the probability of the different branches of behavior are determined by multiplying all the individual probabilities of the branches included in the specific path.

For this analysis, the research question again is the likely responses of China, South Korea and North Korea if Japan were to become a nuclear power. As with the LAMP methodology previously explained, this analysis uses a probability tree and assumes that there will be some kind of response by all three interested actors if Japan decides to start a nuclear program. The behavior of the interested actors lends themselves also to decision and probability trees. However, a decision tree analysis cannot handle more than two actors at the same time and is not efficient to reflect cooperative behavior. Therefore, for the purpose of this analysis, three separate decision trees will be created, one for each of the interested actors.

The start of each decision tree is the current situation about Japan's nuclear program – namely that Japan does not have a nuclear program and that it depends for its security on the nuclear

umbrella provided by the United States; and that China, South Korea and North Korea will oppose Japan from becoming a nuclear power, although the degree of opposition may differ for each of the interested actors. After the results of the probability tree analysis are explained and discussed, the results of this methodology will be compared with the results obtained earlier by using the LAMP methodology.

The decision tree analysis has a number of limitations when attempting to predict future behavior. For example, a decision tree only permits the analysis of a small number of potential actions for each actor and cannot account for any type of cooperative behavior or for any shifts in behavior because of actions made by third parties. The decision trees in this appendix are intended only to help in the analysis of the research question. Each individual tree will be studied and analyzed.

This study, obviously, is only as good as the probabilities assigned by the researcher to each potential event, which could be flawed or biased, although an effort has been made to be objective. Decision trees, because they are a simplification of reality, allow the researcher to assess the likelihood of each action with less bias, although like any other predictive technique, it is still dependent on the researcher's subjective appraisal of the situation, which is based on his/her knowledge and experience.

Determining Options for the Decision Trees

The purpose of this analysis is to analyze the potential behavior of China, South Korea and North Korea as it relates to Japan becoming a nuclear power. In this analysis, the same simplified actions that were used in the LAMP analysis will be used again with some minor variations. However, unlike the previous LAMP analysis, the option of no response to Japan or Japan's behaviors is included in the probability analysis for each of the interested actors.

Research Design

In this analysis using a decision tree, I will assign probabilities to the different options that Japan has: (a) to pursue nuclear weapons capability; (b) the status quo; or (c) to intensify the production of nuclear energy capabilities for pacific purposes. The alternative (b) above is the present situation. Japan is presently protected by the nuclear umbrella of the United States, as it has been since the end of World War II, and the Japanese governments today, as in the recent past, continues to concentrate its efforts on developing its economy rather than pursue either a nuclear weapons program or an intensification of nuclear energy capabilities which could threaten its neighbors because of the easiness by which nuclear energy capabilities could be converted to the production of atomic weapons. In the estimation of this analyst, the probabilities that Japan undertaking the development of an independent nuclear weapons program is 0.20, the probability that Japan will intensify the production of nuclear energy for peaceful purposes is 0.20 and the probability that Japan will continue with the status quo or present condition is 0.60.

In the three diagrams below, one for each of the actors analyzed in this study, we calculate the probability of the different outcomes based on the possibilities that we have assigned to the different options that each actor – China, South Korea and North Korea.

Case Study/Analysis/Findings

Japan and China

In the diagram below, I have assigned probabilities to each of the potential responses of China to the three different scenarios described earlier. In the same manner that we have estimated that Japan has three main options I also estimate that China, as well as South Korea and North Korea, could react to each potential Japanese action with either (a) using coercion or diplomatic measures to constrain Japanese behavior (CD); (b) doing nothing (DN); (c) building/intensifying

its nuclear weapons capabilities(BI); or (d) using force (UF), which could include the use of nuclear weapons if the country –as China and North Korea- already has them. In the particular case of China, I have assigned the probabilities indicated to the right of the abbreviations CD, DN, BI and UF, and then multiplied this probability by the probability that Japan will pursue this branch of the tree – this specific strategy. The column under the name Probability is thus the calculation of both probabilities and is the joint probability that this event will occur.

Diagram 1 - Japan - China Decision Tree

				Probability
	Goes Nuclear (0.20)	CD	0.20	0.04
		DN	0.00	0.00
		BI	0.40	0.08
		UF	0.40	0.08
Japan	Peaceful Only (0.20)	CD	0.20	0.04
		DN	0.10	0.00
		BI	0.70	0.14
		UF	0.00	0.00
	Status Quo (0.20)	CD	0.00	0.00
		DN	0.20	0.12
		BI	0.80	0.48
		UF	0.00	0.00

CD: Uses coercion or diplomatic efforts
DN: Does Nothing
BI: Builds nuclear capabilities or intensify them
UF: Uses force

In Diagram 1 the most likely joint probability is that the status quo will continue and that China will respond not only by continuing the development of its economy and its military, but also pursuing additional nuclear capabilities. China is already a regional power and is committed to develop its strong muscle not only in the region but also in the world. If the economic conditions are favorable, China will continue investing in revitalizing and modernizing its

military and increasing its nuclear stockpile in order to become a power of first magnitude, a world power.

Japan and South Korea

In the case of South Korea, this country has also benefitted from the military presence of the United States. Basically, although this nation is located in a very volatile region, it has been able to concentrate its efforts on its own economy and modernization rather than having to spend extraordinary sums to defend themselves from the menace of North Korea or China. This does not mean, however, that South Korea is having a free ride on the back of the United States, because the South Koreans have financed some of the costs of keeping the American troops in the Korean peninsula for their protection. However, as in the case of Japan, the benefit of being protected by the nuclear umbrella has allowed the country to pursue other developmental goals and not having to spend all or most of their income in armaments or defense.

In the specific case of South Korea, I have assigned the probabilities listed besides the abbreviations CD, DN, BI and UF, which are different for each of the three Japanese options or scenarios of going nuclear, developing nuclear energy for pacific purposes only, or the status quo.

Diagram 2 - Japan - South Korea Decision Tree

				Probability
	Goes Nuclear (0.20)	CD	0.20	0.04
		DN	0.05	0.01
		BI	0.70	0.14
		UF	0.05	0.01
Japan	Peaceful Only (0.20)	CD	0.10	0.02
		DN	0.80	0.16
		BI	0.10	0.02
		UF	0.00	0.00

Status Quo (0.20)	CD	0.03	0.02
	DN	0.95	0.57
	BI	0.02	0.01
	UF	0.00	0.01

CD: Uses coercion or diplomatic efforts
DN: Does Nothing
BI: Builds nuclear capabilities or intensify them
UF: Uses force

In the case of South Korea, as in China, the highest joint probability is that the status quo will continue, but because South Korea will continue enjoying the protection of the United States with troops stationed in its territory, the South Koreans will do nothing different. In addition, even if Japan were to concentrate its efforts on developing nuclear energy, still South Korea may adopt the "do nothing" option because it relies on the military protection of the United States. Also, as South Korea and Japan work together in a collaborative fashion under the leadership of the United States, events in Japan are less likely to motivate the South Koreans to react negatively or with fear to any potential Japanese move.

Japan and North Korea

North Korea has its independent nuclear weapons program, which has worried its neighbors and the United States considerably. Effort after effort to achieve the elimination of this program in exchange for financial and technical aid as well as trade, has failed because the North Korean leadership, for one reason or another, accuses the other parties of not fulfilling their part in the agreement, or claims the existence of unjustified delays in providing the necessary equipment they said they would give North Korea, or any other excuse. Invariably, sometime later, the North Koreans come back to the negotiating table but this time asking for more from the West than they got before, in an apparent blackmail of the good intentions of the United States, Japan and South Korea, the major contributors of the financial and development aid package.

The behavior of Japan inevitably will have an effect on the North Koreans, unless they have already made a firm commitment to live by the terms of any agreement they may have reached. Maybe a new North Korean leadership will be more serious about its intentions to fulfill an agreement to dismantle North Korea's nuclear capabilities. However, assuming that only Japan's behavior is taken into consideration, as with the other two actors, in diagram No. 3 I indicate the probabilities assigned to each of the four North Korean options in each of the three scenarios. The probability of each potential event is indicated to the right of the abbreviations for CD, DN, BI and UF, and once again, the joint probability is indicated in the end column.

Diagram 3 - Japan - North Korea Decision Tree

				Probability
	Goes Nuclear (0.20)	CD	0.12	0.00
		DN	0.00	0.00
		BI	0.95	0.19
		UF	0.03	0.00
Japan	Peaceful Only (0.20)	CD	0.40	0.08
		DN	0.00	0.00
		BI	0.60	0.12
		UF	0.00	0.00
	Status Quo (0.20)	CD	0.10	0.06
		DN	0.68	0.41
		BI	0.20	0.12
		UF	0.02	0.01

CD: Uses coercion or diplomatic efforts
DN: Does Nothing
BI: Builds nuclear capabilities or intensify them
UF: Uses force

Here again, the highest joint probability is that Japan will continue with the status quo and that North Korea will do nothing. As long as the United States continues with its military

presence in the region, the most likely scenario for Japan and for the other players versus Japan is the status quo.

Concluding Comments

The results of this analysis corroborate and verify the results indicated by the LAMP methodology. In both cases, the most likely scenario is a continuation of the present situation given that it is unlikely that the United States will abandon the area or withdraw its troops from Japan and South Korea. The presence of the United States in the region has a stabilizing effect, because it constraints the behavior of China and North Korea. The protective nuclear umbrella of the United States makes South Korea and Japan feel secure. For this reason, it is unlikely that Japan would develop an independent nuclear weapons program as long as the United States remains actively engaged in the region.