

**Building or Breaking the Great Wall at Sea: The
Rise of China and the Politics of Sea Lines of
Communication in the South China Sea
(2000-2014)**



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July 2014

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AT SEA : THE RISE OF CHINA AND THE
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IN THE SOUTH CHINA SEA**

(2010-2014)

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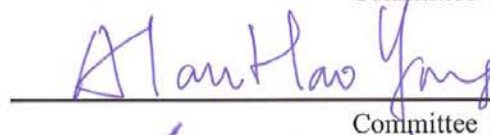
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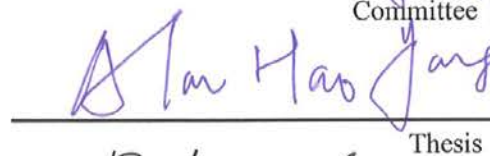
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Abstract

This research applies game theory (stag-hunt model) to a hypothetical situation of cooperation on Sea Lines of Communication (SLOCs) protection in South China Sea (SCS). The results indicate that, in theory, the best option for all disputant countries in the issue is to cooperate in order to increase the security of their oil imports, trade, and ships crossing the region.

To overcome the gap between the theoretical model and the reality, we have identified those factors that will hinder the implementation of cooperation on SLOCs protection, *sovereignty, resources, and military development*; as well as those that can be used to counterbalance the effect of negative ones, *previous joint maritime patrols, non-traditional security cooperation, and the future South China Sea Code of Conduct (SCS COC)*.

Finally, we have presented the *South China Sea Peace Island Initiative*, a proposal to coordinate and create new joint maritime patrols in the region as a mean to reduce tensions, build confidence, and improve the relationship between disputants.

We conclude presenting the main findings of this research, as well as those policies that will be useful to implement cooperation on SLOCs protection in SCS.

摘要

本研究採用賽局理論 (stag-hunt model) 來推論假設南海海上交通線 (SLOCs) 安全合作的情形。根據結果顯示，爭奪南海的國家，其解決衝突最好的策略應以合作的方式來提昇無論是在石油進口、貿易活動以及該地區船隻航行等方面的安全性。

為縮短假設情境與現實情況的差距，一方面，我們找出海上交通線安全合作之難點：主權、資源、和軍事發展；另一方面，也提出能促進其合作的正面因素：舊有的海上聯合巡邏、非傳統安全合作相關領域、以及未來的南海行為準則 (SCS COC)。

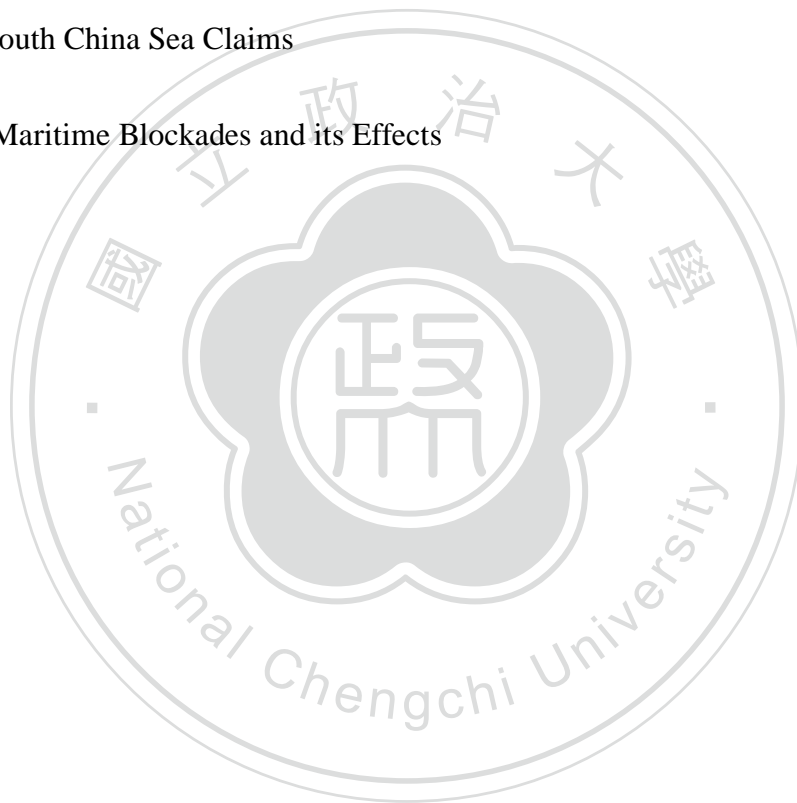
最後我們介紹了「南海太平島提案」，試圖建立與協調新的海上聯合巡邏來降低該地區的緊張關係，建立彼此之間的信任，並改善衝突的情況。

根據本研究結論表示，我們的研究發現以及一些政策將能協助實施南海海上交通線安全的合作。

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ACRONYMS

ADIZ Air Defense Identification Zone
AFTA ASEAN Free Trade Area
AMM ASEAN Ministerial Meeting
ARF ASEAN Regional Forum
ASBM Anti-Ship Ballistic Missiles
ASCM Anti-Ship Cruise Missiles
ASEAN Association of Southeast Asian Nations
BPD Barrels Per Day
CBM Confidence Building Measures
CCP Chinese Communists Party
COC Code of Conduct
COLREGS Convention on the International Regulations for Preventing Collisions at Sea
CUES Code for Un-alerted Encounters at Sea
DOC Declaration on the Conduct of Parties in the South China Sea
EEZ Exclusive Economic Zones
ESPO East Siberia Pacific Ocean pipeline
GDP Grow Domestic Product
IMB International Maritime Bureau
IMO International Maritime Organization
ISC Information Sharing Center
IWG International Working Group (on Confidential and Security Building Measures in the Asia-Pacific)

JWG Joint Working Group
MALSINDO Malaysia, Singapore and Indonesia patrols
MBA Military Bases Agreement
MOFA Ministry of Foreign Affairs
MPLA Popular Movement for the Liberation of Angola
MSP Malacca Strait Patrols
NM nautical miles
PLAN People's Liberation Army Navy
PRC People's Republic of China's
ReCAAP Regional Cooperation Agreement on Anti-Piracy in Asia
ROC Republic of China
SCS South China Sea
SIPRI Stockholm International Peace Research Institute
SLOCs Sea Lines of Communication

SOM Senior Officials Meeting

SS non-nuclear powered submarines

SSBN nuclear-powered ballistic missile submarine

SSN nuclear powered attack submarine

TAC Treaty of amity and cooperation in Southeast Asia

UNCLOS United Nations Convention on the Law of the Seas

US United States



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Chapter 1. Introduction

1.1 Introduction and Problematics

The South China Sea (SCS) is one of the Asian regions in which some countries are involved in territorial disputes over its islands, reefs, and sea waters. The main zones of confrontation are the Spratly Islands, and the Parcel Islands. The disputes in both zones create tensions in the region that can evolve into military conflict, diminishing the perspectives for cooperation, and avoiding the peaceful management and resolution of the issue. For instance, in the last years tension over the territorial disputes has been varying over time, with different peaks as the occupation of Woody Island by the PRC in 1974 (CIA, 2013a), or more recently, the standoff on April 2012 between the Philippines and the PRC¹.

The main issue in South China Sea is sovereignty over the islands and reefs that can provide with the rights for the exploitation of natural resources, and also the right to create artificial structures in its Exclusive Economic Zone (UNCLOS, 2013), which could also be used for military projection by countries with enough military and economic resources. Moreover, the control of these regions is especially important for countries whose energy imports and trade go through the Sea Lines of Communications (SLOCs) that cross these seas. Non-traditional threats like piracy,

¹ For more detailed information see Chapter 3, background information.

political instability in key countries (e.g. oil production countries, countries in the Malacca strait, etc.), or blockades to cargo ships/oil tankers by other actors, can cause great damage to the economy of countries like China or Japan. In case of China, it has taken different measures to tackle these threats, among them increasing its patrols in the SCS, sending military ships to the Gulf of Aden, establishing ports with commercial and probably military uses in the Indian Ocean, the building of its own oil tanker fleet, or the development of alternative oil import routes by using pipelines. All of these measures try to increase Chinese energy security, at the same time that some of them can be used with dual purpose (Pehrson, 2006), as for instance been more assertive in the territorial disputes, or perhaps for future military projection, or to seek hegemony in the Asia Pacific region. Therefore, this second interpretation of Chinese growth is creating mistrust among other countries, which are afraid that China's aim is not to develop peacefully. China could increase its power in order to be more assertive in its territorial claims, decreasing the probability of cooperation with other countries, gaining more bargaining power to settle the disputes in its benefit, or even to try to become a regional hegemon (O'Rourke, 2014).

1.1.1 Main Stakeholders in SCS

In this section we present the main actors involved in the dispute, ASEAN, China,

United States, and Taiwan, as well as their main concerns and interests in the region.²

1.1.1.1 China

The People's Republic of China's (PRC) official claims over the SCS date back to 1951, when Chinese foreign minister Zhou Enlai in a statement indicated Chinese sovereignty over the different groups of islands and reefs (mainly Paracel and Spratly Islands) in the region. The nine dash line that appeared for first time in atlases from the mainland was similar to the eleven dash lines showed in a previous atlas published in 1947 (Gao & Jia, 2013), under the Republic of China (ROC) Government.

The nine dash line encircles the Pratas Islands (Dongsha Qundao), the Paracel Islands (Xisha Qundao), the Macclesfield Bank (Zhongsha Qundao), and the Spratly Islands (Nansha Qundao). All these zones are claimed by PRC and ROC, which at present controls Pratas Islands. The nine dash line has been criticized by Singapore and the United States, and it has been considered legally groundless by some ASEAN countries like Vietnam, Indonesia, Malaysia, and the Philippines, whose, together with Brunei, also have interests in protecting their sovereignty in SCS. The discontinuous line is ambiguous as there is no official explanation of it, and thus it is not clear if Chinese claims only include the islands, or also underwater rocks, the

² In order to have a general idea of each disputant's claims in SCS see the map in Annex I.

seabed, and the water column (Zou, 2012).

Thus, this ambiguity may make think other claimants that Chinas ambitious is to control the entire SCS, including island, rocks, reefs, waters, seabed, and resources.

1.1.1.2 ASEAN

This part presents those ASEAN countries that are involve in the disputes in SCS, as well as their claims over the Island, rocks and waters. These countries are Brunei, Indonesia, Malaysia, Philippines, and Vietnam. Due to China use the nine dash line to claim its historical rights over the SCS, all the claims from ASEAN countries present overlaps with those claims from Chinese government.

Brunei

Brunei has claims over some parts of the Spratly Islands and their surrounding waters (Zou, 2012). They have overlapping claims with the Philippines and Malaysia (Buszynski, 2010). For intance, since 2002 its claims have generated disputes with Malaysia over the exploitation rights of two overlapping oil blocks (Buszynski & Iskandar 2007).

Indonesia

During last years, Indonesia has tried to play a moderator role in the disputes, due to it had not a clear announcement from China that there were claims overlapping between the two countries in the SCS. However, Chinese publication of maps in 2009 with overlapping Exclusive Economic Zones (EEZ) with those of Natuna Islands, the aggressive behavior of Chinese enforcement vessels against Indonesian patrol ships in 2010 and 2013, the Air Defense Identification Zone in East China Sea (ADIZ), as well as the fishing ban around Hainan Island that affect more than half of the SCS, may have led Indonesian Government to announce its position and declared its dispute with China in the region (Murphy, 2014).

Malaysia

Malaysia claims part of the Spratly Islands, which overlap with those claims of the Philippines. It also has interest in the exploiting of its EEZ for the extraction of resources, and thus has conflicts with Brunei in those oil blocks where their claims overlap (Buszynski & Iskandar 2007).

Philippines

The Philippines claim part of the Spratly Islands, including Kalayaan (Freedomland)

as an extension of the island of Palawan, which also overlaps with the Malaysian claim in this zone (Buszynski, 2010). They have continuous tensions with China, especially after sending on March 2014 a memorial about its dispute in SCS with China, to a UN arbitration tribunal in the Hague (Poling, 2014).

Vietnam

Vietnam, together with China and Taiwan, claims all the Paracels and part of the Spratly Islands, and therefore its claims overlaps also in part with those of the Philippines, Malaysia, and Brunei (Zou, 2012). Although the Paracels are occupied by China, Vietnam maintains its claims over them, as well as over the Spratly, which are occupied by different ASEAN claimants (Buszynski, 2010). Vietnam has frequent tensions with China over the islands, and recently some of their vessels collided in the Spratly protesting Chinese decision to send an oil rig to Vietnam EEZ for oil exploiting (Tuan, 2014).

1.1.1.3 United States

US is involved in different zones of the Asia Pacific Region, especially in both China Sea regions, the East with its alliance with Japan, and the South with its alliance with the Philippines and its arms trade with Taiwan. Thus US wants to maintain its

presence, not only to reinforce its alliances, but also to protect its interest, as for instance freedom of navigation, or to contain the rise of China.

1.1.1.4 Taiwan

Taiwan, although is not officially recognized as a country by all ASEAN countries, it can be considered as stakeholder with interests in the dispute as China's nine dash line is similar to the eleven dash line previously drew by the ROC government (Gao & Jia, 2013). Moreover, the biggest island in the Spratly, the Taiping Island, is under Taiwan control. Although it has the best logistic facilities, however, due to the long distance between this island and Taiwan, is not of great important for Taiwan self-defense, and therefore the Taiwanese Marine Corps were replaced by Coast Guard Administration units in 2000 (Chen, 2011).

1.2. Aims and Research Questions

The aim of this study is to obtain a deeper understanding of China's behavior in South China Sea, its policies to increase its energy security, its military development, as well as its motivations and interests in increasing its presence in the Asia Pacific region.

We also aim to better understanding ASEAN countries' and Taiwan's position in the dispute, as well as to interpret United States' role (US) and its interests in the region.

This information will help us to provide answer to the following questions:

Research Questions

1- Will cooperation on Sea Lines of Communication with China in the South China

Sea be more difficult in a middle/long term, due to both, the progressive development of its military capabilities, and its oil energy policy?

From this one these other questions are derived:

2- Which factors prevent cooperation on protection of Sea Lines of Communication in South China Sea?

3- Which factors facilitate cooperation on protection of Sea Lines of Communication in South China Sea?

4- How to move from the game theory theoretical framework to real cooperation on protecting the Sea Lines of Communication?

1.3 Background Discussion

In this section we describe the academic findings in the three main approaches to tackle the SCS dispute, explaining their characteristics, and selecting the one this research is going to apply. The three approaches are: strategic and international politics, legal, and energy and non-traditional security.

The strategic and international politics approach presents the situation from realism and high politics perspectives, in which military buildups, alliances, and the balance of power play the main role in the management of the SCS issue. It describes Chinese recent behavior, its strategy in the dispute, and offers possible options to manage the dispute.

The legal approach, tries to explain the meaning of the nine dash line, as well as to delimit states' claims, whether they are based on historical claims, customary law, or UNCLOS legislation, in order to achieve a resolution of the issue base, for instance, in an arbitration tribunal. It also presents the Code of Conduct for SCS as a mean to decrease tensions and move forward in the resolution of the issue.

Finally, the energy and non-traditional security approach supports the idea that non-traditional security threats can damage energy and trade imports of littoral states, as well as those of states with interests in the region. It also argues that Chinese energy diversification will not be enough to decrease its dependency on oil imports by sea, and thus, proposes cooperation to strengthen the Sea Lines of Communication (SLOCs) to confront non-traditional security threats at sea.

1.3.1 Strategic and International Politics Approach

The strategic approach leaded by governmental policies, is the one who have been always present in the SCS, however, the opinions referred to the dispute changed over time. Goldstein (2011) reviewed recent Chinese naval literature identifying different viewpoints related to SCS issue. Among them, there are the followings:

- 1- China has to adopt a cautious and compromising policy
- 2- There is a perception of threats to China and its interests
- 3- China is not getting benefits from the SCS resources
- 4- Exists a pattern of escalation in writings from mid-2010

The last point suggests that Chinese military policy in SCS can become more

aggressive in the future, especially if US takes a more active role in the region, which can trigger more Chinese military deployment in SCS, as for instance by exchanging the presence of law enforcement patrol ships for military vessels. Moreover, as it is within Chinese capabilities, there is a possibility that China will carry out an air and sea strike against a weak regional navy, in order to deter other claimants to take more assertive initiatives in the issue (Goldstein, 2011).

Taylor (2011) also agrees with the possibility of China deciding to use its army to undertake an attack due to its current increase of capabilities. However, he mainly focuses on its strategy in SCS since the mid-1990s, which considers is one of delaying the resolution of the dispute, occupying territories, consolidating its ability to exercise jurisdiction, and deterring others. This strategy is threatening weaker states involved in the dispute, and is destabilizing the situation. Thus, to try to counterbalance this, the strategy also includes efforts to prevent the escalation of tensions while, at the same time, seeking to consolidate China's claims through diplomatic, administrative and military means.

Taylor proposes a possible solution that will force China to compromise in the issue and improve relations with other states, as for instance If China seeks to prevent the

formation of a counterbalancing coalition, especially one led by the United States (Taylor, 2011).

Sheldon (2012) also mentions the possibility of US cooperating with SCS states to counterbalance China through the *US Air-Sea Battle doctrine*, which could be used to deter or defeat China anti-access strategy within the *first island chain*, especially if they have a closer cooperation with Japan and Australia as allies.

On other perspective for the issue, he argues that US is a strong supporter of ASEAN multilateral negotiations for the development of a COC for SCS, and believes that ASEAN has to move forward from confidence building to other kind of initiatives, as for instance joint management of maritime resources in order to have improvement in the situation (Sheldon, 2012).

Buszynski (2010) also shared this possible solution to the issue, supporting the idea of maritime energy cooperation in SCS that will provide more benefits to all the countries involved, instead of a policy based on military buildup to demonstrate effective occupation and to support their legal claims, which will continue with the standoff, and will increase tensions as countries' forces are developed and deployed.

In sum, the strategic and international politics approach, shows that there is a pattern of escalation in writings from mid-2010 that suggests Chinese military policy in SCS can become more assertive in the future if there is direct intervention of external actors, which will make Chinese delaying strategy in the dispute to change to a more aggressive one. Thus, scholars propose several initiatives in which disputants avoid the consequences of military buildups by cooperating to obtain mutual benefits, for instance through the joint management of maritime resources. Most authors agree that is early to try to solve the sovereignty issue between the disputants, and we agree with them, but we consider that is also early to start with cooperation on resources, due to, like sovereignty, they are seen as relative gains for all the countries involved in the dispute.

1.3.2 Legal Approach

There is recently an increasing interest for solving the South China Sea (SCS) dispute base on the legal approach, using historical rights and UNCLOS legislation as main arguments. Gao and Jia (2013), present Chinese claims on SCS using the nine dash line to protect its title to territory, as well as its historic rights. The main problem is that the other disputants in the issue, Vietnam, the Philippines, Malaysia, and

Indonesia, do not consider it legal, and thus reject it.

One of the reasons it is not accepted by other disputants is because the nine dash line meaning is ambiguous, and does not clearly states if it refers to the sovereignty rights over SCS waters; its Islands, reefs and rocks, or the seabed and continental shelf.

According to these two authors, although the original interpretation of the lines can be understood as referring to the whole waters, islands, natural structures, seabed, and continental shelf, however, the nine dash line at present has three different meanings:

- 1- It represents the title to the Island groups inside it
- 2- It maintains Chinese rights in fishing, navigation, and resources extraction
- 3- It can be interpreted as maritime delimitation lines (e.g. between its Islands and other coastal states).

Thus, based on the customary law of discovery, occupation, and historic title, the authors argue that China has sovereignty over the islands, other natural structures, and, in accordance to UNCLOS, over their waters and seabed. In spite of their personal opinion, they agree that a solution between history and present reality have to be achieved, proposing the joint development of resources as one of the options, and,

eventually, even discussing the sovereignty issue (Gao & Jia, 2013). Although, we agree that cooperation in some issues should start to improve the relationships among actors in the region, however, we consider that starting negotiating about resources and sovereignty will be more difficult due to they are considered relative gains, which implies one part loses what the other part gains, and also because the tensions that recently has risen in the SCS will make more difficult any kind of agreement related to these two issues.

Other important point to take into account in the legal approach is the development of a Code of Conduct (COC) for SCS to reduce tensions, manage, and eventually solve the disputes in a peacefully way. ASEAN and China have been discussing the issue for more than 18 years with some advances, as for instance the creation of the Declaration of the Conduct of Parties in the South China Sea (DOC), and the Joint ASEAN-China Working Group (JWG) to implement the DOC. Although China prefers to discuss the sovereignty/resources dispute with each government in bilateral negotiations, however, when developing a common code for all the states involved, it prefers to seat with ASEAN as a group. Moreover, it can, as previously did, create an excuse to freeze discussions when consider one of the disputant's behavior is inappropriate, or when there is external actors' interference (e.g. U.S.), this can delay

the development of the COC or even avoid its implementation. In fact, as Chinese Foreign minister mentioned, China is in no hurry to conclude an agreement on a COC (Thayer, 2013). Thus, even when the COC will be one of the most important advancement in managing the SCS dispute, we consider that firstly it is necessary to implement faster and less complicate measures to improve the situation in the region, as for instance measures that provide absolute gains to all the actors involved.

To sum up, the legal approach will be useful, but just after focusing in less sensitive issues that can prepare the path to discuss sovereignty and resources disputes. Examples of these issues are in the field of non-traditional security in SCS, as they affect all the actors involved making them to have a common interest in solving the problem.

1.3.3 Energy and Non-traditional Security Approach

The academic literature also presents a more recent approach to the SCS issue focus on energy and non-traditional security. The main idea is that non-traditional security threats can damage energy and trade imports of littoral states, as well as those of states with interest in the region. Ho (2006), argues that these kinds of threats have been overstated due to the number of piracy armed robbery and maritime terrorist

attacks in the SCS region are very low compared with the proportion of ships that cross the straits (60,000 yearly). Moreover, this author also presents different national, bilateral, and multilateral measures that have decreased the risk of piracy attacks.

Despite of these remarks, he concludes that the trade flow and the demand for energy in the region will increase the dependence on sea transportation, and thus proposes that countries should move to a cooperative regime in order to strengthen the security of the SLOCs (Ho, 2006).

In a similar approach, Gautam (2014) shows how Chinese energy policy is concerned with its dependence on oil imports that can threaten its national security. Thus, in order to achieve energy security, it has been supporting a strategy based on increasing its oil imports through pipelines, its number of oil tankers, as well as on the development of a deep blue water fleet that can provide support to its vessels operating far from Chinese shores. In spite of its efforts, at present pipelines only provide 14% of Chinese oil import demand; therefore, they only help to diversify its energy imports, which will still concentrate on sea lines routes.

Although China could rely on the oil global market to protect its imports, it prefers to

keep developing its military to provide protection to its oil tankers (Gautam, 2011), which, on the other hand, will cause concerns in other states in the region, especially those involved in sovereignty disputes with China in the SCS.

From our point of view, we also agree with many of these opinions, and thus we believe that the approach for managing the SCS issue should be one based on the energy concerns of the states involved, not with the aim of initiating cooperation on joint resources development from the beginning, but, firstly, cooperation on joint protection of sea lines of communication (SLOCs) to allow the flow of trade and energy without impediments.

In conclusion, the strategic and international politics approach highlights the importance of military buildups in the region and alliances to maintain disputants' claims, and to consolidate their positions. However, it can create more tense situations between different actors, especially if external actors get involved in the issue, which can cause a more aggressive response from China.

The legal approach pretends to determine and clarify disputants' claims in order to initiate a legal process base on International law and UNCLOS legislation. Although

it will be an important advance in the issue, however China prefers to negotiate the issue bilaterally, not through an arbitration tribunal. Moreover, even when the development of a COC will prove useful to decrease tensions in SCS, China will not accept it as a means to solve the sovereignty issue, and will still prefer to negotiate with each disputant and not with ASEAN as a whole.

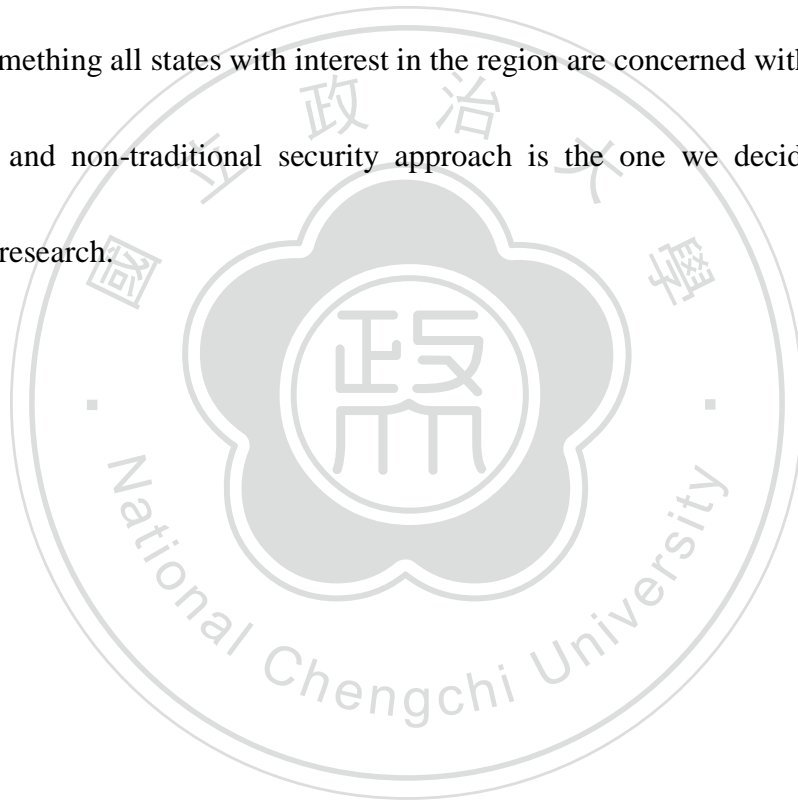
Both, the legal and the strategic and international politics approach, propose joint development of SCS resources as a way to move forward in the dispute. We agree it will be an important advancement in the issue, but we also consider that a more cautious approach is needed, one in which cooperation starts from less sensitive issues, for instance SLOCs protection.

The energy and non-traditional security approach is basically concerned with guaranteeing energy supplies, mainly oil and gas imports by sea, and with the non-traditional security threats that can cut this energy imports to Asian countries.

Initiatives that tackle these problems will be easier to agree on due to they focus on securing the SLOCs, commons that can be used by all the stakeholders in the region, which implies all of them have a general interest in increasing their protection, this will make states' participation synergic, and will produce a win-win situation based on

absolute gains that will be better accepted than agreements on relative gains, which in the case of sovereignty and resources in SCS implies dividing the benefits among the disputants.

In sum, we consider this approach the less controversial because it does not deal directly with sovereignty or resources *in situ*, but with the protection of commons, which is something all states with interest in the region are concerned with. Therefore, the energy and non-traditional security approach is the one we decided to apply during this research.



Chapter 2. Research Design and Methodology

2.1. Introduction

This study starts with an introduction to realism, offering the basic concepts about absolute and relative gains that are used during the process of rational choice and that will determine the different stakeholder's movements in the chosen game. It follows with an overview of basic game theory concepts that will be applied during the case study, and end with the limitations of this research.

Our case study can be analyze using different theories, as it involves economy relations, institutional design, and influence of Asian cultural values, among other factors. However, due to Chinese economy and its military power are in a process of growth and adaptation at regional and at international level, which can be seen with mistrust by different countries and make cooperation more difficult, therefore, we will make use of some concepts from realism theory that reflect these types of changes in the rise of China.

Realism is known to describe and explain properly military buildups, balances of power, and the mistrust caused by raising countries. Moreover, realists believe that cooperation is not always possible, it has limitations, and presents problems related with relative gains and or the transformation of these payoff into capabilities by other

states (Waltz, 1979, p.106.; Mearsheimer, 1994, p.12). As we intend to show the possibility of cooperation on SLOCs, we borrow the *relative/absolute gains* and *zero-sum game* concepts from realism, which are used during the process of rational choice and that will determine the different stakeholder's movements in each situation (e.g. in the chosen game in game theory).

The scope of this research is to analyze Chinese behavior in SCS and Asia Pacific, in order to determine the probability of cooperation on Sea Lines of Communication (SLOCs) in the region, to establish the conditions under we can move from the ideal situation presented in the game theory model to reality, and to assess the cooperation outcomes in this case. We are going to base the study on SLOCs due to there are closely linked to Chinese oil imports, which are extremely important as China cannot cover all its demand by itself, it needs to transport this resource mainly using the SLOCs, and because China needs it to move not only part of its economy, but mainly most of its military vehicles. Moreover, SLOCs is a key factor for Chinese development because is the basic mean of transportation for Chinese trade, and thus, making it a very important part of Chinese Grow Domestic Product (GDP).

We only focus on SLOCs cooperation, but other issues like resources, and sovereignty, are also very important for the states in the region. However, due to space constrains,

this study will not research about cooperation on resources search and extraction, or cooperation to overcome the sovereignty issue in SCS.

2.2 Game Theory and Realism: absolute gains, relative gains, and the zero-sum game issue

This part introduces the basic concepts of **game theory** from a realist perspective, defining them, explaining when they are used, and which are the interpretation realists do from them as well as the considerations about their utility.

2.2.1 Absolute Gains, Relative Gains, and Zero-Sum Game

In this research we use game theory to create an ideal situation in which the payoffs of cooperation will be the best outcome for all the stakeholders taking part in the case study. Depending on the theory we chose to apply into a case study, it will provide different probabilities of cooperation between the stakeholders taking part in the situation. We consider this is because theories have different conceptions of cooperation, its viability, and its real utility, and thus, depending on the theory used, our ideal scenario can provide more or less maneuver for cooperation. However, if we want to create a specific theoretical situation, we should create one that reflects

properly the issue in question, in our case this implies choosing a game theory model that fits to SLOCs cooperation, as well as choosing those factors that can broad or shrink the gap between the theoretical framework and the reality. In the present situation we consider that one of the main factors that can influence cooperation in SCS is Chinese military development, and thus, our theoretical model based on game theory also borrows from realism some interpretations of concepts presented in both theories.

In game theory, as in many other theories, cooperation is also possible under certain conditions. However, it will be limited by the types of gains an actor can obtain in that situation: relative gains or absolute gains. **Relative gains** imply that one actor's payoffs represent the losses for the other, and, on the contrary, **absolute gains** imply that one actor's payoffs are independent of the other actor's payoffs. This shape the rules and determine if the game they are *playing* is a **zero-sum game**, when the *player's* gains are relative, or a **non-zero sum game**, when the player's gains are absolute (Viotti & Kauppi, 2010).

2.2.2 What Realism Thinks About Cooperation?

The importance of realism in our case study is derived from its connection with game

theory as well as its power to describe and explain why China and other Asian countries are increasing their military capabilities in the region. As we consider Chinese military development an important factor that can influence interactions in the SCS issue, thus we include realism interpretations about cooperation, absolute gains, and relative gains in this section.

According to realism, cooperation is possible whether the actors are motivated with absolute gains or relative gains. **Absolute gains** imply focusing on maximizing one state's profits. **Relative gains**, on the other hand, means that they not only are interested in their own gains, but also how good their profits are compared to other cooperating states. However, due to states are concerned with the balance of power, they are mainly motivated by relative gains, which makes cooperation more difficult. Besides relative gains, the other factor that makes difficult cooperation is the concern about **cheating**, which can make the cheating state getting relative advantage from the agreement. When deals reflect the distribution of power, and decrease concerns about cheating, then cooperation is possible to a certain extent (Mearsheimer, 1994, p.12-13).

As a consequence, cooperation will be easier if the stakeholders are mainly concerned

with absolute gains and no with relative gains. Moreover, in order to maintain the agreement and avoid cheating, it should include some assurances for its monitoring, implementation, and compliance.

2.2.3 Rational Choice & Game Theory

This research uses game theory from the realism's standpoint, due to game theory is based on actors' rational choices. Realism makes a similar assumption, it considers states are instrumentally rational, which means they try to maximize their possibilities of survival (Mearsheimer, 1994).

In this study we will use simple game theory to show how protection of SLOCs can be seen as a non-zero sum game that will facilitate the prospect for cooperation inside a theoretical framework, to finally compare it with the present situation in order to identify those factors that influence positively or negatively cooperation in SCS. We consider that to improve the situation in SCS, it is necessary to start with cooperation on Sea Lines of Communication, as they can be considered as a common that can be shared by all the stakeholders in form of absolute gains, and thus, leading their interactions to a non-zero sum game situation in which cooperation is easier to achieve than in zero-sum game ones.

Rational Choice can be defined as the optimum strategy for one actor to a given competitive situation. **Game theory** is the process through one actor decides his optimum strategy, normally, under conditions of uncertainty and incomplete information. Each actor has to rank order preferences, estimate probabilities, and try to find out what the other actor is going to do (Viotti, & Kauppi, 2010).

2.2.3.1 Game Theory Concepts³

This section introduces the basic game theory concepts that are applied during the case study in SCS.

The Rules of the game

When we talk about games in this theory, we refer to those simplified representations of strategic situations that can be found in different fields of human life (business, politics, diplomacy, military, etc.). These games have basic common characteristics:

- The list of the **players**

³ Unless otherwise specified, based on: Dixit, Avinash K. & Susan Skeath. *Games of Strategy*. New York: Norton, 1999.

- The **strategies** available for each player's actions
- The **payoffs** from all the possible combinations of strategies
- All players are considered **rational** maximizers.

They can be represented, for instance, in a game table like the famous prisoner's dilemma game (Table 1). In the case of this game, two suspects for committing a crime that are in different cells are told separately (without knowing the other's decision) that if one confesses who did the crime, he will be freed but his partner will expend four years in prison. Otherwise, if both confess they will expend three years in prison, and finally, if both stay quiet they will expend only one year in prison (Osborne, 2009, p.14-15).

		Suspect 2	
		Quiet	Fink
Suspect 1	Quiet	2 2	0 3
	Fink	3 0	1 1

Table 1. Prisoners' dilemma *Game*. Payoffs in level of preference.

List of players: *suspect 1, suspect 2*

Strategies available: *quiet, fink*

Payoffs: 0, 1, 2, 3 (level of preference: 0 is the worse outcome, 3 is the best one)

Players are rational maximizer: want to expend the less time possible in prison.

Types of game according to player's movement order

There are two types of games according to the order of strategic movements: sequential and simultaneous games.

In **sequential games**, there is an order of play in which players take turns to move, and each knows the movements made by the previous player. These games are usually represented in games **trees** (see Figure 1), which is also called the **extensive form** of a game.

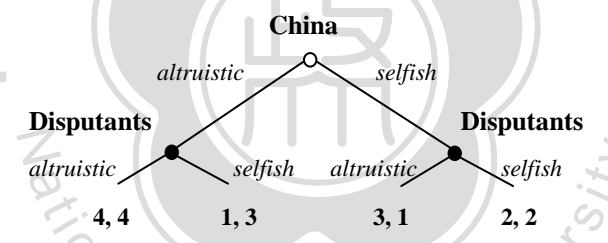


Figure 1. Game in *tree* form

In **simultaneous games**, players must move without knowing what the other players have chosen to do and cannot change its action. These games are represented in a **game table** (see the previous prisoners' dilemma example, Table 1), which is the strategic form of a game.

Types of equilibrium

Equilibrium means that each player is using a strategy that is the best response to other players' strategies. Depending on if the game is sequential or simultaneous, the equilibrium can be found by:

- **Rollback Equilibrium:** occurs in games with sequential movements. It is reached using the rollback methodology, which implies to think what happen in the terminal nodes of the game tree, and go back through the branches, decision node by decision node until reaching the initial node, reasoning which combination of players' strategies leads to the equilibrium.
- **Nash Equilibrium:** occurs in games with simultaneous movements. In these kind of games we cannot use rollback, thus we have to find a configuration of strategies that makes each player's strategy it best choice when other players also use their equilibrium strategy. It can be identified using different ways: with dominant strategies, eliminating dominated strategies, minimax strategy, or cell by cell inspection.

Cooperative and Non-Cooperative Games

The terminology in game theory can cause some confusion due to the concept of cooperative is not equal to cooperation. Avinash and Skeath (1999), define cooperative games as follow:

- **Cooperative games:** are those games in which the enforcement of a joint agreement is possible, perhaps because it is enforced with all the members at the moment of the sign, or because the players are monitored by a third party that can enforce the agreement.
- **Non-Cooperative games:** are those games in which the enforcement is not possible, and thus individuals can act in their own interests.

Although their names make to think the opposite, even the non-cooperative type allow for cooperation in the case of repeated interactions between the players, and if it is on each player own interests to take the cooperative action during the indefinite numbers of interactions (see: the Shadow of the Future).

The Shadow of the Future

This idea for initiate cooperation in non-cooperative games like prisoner's dilemma is part of the concept **the Shadow of the Future**, an expression which means that next encounter between the same two players must be important enough to make the unwillingness to cooperate unprofitable. This happens when players do not know how more times are they going to interact, thus, when the shadow of the future is *long* enough to hide the remaining number of interactions, the payoff for cooperation are bigger than for noncooperation (Axelrod, 1984, p.174).

Collective Action Games

These kind of games are those in which the aim of the collective (society, group of countries, group of players, etc.), are best achieved if they take an specific action or actions, even when these actions are not in the best personal interests of those players. This implies that the collective optimal outcome is not the Nash equilibrium of the game, and thus, the game will not automatically end in this optimal situation. In order to achieve this ideal situation, we need to understand the essence of the game, the players' system values (that they are rational do not imply that always have the same values), and how can we modify it to obtain the optimal outcome for the collective group.

Some characteristic of collective actions games are the followings:

- **Non-excludable:** a player who has not contributed to the support of an specific plan of action (e.g. establishing a common vigilance patrol in a neighbors community, establishing join security patrols in SCS, etc.), cannot be prevented from getting the benefits.
- **Non-rival:** a player's benefits are not diminishing because others players are also obtaining the benefit (e.g. the patrols provide security to all the community/region).
- **Pure public good:** refer to those goods that possess non-excludable and non-rival characteristics (e.g. a public park in the city).
- **Pure private good:** refer to those goods in which non-players can be excluded from their benefits. Moreover, if one actor obtains the benefit, no other actor can enjoy them (e.g. a cold pill). Normally, goods are in between the excludable/non-excludable and rival/non-rival spectrum.

The Importance of a Focal Point

This refers to an outcome in which all players understand that, among all the possible equilibria of the game, the focal point is the obvious to choose. All players' expectations must converge to that point, which means that all actors consider that equilibrium as the one which provide them with better payoffs. This easily happens in assurance games, where one of the equilibria have higher payoff for both of the players. However, in some occasions there is other equilibrium which worse payoffs for the players but less risky due to it is the best response for all the participants independently what other players' strategies are (see for instance table 2. US and U.S.S.R. arm race). In other cases can be difficult make players to converge their expectations on the same focal point, mainly because is more a matter of player's backgrounds, history, culture, norms of behavior between groups, etc., than a question of mathematics (Dixit & Skeath, 1999). Therefore, in some occasions it is necessary to make **strategic moves** in order to modify the rules of the game, leading the opponent to make decisions that favors our preferred outcome (e.g. the focal point).

Strategic moves

Sometimes, a player may try to shape the game is playing to compel or deter other player to take a specific action in the moment he has to choose his strategy during a

sequential game. Those devices used to manipulate the rules of the game are called **strategic moves**. They highly depend on the order of moves in which, in the case of the player with the initiative (the one who move first), the action must be **observable** to the other player, and must be **irreversible**, that is, cannot be changed it in a later point of the game.

Strategic moves modify the rules of the original game to create a new game with two stages. In the **first stage** the player indicate how he will act (which strategy he is going to use) during the second stage. The **second stage** is the original game, normally with some modification of the payoffs and the order of moves.

During the first stage a player can make three different strategic moves: commitments, threats, and promises:

- **Commitments** refer to a declaration made by a player A indicating that its future movement in stage two is **unconditional**. For instance, player A can say “*I will do X in the game we are playing*”, and during the second stage he will do X independently of player B’s strategy.

In the cases of threats and promises, they belong to the category of **response rules**, statements made by one player that indicate his future response to other player's specific actions during stage two.

- **Threats** are response rules that try to deter the other player to choose a specific strategy. Player A can say “*If you choose X that annoys me, I will do Y (e.g. I will hurt you)*”.
- **Promises** are response rules that try to compel the other player to choose a specific strategy. Player A can say “*If you do Z that pleases me, I will do W (e.g. I will reward you)*”.

These strategic moves only work if the other player believes that the first player will do what he announced at the first stage, which makes **credibility** an important factor for the effectiveness of the strategic movement, and thus, has to be taken into account.

Types of collective action games

These games appear in three different types: *prisoners' dilemma*, *chicken games*, and *assurance games*. In this research we focus only in assurances games as we consider

is the one who better describe the theoretical framework for SLOCs cooperation in SCS, as we will explain in the case study section.

- Assurance Games

Assurance games are those that have two or more possible equilibria in a single game.

It may involve no conflict in payoffs among the players participating in the game, and thus all the players will prefer the same equilibrium.

A clear example is the US and U.S.S.R arms races during the Cold War (Table 2), in which both superpowers had two strategies, to *cooperate* to avoid weapons build up or to *defect*. Both countries are interested in deprived the other actor from defect, and may sacrifice defection ability if others do the same. Thus the table for this game will be as follow (Jervis, 1978)⁴:

		U.S.S.R	
		Cooperate	Defect
US	Cooperate	4 4	1 3
	Defect	3 1	2 2

Table 2. Arms Race *Game*

⁴ Table modified from the original to show payoffs instead of order of the actors' preferences.

As an assurance game, it presents more than one Nash equilibrium, *cooperate/cooperate* and *defect/defect*, among which both players will prefer the situation in which both countries cooperate, which provides the biggest payoff. The problem is that the defect strategy is less risky if they are not sure about the other player's intentions, and thus the *defect/defect* equilibrium is the probable outcome of the game if other measures are not taken (e.g. confidence building measures, monitoring, verification, etc.). We will talk again about this when applying assurance games (in form of stag-hunt game) to our case study in the next chapter.

This model also reflects the classical model of the **stag-hunt**, which uses the same table, strategies (cooperate or defect), and payoffs. As we consider that the situation of SLOCs cooperation in SCS can be better described using the context from the stag-hunt game, therefore, during the case study we will use this game to explain the similarities and differences between it and the real situation in the region. The reasons for choosing this game will be explained in the following section.

2.3 Previous Researches on Game Theory and Stag-Hunt

Much of the literature about game theory is based on theoretical situations or

laboratory experiments that present, describe, and analyze models to predict the probable strategies used by the players. Although exist real applications of game theory to real problems, they do not exactly fit the situation we present in this study: to achieve cooperation on securing sea lines of communication. In spite of this, previous findings can facilitate our research by shedding light over the way to apply the stag-hunt model on the SCS dispute.

Albers and Busby (2010), present a similar situation to the one that we analyze in our proposal of securing sea lines of communication, that is how to provide security from wildfires to a common, a public landscape (in our case this resembles to securing the SLOCs), which has some private urban interference (in our case this resembles to different stakeholders' vessels using the sea lines), and at the same time avoiding the private stakeholder to become a free rider (in our case this is represented by those countries who do not contribute to SLOCs protection). They show how public resources focus on those zones with mixed ownership, which causes high cost for society, while private ownerships avoid the payment of securing their own territory. Contrary to these authors' situation, our case study does not have a superior authority to manage and compel all the stakeholders to protect the SLOCs, making the problem of avoiding free riders more difficult to overcome.

The number of actors willing to initiate cooperation from the beginning is also an important factor. Becker and Easter (1999), use game theory to evaluate the possibility of cooperation for managing international water resources like the Great Lakes. They found that even when the non-cooperative solution is the dominant strategy; when coalitions are formed from a subset of participants cooperation is easier, and even the remaining players realize that is better for their own interest to cooperate.

On the other hand, in order to achieve cooperation for a common good, some studies show that the trust each actor has on others is an essential factor. Bosworth (2013) argues that the more trusting people can facilitate the provision of more public goods, demonstrating this in experimental situations similar to the stag-hunt game, in which players with high trust on others tend to contribute more to achieve general interests.

Moreover, in relation to assurance games, Borstein (2013) experimentally supports the idea that the temptation to defect for fear to other player's strategy, is countered by both players' preferences for obtaining better payoffs in the mutual cooperation situation, which is easier to reach when communication between disputant groups is

allowed.

Finally, according to Madani (2010), although our research is focused on the stag-hunt model, it is also important to take into account the evolution of the situation through different periods of time, due to its characteristics and structure can change, making that the theoretical model that better fits to the reality can be changing among stag-hunt, prisoners' dilemma, chicken game, or others, something that eventually will be also reflected in the stakeholder's behaviors, and thus, changing player's preferences for the different strategies, which eventually will lead to different outcomes.

In sum, previous uses of game theory, and specifically the stag hunt-model, highlight the relevance of the number of actors initiating cooperation to cause a positive spillover effect on others, give importance to trust between participants to facilitate coordination and thus boost the provision of a public good, support that communication facilitates all players to obtain better outcomes in assurance games, and advice to pay attention to the evolution of the situation, due to it can fit better to other theoretical models in different periods of time.

These previous findings in the game theory literature are taken into account during this research in chapter 4 in order to create the theoretical framework that shapes the rules of the game for SLOCs cooperation in SCS. The stag-hunt model is the one we consider at present best fits to the SLOCs security cooperation, due to its cooperative strategy can provide more safety for the SLOCs than individual actions from each player, this mean that it allows to expand the pie, increasing the payoffs of all stakeholders, something that cannot be easily done with the resources and sovereignty issues, which respond better to prisoners' dilemma or chicken games in which cooperation is more difficult to attain.

2.4 Research Limitations

In order to estimate the possibility of China cooperating with other SCS countries on SLOCs protection, we have chosen rational choice from a realist standpoint to analyze and give an answer to this question. When choosing one specific theory, we are better in analyzing some aspects of the issue, but at the same time we put limits in others not considered or that are less important for the chosen theory.

It is not possible to use all the known theories and apply them into a case study to make an accurate prediction of what is going to happen in the future. If you consider

all the known theories at the same time to try to encompass *everything*, eventually, you are saying nothing. Thus, in order to have a concise and clear picture of the situation, we have to establish our preferences, be specific, and concentrate our research on one theory (in this study the game theory), as well as determining those factors that can influence the rational decision of the stakeholders involved in the dispute.

We applied the stag-hunt model to provide a simplification of the SLOCs cooperation initiative in reality, thus, it does not reflect completely the real situation. Moreover, it is important to take into account the evolution of the SLOCs situation and countries' relationships in the SCS, due to they can change its characteristics and structure over time making that other theoretical models will fit better. In fact, for different kind of issues, like those involved with relative gains (e.g. resources and sovereignty), other games will be more adequate as they provide different case descriptions, different actors' strategies, and different payoffs, which respond better to nature of those situations, and thus explain the possibility of cooperation in a more proper way.

In our initiative for SLOCs security cooperation, several countries with different military, economic, and institutional characteristics are involved, therefore all of them

cannot make equal contributions to improve maritime security. This point can cause difficulties when initiating the project due to some countries will have to provide more resources than others, and the gains in maritime security are supposed to be similar for all the participants because all of them can freely use the more secured SLOCs. However, the real gains on safety will be proportional to the number of vessels each country use in maritime trade and energy imports, and thus those countries with economies based on trade and energy imports by sea (e.g. China, Japan, Singapore, etc.) will obtain more benefits, which will decrease concerns about distributions of relative gains due to the balance before and after the initiative will be kept.

Other research limitation is the actor we use to promote SLOCs security cooperation in SCS. We use Taiwan for different reasons, but the main is it has not been as assertive and aggressive in its claims as other actors in the region, and thus can be seen as a more trustful stakeholder than others. However, it is not officially recognized by other states, is not so military-economically powerful as China or US, and the sovereignty issue with China can difficult its participation in initiatives with other countries in the region, thus, its contribution to the issue may be not so determinant as those of other countries.

One possibility to solve the previous problem is to use Japan as initiator of the cooperation, due to it will be a more powerful actor that can facilitate the implementation of the initiative, or US, who also have interests in the region, and as superpower can foster military, economical, or institutional cooperation. The problem is that, in the present situation, Japan is involved in sovereignty disputes with China in the East China Sea, US is not welcome by China due to its alliances with Japan and the Philippines, and because both countries are not SCS states. Thus, at present will be more difficult for China to accept these countries as promoters of initiatives in the SCS region, but in the middle-long term, if Chinese relationships with these two countries improve, it will be possible to implement joint initiatives from US and Japan.

Concerning the factors this study focus on to try to understand Chinese behavior in the region, we mainly consider the oil factor, sovereignty, Chinese military development, previous joint maritime patrols, non-traditional security cooperation, and the Code of Conduct (COC) for SCS. In our case we do not focus on economic relations between China and other ASEAN countries, nor in individual actors' values and believes as for instance presidents of the countries involved in the disputes. We

believe that they are important, however in order to produce a research with specific answers, and to delimitate the scope of the research, we must focus on those factors that, after have done the literature review, we consider are the most determinant for the SCS issue.

In spite of this, it is not sure that all these factors applied in one theory, can describe, explain, and predict future developments in the issue. Therefore, in order to overcome this handicap, it is necessary to reproduce the research using different theories and/or factors to test if the results are the same or are different as those in our study. Moreover, it is also important to determine in which one we obtain results that fit better to the reality, or that provide with better tools to describe and predict the future development of the situation, as well as to overcome the gap between the theoretical desired framework and the real situation in SCS. As the scope of this study does not cover all these designs, they will be taken into account in future investigations on the same topic.

Lastly, there is a personal limitation related with the understanding and use of *game theory*. We are using simple models to explain behavior and rational choices, thus I am confident that, although at present I do not have a comprehensive understanding of

this theory, I am sure that with the help of my professors, the academic literature, and other educational material available on the Internet, I will be able to overcome it.



Chapter 3. Background information

This chapter presents and analyzes the issues that we consider highly influence general cooperation in the SCS region. These are: Sea Lanes of Communication and Non Traditional Security Threats, Sea Lines of Communication (SLOCs) and Alternatives Routes, The String of Pearls and Military Development, Chinese Military Development and Consequences, China's delaying strategy, China and the South China Sea, US-China Relationship; ASEAN, China, and the Code of Conduct, and China and Cooperation in SCS.

3.1 Sea Lanes of Communication & Non Traditional Security Threats

In recent years China's economy has experimented a huge growth with a double digit GDP index growth almost every year, from 2004 to 2010 (World Bank, 2013a), an economy powered by its international trade, reaching a maximum peak in 2006 with a 65% of GDP, and 47% of GDP in 2012 (World Bank, 2013b), and highly dependent on energy resources and maritime transportation with oil imports by sea reaching 90% of the total (Zhang, Qiang & Ying, 2013). China's concerns over a disruption of the SLOCs has made Chinese interest to focus their attention on secure the lines that allow its trade to flow, and its oil imports to reach the mainland (Ministry of National Defense, 2013). Any interruption of Chinese trade will have negative effects on its

economy, especially an interrupt on its oil imports, which makes many analysts suggest that China should protect the SLOCs from different possible threats. As a consequence, China is paying a lot of attention to many factors related to them with great emphasis on energy security, military development, and transnational crime fight. Some examples of this are China tackling piracy in the Gulf of Aden (2008; Kim, 2011), or increasing the People's Liberation Army Navy (PLAN) in the South China Sea region (Muscolino, 2013; Horta, 2012).

There are different types of threats to the SLOCs (Cole, 2008), among them we find environmental destruction, terrorist threats, transnational crime and piracy, nation-state threats (and their connection with terrorist-piracy), and sovereignty claims. Besides maritime terrorism and piracy, other Scholar (You, 2007) also identifies political instabilities in oil producing regions as additional threat to SLOC, as well as the United States factor affecting China's SLOC security, especially in a probable war scenario between China and Taiwan (Holmes & Yoshihara, 2008; You, 2007, Kennedy, 2009), in which the US may try, if the economic repercussions do not dissuade US to attempt it, a blockade on Chinese oil imports in the Indian Ocean to limit the oil flow that moves Chinese military machinery.

Among the threats that can be harmful to the SLOCs, political instability in oil producer countries, piracy, and blockades, are those that can have important repercussions on the economy, politics, and energy security of the country affected, in this case China. These three aspects are taken into consideration in this research as they are related with the diversified employment of China's Armed Forces to tackle non-traditional security (which includes humanitarian relief, useful to re-establish political stability after a conflict), combating transnational crime (e.g. piracy), and protection of SLOCs (Ministry of National Defense, 2013).

3.1.1 Piracy is an increasing illegal activity in the Horn of Asia, the Malacca strait, and the South China Sea (SCS), causing a negative impact in the SLOCs, which affects the trade and oil imports of different countries (Bateman, 2010). China is one of the countries that can be highly damaged by an attack on its ships, as many of its oil imports come from this region, and around 80% of these imports have to cross the Malacca Strait (HIS, 2013), a special risky point related to SLOCs security. In the last years, there are some regions like Somalia, Indonesia, and to some extent the South China Sea, where there was an increment on piracy activity (IMB, 2008-2012). China respond to piracy can be seen it is support to countries like Malaysia, sharing information and intelligence with littoral states in the straits (Woolley, 2010), as well

at its military participation in patrols to tackle piracy in the Gulf of Aden (Kim, 2011), which shows its concern to fight this kind of transnational crime in order to protect its trade and oil cargos.

Chinese respond to piracy

One of the Chinese responds to **Piracy** is sending warships to the Gulf of Aden (Kim, 2011), to take part in the international patrols that are been carrying out in the region. Moreover, China has been investing in building ports and some military bases in the Indian Ocean, what some analyst call the *string of pearls*, supposedly to provide replenishment to its warships and or for commercial interest (Kuhrana, 2008). However, during the last years, the number of piracy and arm robbery acts in international voyages has been varying, reaching in 2013 the lowest level in the last seven years (IMB, 2013). If we take into account the numbers of: *piracy total attacks/total hijackings/attacks to Chinese vessels/Chinese vessels hijacked* registered in the world from 2008 to 2012 (Table 3), we see that Chinese vessels suffered an average of 3 attacks per year, which is very small compare with the 60,000 ships that cross the Malacca strait every year (EIA, 2012).

Year	2008	2009	2010	2011	2012	Average
Total Registered attacks	293	406	249	439	297	336.8
Total hijackings	49	49	115	45	28	57.2
Attacks to Chinese ships	5	2	4	4	0	3
Chinese ships hijacked	1	1	0	0	0	0.4

Table 3. Total Piracy attacks/hijackings, and attacks/hijackings to Chinese ships from 2008-2009 (IMB, 2008-2012).

Before Chinese participation in the international operation to tackle piracy in the Gulf of Aden, the numbers of attacks to Chinese ships from 2003 to 2007 were: 2003, 2; 2004, 2; 2005, 1; 2006, 1; 2007, 2 (IMB, 2007), with an average of 1.6 attacks to Chinese ships per year, less than the average after Chinese warships started to take part in the international counter-piracy mission, which means that China's participation has not decrease the number of attacks to its ships in general (Table 4).

Year	2003	2004	2005	2006	2007	Average	2008	2009	2010	2011	2012	Average
Total Registered attacks	445	329	276	239	263	310.4	293	406	249	439	297	336.8
Attacks to Chinese ships	2	2	1	1	2	1.6	5	2	4	4	0	3

Table 4. Piracy attacks to Chinese ships by year. In 2008 China starts its participation in international anti-piracy operations in the Gulf of Aden (IMB, 2003-2012).

Moreover, according to some studies (Erickson; Collins, 2008) China needs an average of two very large crude carriers (VLCC) to cover its energy imports. Even if the 3 attacks per year become hijackings to Chinese oil tankers, it only suppose a total loss of 1.5 days of oil imports, something that can easily be covered with the Chinese strategic petroleum reserves, which in 2009 was 103 million barrels (approximately equal to 10 days of oil reserves), and by the end of 2013 will contain 315 million barrels, which can cover more than 30 days of its present daily consumption (IEA, 2012). Therefore, although international presence in these regions is necessary to avoid the growth of piracy activity, Chinese increase of military capabilities and ports/bases cannot be justified with the argument of protecting its own ships. In fact, present Chinese cooperation in the international operations to tackle piracy can be enough as long as the different countries keep participating, and the attacked ships follow the *Best Management Practices for Protection against Somalia Based Piracy* recommended by the International Maritime Bureau, which are useful to make pirates to abort their attack when they know they have been spotted or the attacked ship has been secured (IMB, 2011).

3.1.2 Blockade to Chinese oil tankers is other of the main threats that China can face while protecting its SLOCs. One potential places where this can happened is in chokepoints like the Malacca strait, the main route for Chinese oil shipping. A state that want to pressure China on a specific issue can decide to block its oil imports in this and other points like the Lombok Strait, to destabilize Chinese economy and coerce China to make concessions. Therefore, one of the options for Beijing to transport and protect Chinese oil without depending on foreign countries' ships is to create its own tanker fleet, something that, according to some scholars, has its pros and cons (see Table 5). Chinese Ministry of Transport in 2005, due to national security reasons, stated the necessity of creating this type of fleet (Gautam, 2011), which can be protected after increasing Chinese military power at sea (Zhang, 2006).

China options against a blockade

A **blockade** to its oil imports will be the most controversial of all the threats to Chinese SLOCs. If this implies the use of foreign military ships, thus the threat will move from a non-traditional security issue to a traditional confrontation between two countries, which could lead to the use of military force by China. This situation can give support to the argument of developing Chinese military in order to protect its oil imports. However, some studies indicate that countries that previously have

experienced blockades can decrease their negative effects, and respond better to them than countries without previous experience. China has experienced three different blockades from the end of 19th century to the 20th century (Eleman, B. 2007), and also has the support provided by continental countries like Russia, from which it imports oil by train and pipelines (Kozyrev, 2008), thus, this factors will allow China to take better counter blockade measures during a crisis.

Other important source for its oil demands is its endogenous production. Although Chinese total oil consumption for 2012 was 10.2 million bpd, however it had an endogenous oil production of 4.15 million bpd, more than 40% of its present requirements (BP, 2013), which means that in case of a total blockade of its oil by sea, it still can use its own production, the oil transported through inner land by pipeline and or railways, and the oil kept in its strategic petroleum reserves to decrease the effects of the blockade. Moreover, some studies argue that even in case of a future blockade to Chinese oil imports by sea happened, the different types of blockade will be ineffective due to the huge numbers of warship/supply ships that have to take part on it, the danger of a Chinese military response, the strategies of reflagging the ships with other nationalities, selling the oil on route, forging destination documents, etc. (see Annex II), and, as we will explain later (see 3.2. Sea Lines of Communication

and Alternatives Routes), the alternative routes to obtain oil, its own endogenous oil production, along with some other factors, lead to the conclusion that China does not need to have its own tanker fleet to increase its energy security and to provide them with military protection, due to a perfect or effective blockade will not be feasible unless the blockade is an energy denial (Collins & William, 2008). Furthermore, an energy denial means attacking Chinese refineries, pump stations, and transportation routes in the mainland, something that will be complicate as China possess the new S-300/S-400 surface to air missiles (Shlapak, 2012), as well as it has developed in recent years ballistic missiles that can coerce the enemy or create access denial zones, zones where hostile armies cannot enter in, due to the high possibilities of been attacked and destroyed by massive missiles attacks (Holmes & Yoshihara, 2011a). This implies that pressures on Beijing to make concessions in a specific issue, could lead to a military conflict with China, an outcome that cannot justify the blockade and will not be supported by the international community (Collins & William, 2008).

3.1.3 Political instability in oil producer countries is the third important threat that can interrupt the oil supply coming through SLOCs from its source of origin. During 2011, around 75% of Chinese oil imports mainly came from African and Arabs countries, with Saudi Arabia, Angola, Iran, Oman, Iraq, and Sudan as principal

suppliers (EIA, 2012). The disruption of the flow of oil from these countries due to political instabilities and wars will produce a tremendous impact on Chinese economy, on its politics, and in its military. In 2008 Angola organized legislative elections, won by the Popular Movement for the Liberation of Angola (MPLA), which at present rules Angola but is seen as authoritarian regime in which several anti-governmental demonstrations have been held after the *Arab Revolution* wave, and, according to Angolan government, some of them promoted by Western intelligence services (De Moraes, 2012). In Oman, during 2011, protesters marched against corruption and raising prices, demanding better distribution of the oil wealth (Worrall, 2012), in Egypt president Mubarak was toppled down (Reuters, 2011) to be substituted for a short period of time by a Islamist party considered extremist (Dailymail, 2012). In Libya the civil war also overturned Gaddafi (Reuters, 2011), and other civil war is still ongoing in Syria (BBC, 2014c). At present, there is unrest and turmoil in these regions, and therefore, the possibility of new conflicts to emerge interrupting the oil supply are still a concern for many countries. China, which companies were very active in Libya before the revolution, will probably have more difficulties to access Libyan oil after the end of Gaddafi regime (Erian, 2012). Moreover, the imposition of sanctions to oil producer countries can also affect a country's long term productive capacity, as for instance happened in Iran and recently in Syria, affecting the supplies

to its main importers countries (Darbouche & Fattouh, 2011), therefore, China will normally oppose to UN sanctions to countries in which it has interest in, as for instance with Iran and its oil exports (Downs & Maloney, 2011).

China and oil export countries' political instability

As we mentioned in the previous section, political instability in oil producer countries can also cut the flux of Chinese imports in case of serious issues like a civil war in African and Arab countries. But what can China do to solve political instability problems if they happen in its oil supply countries? Chinese *Five Principles of Non Interference* shapes Beijing influence on other foreign countries' domestic politics (Taylor, 2006), making difficult that China tries to manage other's countries domestic issues directly by itself. However, It can give support to regimes (e.g. selling weapons) to smash the revolution/civil war down, or it can support actions in the United Nations Security Council to tackle the situation, but only if it does not harm Chinese interests in that country. The decision will probably depend on the kind of previous relationship that China had with the country and the benefits it can get in each situation, but as long as there is turmoil in the country, the risk of oil shortages will be high due to the decrease of investments to raise production (Darbouche & Fattouh, 2011). Both options, giving support to the regime or acting through the UN do not

need a huge increase of military capabilities, just the export of weapons in the first case, or taking part in peacekeeping/peacebuilding forces, which implies sharing the cost (and also the future benefits) of the intervention with other countries. For instance, Chinese economic contribution in peacekeeping operations for the years 2010-2012 was 3.93% of the total of international contribution from countries to UN Peacekeeping Forces, with an expending of 308 million dollars approximately (calculated from UN, 2012). This quantity is less than half the price of one of the Chinese Sovremenny-class destroyers, around 750 million dollars (Global Security, 2012c), but, as we will see, taking part in peacekeeping operations can bring more benefits from the different regions in which these forces are deployed, while, at the same time, they can protect Chinese energy interests in oil producer countries.

For instance, Chinese peacekeeping operations' main interest in Africa is the **strategic security and stability** of a region in which China has made important investments, and is crucial to cover its energy needs, like in Sudan (Mariani, 2012). In fact, in 2007 the biggest contingent of Chinese peacekeeper were deployed in Africa with 1316 personnel, which shows the great interest in a region important from a diplomatic, economic, and military perspective. The reason is that there are several benefits for China when deploying its personnel in this region (Roger, 2007):

- 1- Helps China to be seen as responsible stakeholder in the international community
- 2- Creates a good image for China in Africa as future partner of “*unconditional foreign aid*”
- 3- Increases its influence in regional institutions (e.g. African Union)
- 4- Gains experience overseas in operational practices and methods of foreign military forces, as well as operational deploying in Africa
- 5- Chinese peacekeepers gain experience in extreme environments

Therefore, China does not need to develop military capabilities in order to secure political stability in its main oil producer allies. As we have explained, it just needs to support measures in the UN Security Council and use its peacekeeping personnel to get benefits from the situation (like in Africa). On the other hand, if UN measures are not for its benefit, China can act unilaterally to support and stabilize those regimes that provide China with the resources it needs.

In sum, all these arguments support the idea that to avoid a great disruption of Chinese oil supply, China do not need to develop a huge military capability projection

that will protect its imports and oil tankers, as it possess capabilities to defend itself against energy denial attacks that will be also seen unmoral by the international community, it takes part in military cooperation in the Gulf of Aden to tackle *low effectiveness* piracy attacks, and is using its position in the UN Security Council to support peacekeeping operations, or to veto resolutions against its interest in oil producer countries.

3.2 Sea Lines of Communication and Alternatives Routes

In order to reduce the dependence on oil transportation through SLOCs, China has other alternatives routes to import it, which basically are continental transport through railway and pipelines. Railway transportation was the main way of transporting oil from Russia to China, but recently the pipelines network reaching China has increased and started to substitute the railway imports. There are prospects for the development of new pipelines that will provide new routes to transport Chinese oil and reduce, in part, its dependence on sea imports.

3.2.1 Railway Transportation

Railway transportation is one of the ways China imports oil from Russia by land.

According to some sources (Ebel, 2005, p.49), the Russian Railways reported that China imports of crude oil coming from Russia by rail in 2004 were over 159,000 bpd (barrels per day), with a schedule to increase it to 200,000 bpd in 2005, 300,000 bpd in 2007, and 530,000 bpd by 2010. Other source (Kozyrev, 2008) mentions that the projected supply volume for 2020 by railroad from Siberia is between 500,000-600,000 bpd and the realistic volumes by 2015 will be between 270,000 and 300,000 bpd. Despite these previsions on the increment of railway transportation, an increase on the use of pipelines seems to compete with the share of oil imports into the mainland, due to in 1997 China initiated negotiations with Kazakhstan to start energy cooperation, agreeing to develop an oil pipeline that goes from western Kazakhstan to the Chinese region of Xinjiang (People's Daily, 2006). Later, others pipeline projects came, as for instance the agreement signed with Russia in 2003 for a pipeline from Angarsk to Daqing (China Daily, 2003), or the Chinese-Burma oil pipeline agreement signed in 2009 (Kong, 2010). One of the consequences of the use of these pipelines to import oil is that Chinese imports by Railways from Russia are expected to fall from 2011 (Reuters, 2011).

3.2.2 Pipelines Transportation

Pipeline development is increasing in China as a way to import oil from Russia and

other Asian countries. According to one study, one of its pros is that is less costly than transporting oil by railway (Erickson; Collins, 2008), however is still more expensive than sea transport by oil tanker. At present several pipelines connect different Asian regions with China, and there are proposed projects for the development of new pipelines in the following years.

One of these pipelines is the **Russia-China pipeline**, which goes from Skovorodino to Daqing and form part of the Russian East Siberia Pacific Ocean pipeline (ESPO). It is expected that in 2013 will transport around 400,000 bpd, reaching 600,000 bpd by 2014, getting closer to the Rosneft Russian oil company' aim of exporting more than 1 million bpd to China (Reuters, 2013a). This pipeline will substitute partially the oil imports coming by railway from Russia, but is not clear if it will be working at maximum levels as there are also a project to build an extension to Nahkodka, in order to *feed* a new 400,000.bpd refinery in that region (Erickson, Collins, 2010).

As mentioned before, the **Kazakhstan-China oil Pipeline** was the fruit of the negotiations started in 1997 between the two governments. It goes from Atyrau to Alashankou, and theoretically can carry up to a maximum of 400,000 bpd. However, in 2007 just carried a total of 102,600 bpd (Erickson, Collins, 2010).

The **Burma-China** oil pipeline, which goes from Made Island and extends into 771 km onshore, will become in full operation in a short time period, and is expected to deliver more than 400.000 bpd (People's Daily, 2013b). However the oil is not produced by Burma, it is just oil transported by sea lines that bypass the Malacca strait, which means it will not increase the total Chinese oil imports.

The **Pakistan-China pipeline** is also one of the proposed alternatives to avoid the Malacca dilemma. It will receive oil in the Gwadar port, but will have to be lifted up about the sea level before reaching China. It is expected this oil pipeline could deliver up to 250,000 bpd. However, there are several difficulties for the implementation of the project, the high transport and construction costs, or the risks of an attack to the pipeline that can disrupt the flow of oil are some of them (Erickson, Collins, 2010).

According to this information, pipelines offer an alternative way of transportation, but more costly and risky than by sea means (Erickson, Collins, 2010). Moreover, the oil demand covered by these pipelines (Russia, Kazakhstan, and Myanmar's) will reach only 14% of China total oil imports (Gautam, 2011), indicating that, at present, pipelines cannot become an efficient substitute for sea transportation.

3.2.3 Building a State Owned Oil Tanker Fleet

An oil tanker fleet owned by China is another option that is been developed in order to import and protect Chinese oil without depending on foreign countries ships. The Ministry of Transport stated that it is necessary to create this type of fleet for national security reasons (Gautam 2011), which can be protected after increasing Chinese military power at sea (Zhang, 2006). However, according to some authors (Erickson; Collins, 2008), although it will give Chinese companies a lot of profits due to it can offer transport services to other countries, and also because can boost its own shipbuilding industry, an own tanker fleet not necessarily will provide more protection to Chinese oil imports (see Table 5).

Pros	Cons
Increase its independence from foreign carriers	Requires Blue Water with a great number of warships/support vessels to protect all its tankers
Flagging its own ships allow China to easily respond to attacks on them	Easy to detect whose country the tanker belongs to
Can haul most of its imports	If it will use by China or by foreign countries, will depend more on situations that can generate high profits to shipping companies than on politics
Can use them has carriers for other countries to increase incomes	In case of crises, if it has to recall them = economic repercussions + signal of China preparing for hostilities
Provides economics incentives = employment + foreign buyers + industrial development	Quality control problems + weak marine equipment industry

Table 5. Pros and Cons of Building its own Oil Tanker Fleet

Firstly, China will have to acquire a numerous warship fleet to protect its tankers, as well as will have to develop a blue water capability for force projection during long periods of time. Secondly, flagging the tankers with Chinese flag, although it will allow China to give the right to respond to an attack as it were an attack against its sovereignty, however, its tankers will be easily identified and blocked at any time while they are on route. Thirdly, although China hopes to haul most of the Chinese oil imports with these tankers, the final outcome will depend more on situations that can generate high profits to shipping companies than on politics. Finally, in case of crises Chinese government will have to recall its tankers, causing economic repercussions to other countries, and giving a sign that China is preparing for Hostilities. Despite these disadvantages, China is decided to develop its own tanker fleet, which will provide with more independency from other foreign transportation companies, and will allow China to cover all its oil shipping necessities. Moreover, although the advantages of an own oil tanker fleet against a blockade are not clear, they will be useful during a conflict in which China is not directly involve, helping China to secure its oil imports at cheaper rates (Gautam, 2011).

In conclusion, although railway and pipeline transportation offers diversification of

Chinese oil imports, they present several problems like high cost, more risks than sea transportation, and do not cover a considerable portion of Chinese oil needs. Thus, it is expected that in the following years China will be still dependent on the oil transported by sea, giving high importance to the protection of the SLOCS, and therefore, to the development of its military power at sea.

3.3 The String of Pearls and Military Development

In this section we present the Chinese *String of Pearls* together with the suspicions that are creating in other regional actors, as well as Chinese recent military development, its aims, and other states' reactions in the region.

3.3.1 The String of Pearls

The previous point presented China's oil dependence on sea transportation, and how it is trying to diminish the negative effects through different means, among them the creation of a state owned oil tanker fleet. However, in order to protect this tanker fleet, China needs to develop its military capabilities with a blue water navy that will allow China to project its power far in the Indian Ocean. According to some authors (Pehrson, 2006; Kuhrana, 2008), although the *String of Pearls* in the Indian Ocean are seen as a group of military/commercial bases influenced by Chinese power, they

consider that it is mainly related with China's aim of protecting its energy imports. However, exist doubts about China's narrative of peaceful development in the Indian Ocean, which probably will lead to the deployment of warship in ports located in the *String of Pearls* with the intention of providing better protection to the Chinese SLOCs, but eventually could be used as a disguise to seek hegemony in the region (Pehrson, 2006).

The *String of Pearls* are those ports situated in strategic locations in the Indian Ocean littorals, which have the potential of been use as replenishment facilities by Chinese forces operating in the region. It is compounded by different ports and facilities situated in the future port of Gwadar, Hambantota port in Sri Lanka, a container port in Chittagong Bangladesh, naval bases in Myanmar, and a future speculative submarine base in the Maldives Islands. Gwadar could be upgraded to a military naval facility by Pakistan, and it could allow Chinese military to use it. The Chittagong military and civilian facilities could be also upgraded as well with similar purposes.

The enormous economic support to the construction of a port in Hambantota will assure Chinese naval presence in Sri Lanka, and the cases of the military bases situated in Myanmar, which were built in cooperation with China, have also the potential to be used by Chinese vessels. Lastly, the present prospect for the

development of a submarine base in the Maldives is not clear, but there are evidences that China has been trying to increase its presence in the zone through cooperation with its government. Although China will not necessarily deploy military vessels in these ports, some of them have the potential for China's military use or could be upgraded later (Kuhrana, 2008). Other authors consider that China is not really developing ports to project its military presence in the Indian Ocean, at least for the time being, and it is only for keep good relationships with these countries in order to assure essential supplies to Chinese ships fighting non-traditional security in the Gulf of Aden. According to this author other ports in the Indian Ocean with this function of replenishment or transit point are: Colombo in Sri Lanka, Changi naval base in Singapore, Karachi port and naval base in Pakistan, Aden port in Yemen, Djibouti in the Gulf of Aden, and Salalah port in Oman. Although Chinese ships visit them for replenishment, there are no clear indications that will be used as permanent military ports for China (Kostecka, 2011).

3.4 Chinese Military Development and Consequences

During the last 20 years China's annual GDP growth has been high, varying from 14% in 1993 and 7.8% in 2012. However, despite these fluctuations Chinese Military

investment has been constant from 1993 to 2012, with a 2% of GDP expenditure per year (World Bank, 2013c). Although it seems that China is not increasing its investment in military capabilities, other sources consider that it has raised its military budget. Contrary to official figures that say China's military expenditure in 2010 was \$78 billion, the Stockholm International Peace Research Institute (SIPRI) estimates it was \$119 billion. It also argues that Chinese military spending has risen 189% from 2001 to 2010, with an annual average increase of 12.5% (Perlo, Cooper & Ismail, 2012, p.159), a military development that, even when it was declared to be peaceful, is creating suspicions about China's real intentions in the region. Recent events, like the US and Chinese warships that almost collided in the South China Sea (SCS) region (Tow, 2014), the creation of a strict Air Defense Identification Zone (ADIZ) overlapping with the Japanese one (NYT, 2013), or the implementation of the fishery legislation in Hainan prefecture covering most of the SCS (Hsu & Murray, 2014), make think that Chinese assertiveness in the region is growing, and will be higher when its military capabilities were projected along the region.

One of the arguments to develop its army is the necessity of protecting Chinese maritime interest, which include protection of Sea Lines of Communication (SLOCs) (Ministry of National Defense, 2013) due to they are considered essential for Chinese

economy and energy security.

In fact, in recent years, China has experienced a modernization of its military forces (Cordesman & Kleiber, 2007), which reflects this possible growth of its military budget. For instance, it has increased the number of its 4th generation aircrafts (e.g. Su 27, Su-30, J-10, J-11A/B) reaching 569 units (Shlapak, 2012), and also has built 5th generation aircrafts like the J-20 or the newest J-31 (Global Security, 2012a, b). In relation to its naval forces, although some of its vessels are not new, China possess a numerous fleet with more than 13 destroyers, including the new type 052D *Aegis* destroyers (The Military Balance, 2012; Le Mière, 2014), 65 frigates, and submarines that recently increased to 71, and among them are new acquisitions of Russian Kilo class submarines, domestic developed new models as the nuclear-powered ballistic missile submarine (SSBN) *Jin-class* or *Type 094*, the nuclear powered attack submarine (SSN) *Shang-class* or *Type 093*, and two new non-nuclear powered submarines (SS), *Yuan-class* or *Type 041* and *Song-class* or *Type 039/039G* (this last one quieter than other diesel submarines) (O'Rourke, 2011). Moreover, China also commissioned its first aircraft carrier *Liaoning* on 25th September 2012 (People's Daily, 2012b; Lanteigne, 2013), it was rebuilt from an old Soviet vessel the *Varyag*. It is expected this is only the first of future ones, as some analysts consider that China

will have to develop more advanced units in the long term to protect its maritime security and development (Buszynski, 2012).

This increase on Chinese military capabilities seems to have created a response in some South East Asian nations as Singapore, Vietnam, Indonesia, Malaysia, and the Philippines, which have acquired new military capabilities. However, some scholars argue that it seems to be related more with the modernization of their armies, and the keeping of the *status quo* in the region, rather than representing an arms race. Instead, some authors consider that it can be defined as an arm dynamics (Bitzinger, 2010), which hardly will match Chinese growing military capabilities (Sheldon, 2012). Moreover, other scholars consider that the People's Liberation Army development is not aimed to become a hegemon in the region, but to protect some core interest from inside the mainland to overseas (Fravel, 2008). The development of its army has five strategic goals:

- 1- Regime security: maintaining Chinese Communist Party (CCP monopoly)
- 2- Territorial integrity: protection from external threats
- 3- National unification: the Taiwan issue

- 4- Maritime security: protecting sovereignty, maritime resources, SLOCs
- 5- Regional stability: avoiding/deterring peripheral armed conflict that can damage China's development

China pretends to achieve these goals by strengthening three general capabilities:

- 1- Internal control: main role of the People's Armed policy.
- 2- Aerial Denial: creating a buffer around its continental and maritime periphery.
- 3- Limited regional force projection: projecting forces and sustaining military forces beyond its borders.

The increase of Chinese military expenditure, together with the development of aerial denial capabilities, and limited regional force projection, even when not necessarily true, can be seen as China's intentions to dominate the region, and therefore intensifying the security dilemma, which creates spirals of tensions that eventually can drive into armed conflict. In fact, according to some studies Asian region is in an emerging arms race, due to it has increased 61% its military expenditure from 2002 to 2011, has expanded and modernized its military capabilities, and possess a mix of

internal and external technological factors that is creating three blocks, US allies, US adversaries, and a neutral bloc with industrial age armed forces, which makes think that a repetition of Europe during 19th - 20th century, its arms races and world wars, is a real possibility in Asia (Tan, 2013, p.210).

The development of the String of Pearls together with the increase of Chinese military capabilities, seem to respond to Chinese core interests like regime security, territorial integrity, and regional stability. However, some of these core interest, national unification and maritime security, can create doubts about China's military development real intentions, emphasizing the security dilemma, and triggering an arm race to counterbalance its growth, which eventually can fuel territorial disputes in the region (e.g. SCS), decreasing the probability of cooperation, and leading the situation to an undesirable arms conflict.

3.4.1 Consequences

Despite the aforementioned arguments about the difficulties of blockading Chinese oil imports, the stakeholders' aim to peacefully resolve the disputes, and the steps to develop a COC for SCS region, it seems that China is still following its initial plan for development and is increasing its military investment (Perlo, Cooper & Ismail, 2012).

Moreover, it has also decided to build more oil tankers to not depend on foreign transporter companies. This will allow China to flag the ships with Chinese nationality, and therefore to respond militarily to a blockade on its tankers, due to Beijing can consider it as an interference to its sovereignty and national security (Erickson & Collins, 2008). The development of the tanker fleet could be used as an excuse to increase its military capabilities to protect them, which eventually can also be used with other intentions, as for instance being more assertive in its territorial claims in the Asia Pacific region. As a consequence, any attempt to engage China in energy cooperation in regions like SCS, or negotiate with it about sovereignty issues, will be less successful as China will have more bargaining power. Moreover, the string of pearls strategy could be used to give support to the increased Chinese army, providing China with more options for military projection, and facilitating it to become a regional hegemon. However, other Asia Pacific states like India, Japan, ASEAN countries, or United States will not be observing Chinese military development without reacting to it. The possibility of triggering an arms race to counterbalance Chinese military development will be high, and therefore tensions will rise making Asia Pacific a more instable region.

3.5 China's Delaying Strategy

The previous ideas give support to what some authors consider China's delaying strategy in SCS (Fravel, 2011; Hu & Chan 2012, Zhao 2013), which will allow China to strengthen its position in long term when occupying a piece of land, due to, based on international law, the passage of time strengthen state's claims over the occupied territory (Fravel, T. 2011). The delaying strategy is also useful to improve more China's military capabilities over time. In fact, at present its capabilities are better and bigger in number than other SCS states, and therefore, it is strong enough to confront a regional coalition (Goldstain, 2012). However, if US decides to take a direct military role in the issue, it will probably counterbalance Chinese military power. Moreover, considering that China has to manage also disputes in East China Sea, a confrontation with Japan will probably end with a loss of part of the military capabilities of both countries. Therefore, China will be better in keeping a delaying strategy that allows it to deter other state's claims over SCS, decrease the probability of escalation, and gives it time to increase its army in quantity and quality. However, in order to be able to deter US or other countries of deploying their armies in a long term, China should not deploy its new army until it is powerful enough to confront other countries, otherwise counterbalance will happen faster than China's expectations.

Other important point in the delaying strategy is that it allows China an indirect control of petroleum extractions in SCS. China will delay the settle of the dispute to avoid other countries obtaining natural resources from the maritime seabed, for instance when stopping Philippines and Vietnamese ships to research on maritime resources in the SCS in 2011 (Fravel, T. 2011). Thus, when keeping its military presence in the SCS, China can difficult other countries' economic development, while protecting Chinese own interests over its main trade and oil importation routes.

3.6 China and the South China Sea

The SCS is one of the Asian regions in which some countries are involved in territorial disputes over its islands, reefs, and sea waters. The main zones of confrontation are the Spratly Islands, and the Parcel Islands. The **Spratly Islands** consist of more than 100 small islands or reefs surrounded by rich fishing grounds and potentially natural resources deposits. They are claimed in their entirety by China, Taiwan, and Vietnam, and some parts are also claimed by Malaysia and the Philippines (CIA, 2013b). The **Paracel Islands** is a group of 130 small coral islands and reefs, about one-third of the way from central Vietnam to the northern Philippines that have potential for oil and gas development. At present they are occupied by China, but are also claimed by Taiwan and Vietnam (CIA, 2013a).

3.6.1 China's claims over the South China Sea

The People's Republic of China's (PRC) official claims over the SCS date back to 1951, when Chinese foreign minister Zhou Enlai in a statement indicated Chinese sovereignty over the different groups of islands and reefs (Paracel and Spratly Islands) in the region. The nine dash line that appeared for first time in atlases from the mainland was similar to the eleven dash line showed in a previous atlas published in 1947 (Gao & Jia, 2013), under the Republic of China Government. This line has been criticized by Singapore and the United States, and it has been considered legally groundless by some ASEAN countries like Vietnam, Indonesia, Malaysia, and the Philippines, whose, together with Brunei, also have interests in protect their sovereignty in SCS (Zou, 2012). The ambiguity of this dash line is in accordance with China's behavior toward SCS issue, which has been ambiguous in different occasions over time. In fact, some studies indicate that this ambiguity is related with China's strategy in the SCS, which is mainly based on delaying the resolution of the issue in order to consolidate its claims. It also shows how the number of claims to the SCS islands during different periods of time has varied, with a maximum of instability in the early 1990's, and peaks in 1999, 2004, and 2009 as the most relevant moments (Fravel, 2011). On the other hand, other authors argue that after 2010 there is a pattern of escalation in China's behavior about the issue that perhaps may lead Beijing to

apply more aggressive military policies in the future (Goldstain, 2011).

3.6.2 Importance of the South China Sea

The SCS has at least three different important issues to all the states involved in the dispute: resources (energy and fishery zones), sea lines of communications (SLOCs), and strategic military use. Firstly, in the year 2000 China accounted for more than 21.5 million tons of aquaculture products or 66.4% of the total world production (FAO, 2012), among them 2.1 million metric tons came from SCS region, which have a total of more than 5.6 million metric tons of fish captures by different states (Khemakorn, 2006). In 2010 the total of Chinese captures was 36.7 tons, which represent the 61.4 of the total world captures, which implies that Chinese fish demand is experiencing an increase (FAO, 2012), and therefore will need to cover it in the future. In respect to energy resources, it is estimated that in the SCS region exists oil and gas reserves of around 11 billion of barrels and 190 trillion cubic feet respectively (EIA, 2013). In 2012 China had a crude products import of 5.4 million bpd, and its daily oil consumption increased until 10.2 million bpd (BP, 2013), thereby the control of the SCS region to obtain oil and gas is important for the growing Chinese economy. In order to exert rights on the extraction of these resources, countries need to have sovereignty over the territory to determine the extension of sea they can exploit.

According to the United Nations Law of the Sea (UNCLOS), the state has rights in the Exclusive Economic Zone (EEZ), the 200 nautical miles (nm) from the baseline of its territory. In the case of SCS, it can be applied to Islands, and therefore giving the sovereign state with:

“[...]rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the seabed and its subsoil, and with regard to other activities for the economic exploitation and exploration of the zone, such as the production of energy from the water, currents and winds...”

UNCLOS, 1982. Article 56

Only those natural Islands that at high tide are over sea level, and can sustain human habitation or economic life on their own, can have EEZ (UNCLOS, 2013). UNCLOS also consider the *right of innocent passage* through foreign territorial seas. Although in general any ship can traverse the SLOCs that cross these seas if its pass is continuous and expeditious, however, the coastal state have the right to prevent passage which is not innocent (UNCLOS, article 25), something that can become arbitrary as in the Impeccable incident on March 8th 2009, in which the US research vessel, or according to China a spy ship, was conducting routine operations inside Chinese EEZ 75 miles south of Hainan Island (Mastro, 2011). One of the reasons China is assertive in the protection of these waters is because for China securing and monitoring the navigation in these SLOCs is vital for its energy security, due to

around 80% of its oils imports have to pass the Malacca strait that eventually leads to the SCS (HIS, 2013). Lastly, the SCS is a region that China could use as an access denial zone if it develops enough its military capabilities, if it is able to control Taiping (*Itu Aba*) Island and deploy anti-ship cruise missiles (ASCM) on it, or if it makes use of anti-ship ballistic missiles (ASBM) from Hanoi Island, which will cover the entirety of SCS, could be used as deterrence to avoid the build of military facilities in the disputed territories, or to deny access to foreign hostile warships (Holmes & Yoshihara, 2011).

3.6.3 Recent Incidents in the SCS

According to some authors (Goldstein, 2011; Yahuda, 2013) in the last years Chinese assertiveness in the SCS has been increasing, making the relations with other claimant states tenser. For instance, on January 2005 a Chinese patrol killed 9 Vietnamese fisherman in the Gulf of Tonkin (Vulving, 2006), and later, on July 9th 2007, a group of Vietnamese fishing boats came under fire from Chinese vessels near the Spratly Islands killing one fisherman. Moreover, the same year China passed a legislation for Sansha City to allow it to administer its claims in SCS archipelagos (Storey, 2009). On May 27th 2011, the Vietnam Oil and Gas Association opposed to the action carried out by Chinese surveillance ships, which cut the cables of a survey ship from Petro

Vietnam. The association claimed that this action was against China's commitments in the Declaration on the Conduct of Parties in the East Sea 2002 (MOFA Vietnam, 2011). The following day China's Foreign Ministry says that Vietnam's resources search in South China Sea harms China's interests and rights, and violates the agreement reached between the two countries in the SCS issue (BBC, 2011). One of the most recent incidents is the standoff that happened between Chinese and Philippine vessels on April 8th 2012, when a Philippine surveillance plane discover eight Chinese fishing boats in the Scarborough Shoal, causing the Philippines to dispatch its biggest warship to investigate the Chinese ships. As a respond, China sent two surveillance ships claiming the shoal is under its sovereignty, the Philippine ship claimed the same and the situation resulted in a standoff (Hong, 2013; International Business Times, 2012). On March 2013, China acknowledged that one of its ships fired flares to a group of Vietnamese fishing boats near the Paracels, as they did not heed the warnings to leave the zone, and negated the accusations of Vietnam saying a Chinese boat had set one of its fishing boats alight after firing on it (Mastro, 2014). Furthermore, in another incident, a Chinese and a US warship almost collide in the SCS, in a situation in which both countries consider the other part's attitude was provocative (Tow, 2014).

Furthermore, the Philippines also raised the tensions in the region when on January 2013 announced that is going to send the case to an arbitration tribunal (Mincai, 2014). Finally, on May 2014, China sent an oil rig to disputed waters in the Paracel Islands, which caused Vietnamese Government reaction, and lead to mutual aggressive behavior between their ships (Bower & Poling, 2014). These recent examples show how China is assertive in its claims over SCS, which is raising tensions in the region, and is increasing the possibility of a misunderstanding or miscalculation that, eventually, could evolve into an arm conflict.

In summary, Chinese claims over SCS are motivated by different factors, among them resources access and protection of SLOCs, which make China more assertive in the region and can lead the territorial disputes to a more violent situations that will not be favorable to other claimant countries, but neither to China if other external actors (e.g. US, or Japan) decide to get more involved in the conflict. Therefore, these issues will be considered in this research as they can jeopardize the possibilities of future cooperation in SCS.

3.7 US-China Relationship

The relationship between US and China in respect to territorial disputes in Asia, are influenced by three main points: the concern of US for freedom of navigation in the SCS, US Alliances and its arms trade with Taiwan, and the rise of China.

3.7.1 Freedom of Navigation

Chinese nine-dash line claims almost the entire SCS region, and therefore threatens the freedom of navigation, and sea transportation of countries that has interests in the regional as is the case of US. Moreover, in 1992 Beijing drew territorial lines around the Paracels and suggested that might do the same for the Spratly, which can imply that any ship entering or leaving these regions, need previous approval from Beijing (Rowan, 2005).

There are several examples of how China has opposed when US vessels and aircrafts passed across the SCS. For instance, on April 1st 2001 a US surveillance aircraft that was flying around 80 miles off Chinese south coast collided with a Chinese fighter aircraft (Rowan, 2005). In March 2009 a US navy ship, the *Impeccable*, was approximately 75 miles south of Hainan Island, inside Chinese EEZ, when five Chinese vessels maneuvered dangerously near the US ship and tried to snag the

acoustic array sonar of the ship, because Beijing believed it was been use for surveillance of its submarines. Similar incidents also happened on March 2001 with the US Navy Ship (USNS) *Bowditch*, in May 2009 with the USNS *Victorius*, and in June 2009 with the USNS *McCain* (Mastro, 2011). More recently, on the middle of December 2013, the US missile cruiser *Cowpens*, almost collide with one of the Chinese warship operating near China's only aircraft carrier *Liaoning* (Tow, 2014). All these incidents suggest that as long there is not a clear regulation accepted by all the stakeholders with interests in SCS, similar situations will occur, rising tensions and probably leading to clashes between armies.

3.7.2 US Alliances and Arms Trade with Taiwan

US has an alliance with the Philippines since 1951 with the *Mutual Defense Treaty*, under which US will act to face common dangers to both countries in the Pacific Area. Since 1947 they also had the *Military Bases Agreement* (MBA), which allowed US to keep using its military bases in the Philippines. Although, in September 1991 the Philippine senate voted to terminate the MBA (Storey, 1999), in April 2014 Obama's visit to Philippines came with an agreement between Manila and Washington to facilitate US army access to military bases in the Philippines, and it was followed a week later with the annual military joint exercise between the two armies (BBC,

2014b). These reassurances came amid the increase of tensions with China in the SCS region, both with the Philippines and Vietnam.

On the other hand, under the *Taiwan Relations Act*, US compromised to provide Taiwan with arms to ensure sufficient defense capability, as well as support in case of threat to peace and security in the Western Pacific (Bush, 2005, p.22). This can serve as deterrence to a challenge in the *Status Quo* between China and Taiwan, and to lesser extent, to protect Taiwanese interest in SCS, at least in Taiwanese controlled Taping Island.

3.7.3 The Rise of China

In July 2010 during the ASEAN Regional Forum (ARF), the previous Secretary of State Hilary Clinton emphasized her government's interest in the SCS, and supported this idea visiting the ten ASEAN capitals. Despite the cancelation of two Obama's visit to Southeast Asia before October 2013 (Euan, 2013), the president traveled to Asia in April 2014 to visit Japan, South Korea, Malaysia, and the Philippines (BBC, 2014a), strengthening US alliances and compromises with these countries in order to help to counter-balance Chinese assertiveness in the region. Some scholars argue that US rebalance is aimed to maintain good relations with China through self-restraints

and engagement policies, as well as to lead Chinese rise to a more constructively approach rather than to dictate the states in the region (Yu, 2013). However, Washington's concern with the freedom of navigation and its alliances in Asia can make US presence in SCS region not welcome by China, and therefore transforming US engagement with China into confrontation.

3.8 ASEAN, China, and the Code of Conduct

In the SCS territorial disputes with China there are involved, directly or with reasons to pay attention to the development of the issue, several countries: Brunei, Indonesia, Malaysia, Philippines, Singapore, Taiwan, and Viet Nam. With the exception of Taiwan, all the other actors are members of the Association of South East Asian Nations (ASEAN), a regional institution with Asian characteristics in its decision making process, which is expected to develop, together with Beijing, a code of conduct to manage and to try to resolve the SCS conflict between China and some of its members.

3.8.1 The Association of South East Asian Nations

ASEAN was established the 8th of August of 1967 in Bangkok with the signing of the

ASEAN Declaration by its founder members, Indonesia, Malaysia, Philippines, Singapore and Thailand. Later, Brunei, Viet Nam, Laos, Myanmar, and Cambodia joined to the association to conform the present group of ten members (ASEAN, 2012a). Their interactions with other Asian countries also have their own denomination, as for instance ASEAN plus one (with China), or ASEAN plus three (with China, Japan, and South Korea).

One of the characteristics of this institution is the *ASEAN way*, in which decision-making process is done in an *informal* manner through consultation, consensus, and without binding resolutions (although there are exceptions like the Common Effective Preferential Tariff for the ASEAN Free Trade Area or AFTA), to respect the sovereignty of its states members (Severino, 2001). It suppose an institutional model different from those of western states with liberal democracies and high economic integration, in which institutions develop rules with high levels of obligation and precision, and delegate rule interpretation and enforcement to third parties. Therefore, most decisions in ASEAN are not legally binding, making difficult to implement its agreements.

3.8.2 Towards a Future Code of Conduct

In Bali, 24th of February 1976, ASEAN members signed the *Treaty of amity and cooperation in Southeast Asia* (TAC), a document redacted for the promotion of regional peace, stability, friendship, and mutual cooperation between the states members (ASEAN, 2003). Later, this formal treaty between the members was also signed by non ASEAN countries like United States and China, and therefore represents a pillar that supports the good relations, cooperation, and peaceful management of disputes between the signatories. However, no sanctions were included to enforce these norms, and thus, make less effective its implementation (Kahler, 2000).

In November 2002, during the 8th ASEAN Summit in Cambodia, ASEAN members together with China, agreed to sign the *Declaration on the Conduct of Parties in the South China Sea* (DOC), a non-legal binding document that provides the basis for the peaceful management of, mainly, the differences over the territorial claims in the South China Sea made by China, and the ASEAN members of Indonesia, Malaysia, Brunei, Vietnam, and the Philippines. It supposes a first step for the future creation of a legal *Code of Conduct* (COC) that will be used as a tool for the resolution of the disputes in the region (ASEAN, 2012b). All the parties agreed that this declaration has

made an important contribution for the keeping of peace, increasing security, and promoting cooperation in the region. Nevertheless, the declaration does not meet all the demands of the members. For instance, the point five about self-restrain implies to maintain the status quo in the disputed territories, as well as to avoid actions that worsen the situation, but it does not include the ban on erecting new structures that the Philippines sought. Moreover, as political declaration does not provide clear indications to implement it when it is needed (Thao, 2003).

The first official mention of the creation of a code of conduct arose in the ASEAN declaration on SCS of 1992 (NUS. CIS, 2009), in which the parties agreed to apply the principles of the Treaty of Amity and Cooperation in Southeast Asia as the basis for a future code of conduct. However, to develop a code of conduct will imply more commitment by the members involved, and therefore to seek ways for the implementation of the previous declaration of conduct, something complex as the nature of most ASEAN's agreement is not legally binding.

3.8.3 China-ASEAN Relationship

China taking part in the DOC, which contains the five Principles of Peaceful Coexistence, can be interpreted as its intentions of becoming a responsible actor in the

South China Sea region, by improving good relations with the different ASEAN members, cooperating with them, avoiding escalation, and seeking peaceful resolutions of the disputes through dialogue, respect, and mutual understanding. If ASEAN and China develop a code of conduct for SCS, it will be useful to reduce tensions, manage the disputes, try to solve them, and could be the first step to look for ways of cooperation and mutual gain in the SCS. Coordinated by ASEAN, cooperation in environmental protection, navigation safety, and especially maritime energy resources extraction will be possible (Buszynski, 2010). However, even when eventually a legally binding code of conduct for SCS is established, it does not imply that China will follow it. One example that shows this possibility is when in 1992 China signed the 1982 *United Nations Convention on the Law of the Seas* (UNCLOS), one of the laws recognized by the DOC. Even when China signed it, it continued building its presence in Mischief Reef (inside the Philippines EEZ) after its occupation. Moreover, in February of the same year China's *Law of the Territorial Sea and Contiguous Zones* were applied to claim the entire South China Sea, and therefore relegating the UNCLOS under the level of Chinese domestic law (Johns & Smith, 2007).

In sum, although China has territorial disputes with some ASEAN members, it still

engages in discussions to try to develop a COC for the SCS region, to reduce tensions, to cooperate in different issues and, eventually, to try to find a peaceful resolution of the sovereignty issue. If a binding COC will be effective to reach these outcomes is not totally clear, but will be useful to shelve the disputes and initiate cooperation between the disputants in the region. Therefore, ASEAN relations with China, and a COC for SCS, will be analyzed in this thesis in order to determine the prospects for SLOCs cooperation in the future.

3.9 China and Cooperation in SCS

A powerful China in the region without a clear justification for its military development will increase the security dilemma, which will lead to an arms race that if it does not effectively counterbalance China, will put Beijing in a better position to assert on its territorial claims as well as for negotiating with weaker states for possible solutions.

The countries involved in the disputes should try to engage with China and make it a more responsible actor in the region. ASEAN plus one is a platform that can be used to engage with China, for instance to create confidence building measures to reduce

tensions about territorial disputes. In 2002 they signed the *Declaration on the Conduct of Parties in the South China Sea* (DOC) (ASEAN, 2012b), as a first step for the creation of a code of conduct (COD) to manage the disputes. However, this declaration does not have the power to make countries obey it, thus it will be necessary to create a legally binding COD in order to be effective in managing the disputes.

This study proposes tackling the SCS problem in the order we consider the gains for cooperation will overcome the cost-benefits calculations of unilateral actions in SCS to extract resources, or to occupy islands and reefs. We believe that states in the region should focus on SLOCs protection to assure safety to their oil imports and their trade markets. For instance, China will gain from shelving the sovereignty issue and collaborating with ASEAN countries for the protection of the SLOCs, which will be for the mutual benefit of all the countries involved, due to SLOCs are commons that can be used by any country to cover all its needs without affecting other countries' use.

The protection of SLOCs only by China for its commercial ships will not be possible as it has not enough military capabilities to do it. Moreover, in recent years piracy

attacks has increased specially in Somalia, near Indonesia, and to a certain extend in Malaysia and in the SCS (IMB, 2013), thus cooperation with other countries will help to share the cost of anti-piracy activities in the region, and will provide a more effective monitoring and response to piracy attacks, due to one country do not have to guard all the SLOCs but can focus on a tract instead. This proposal of cooperation between China and other East Asian countries to protect the SLOCs will be presented in chapter 4.



Chapter 4. Case Study

4.1 Introduction

In this Chapter we apply game theory to our case study: SLOCs cooperation in SCS.

We present the stag-hunt model, explain its similarities with SCS situation, and why we choose this and no other model. We continue describing the present situation in SCS, the reasons why our theoretical model is not implemented at present, and finally we indicate the factors that we consider are hindering cooperation on SLOCs, as well as those factors that can decrease the gap between the theoretical model and the reality.

4.2 Game Theory in South China Sea

This research uses the stag-hunt game as a theoretical model for cooperation on SLOCs in SCS. It is possible to select other types of games as for instance the prisoners' dilemma, in which the payoffs are different as well as the Nash equilibrium, which do not facilitate cooperation at least in a single shot game. Despite of this, in a repeated prisoners' dilemma game with unknown number of interactions, cooperation is also possible and desirable if the payoffs in the long term are bigger than the payoff of cheating in one game. The payoffs for cooperating (*quiet/quiet*) are higher because

if a player cheat the other player and choose *fink* to get a gain of 3 instead of being *quiet*, then in successive games both players will always choose *fink* as they fear the other will cheat again, giving them a payoff of 1 for each, which is worse that if they choose *quiet/quiet* from the beginning and keep this election in successive games. Moreover, after one player has being cheated, he can refuse to continue playing successive games (Dixit & Skeath, 1999). In the case of the prisoner's dilemma, if for example the two players are burglars, the one that have been cheated can refuse to cooperate with his partner in committing crimes and sharing the benefits. As a consequence, they will not play the prisoners' dilemma as they cannot being caught by the police because they are not working together anymore, and thus losing the benefits from the cost-benefit calculation of sharing the loot from their crimes, as well as losing the possibility of *enjoying* shorter convictions due to, if they are individually caught, they do not have partner, and thus, each one is the only responsible for his own crimes. Table 6 represents the strategic game for prisoner's dilemma:

		Suspect 2	
		Quiet	Fink
Suspect 1	Quiet	2 2	0 3
	Fink	3 0	1 1

Table 6. Prisoners' Dilemma *Game* (Osborne, 2009)

We are not focus on creating a theoretical framework base on prisoners' dilemma and *the shadow of the future* (the possibility of future interactions) in order to lead the outcome of the game to cooperation. Our aim in this section is to create a theoretical framework from the stag-hunt game due to we consider that this game reflect better the ideal SLOCs cooperation situation, as well as the payoffs when a player is a free rider (payoff 3), or when he decide to cooperate (payoff 4). The following table (Table 7) presents the stag-hunt strategic game:

		Player 2	
		Stag	Hare
Player 1	Stag	4 4	1 3
	Hare	3 1	2 2

Table 7. Stag-Hunt *Game* (variation from Osborne, 2009, p.21)

We will explain this in more detail after introducing the stag-hunt game and its similarities with the situation in SCS.

4.2.1 The Stag-Hunt and South China Sea

The stag-hunt is a situation described by Jean Jacques Rousseau on his text *Discourse on the Origin and Basis of Inequality Among Men*, in which he presents the following story:

“Was a deer to be taken? Everyone saw that to succeed he must faithfully stand to his post; but suppose a hare to have slipped by within reach of any one of them, it is not to be doubted but he pursued it without scruple, and when he had seized his prey never reproached himself with having made his companions miss theirs”

Rousseau, 1755

This story, which was later transformed to be part of the game theory models, presents a case of cooperation that can be ruined if one of the persons decides to act by itself and hunt a hare. However, it does not explain all the details and characteristic of these people's situation. As Skyrms (2004, p.1) mentions, it leave many questions opens, as for instance the participant preferences, their willingness to cooperate, the probability to hunt the deer, etc. As a consequence, this story can have many interpretations, and thus, we are going to present our personal assumptions about it:

- 1- These persons are willing to cooperate from the beginning. They do not need to negotiate it.
- 2- As any of them is free to cooperate to hunt the deer and share it, or defect to catch the hare for himself, therefore we assume that the resources are public goods, not belong to any of them, or belong to all of them.
- 3- As they are free to catch whatever they like, we assume that the place they are hunting (e.g. a forest) is part of the commons of that region, everybody can hunt there. If there were disputes about the sovereignty of the forest, they will not cooperate from the beginning as each of them believes that the forest belong to him, as well as the resources in it.
- 4- In the forest there are paths to transport their preys and to travel from a village to another. They are also public as can be used by all persons.

We can describe the SCS situation in a similar way but with same differences:

- 1- The actors are not willing to cooperate from the beginning. They need somebody who initiates and promote it.
- 2- They do not cooperate to extract resources in SCS, their rights are disputed. They try to get the resources by themselves, at the same time that try to block other actors. This implies that the resources are not considered a public good,

otherwise it would facilitate its sharing in an easier way through cooperation⁵.

This is one of the problems in SCS, all disputants claim the sovereignty and the resources in the region, and thus, they believe they do not need to cooperate in something that belongs to them. As a consequence, disputants in SCS are not willing to cooperate from the beginning in these two issues.

- 3- As they are not free to extract resources without causing other countries to complaint or to take actions, thus the SCS islands and waters (at least the Exclusive Economic Zones) are no public. Their sovereignty is disputed, which also makes cooperation more difficult.
- 4- There are SLOCs that cross through the SCS for transit and transportation. As they are part of the commons, they can be used by different countries under normal situations without dispute.

These assumptions show us that even when exists the same issues between the stag-hunt situation and SCS, they are still different considerations for each, except with respect to the last issue, the paths/SLOCs. In fact, this last issue does not appear in Rousseau's story, but is logic to think that people, who live in forests or near them, use these kinds of paths to travel and commerce. If these two situations have so

⁵ See recent clashes between Chinese and Vietnamese ships in the Spratlys. In <http://www.bbc.com/news/world-asia-27293314> [accessed on 12 June 2014]

different conditions, why we compare them? Despite of both situations have the same issues but in different conditions, we consider that is possible to move from the theoretical model to real its real implementation in SCS if we understand which factors influence it. Due to the use of SLOCs is a common that is related to non-zero sum games (that is, absolute gains), cooperation for its protection is easier to achieve than cooperation on the other two issues (sovereignty and resources), and thus we use it as the focus of this research.

4.2.2 Transforming SCS in a Stag-Hunt game

In this part, we apply the stag-hunt game on SLOCs cooperation in SCS, explaining the strategies, payoff assigned to each strategy, and the equilibriums we find. We also explain why the game is better to be explained in form of sequential game than in simultaneous game.

To simplify the application of the theory, we consider two main actors in the SCS issue, China and ASEAN countries. Although China prefers to solve the dispute using bilateral relations with each disputant, ASEAN members prefer to negotiate it through the organization. This research will focus on ASEAN and China, due to we consider that negotiating disputant by disputant (individual ASEAN countries involved in the

dispute) gives more bargaining power to China, which can exert greater economic and military pressures over individual countries than over ASEAN as a whole (O'Rourke, 2014).

We represent the situation in a game table (Table 8) in a similar way as the stag-hunt game:

		ASEAN Disputants	
		Altruistic	Selfish
CHINA	Altruistic	4 4	1 3
	Selfish	3 1	2 2

Table 8. SLOCs Cooperation Game

Players:

China

ASEAN Disputants

Strategies:

Selfish= Protect the ships you can (own ships)

Altruistic= Protect the SLOC (high extension, all the ships)

Payoff explanations:

4= Altruistic-Altruistic=> Both players cover most of the SLOCs, both are more secure.

3= To be Selfish when the other is Altruistic=> You protect your own ships and enjoy the altruistic player's deterrence against piracy of the part of the SLOCs he is covering.

2= Selfish-Selfish=> Each player protect his own ships.

1= To be Altruistic when the other is Selfish=> You use your ships to make part of the SLOCs more secure (don't protect your ships specifically) while the other player protects only his own ships.

Nash Equilibria:

Altruistic-Altruistic=> Payoff= 4-4

Selfish-Selfish=> Payoff= 2-2

The payoff distributions are like in the stag-hunt game. We represent it in this form and not in the prisoners' dilemma one because the situation we are focus on is SLOCs

security cooperation, which is a common that can be enjoyed by any player from a non-zero sum game perspective, this implies absolute gains, and thus more prospect for cooperation. A free rider cannot protect the whole SLOCs by itself, as he has to cover thousands of kilometers from his own country to those countries he has relations with. It best option as a free raider is to try to protect his own ships when they are attacked, for instance by pirates. He can also enjoy the deterrence protection against piracy, offered by those other countries that are cooperating in a coordinated way to cover the maximum SLOCs extension, but probably will not get direct help from these ships due to, as a free rider, is not contributing to the SLOCs protection. Even if, under international law, these ships were compelled to offer help to the free rider, they can always pretend not to herd the S.O.S call, or delay their assistance. Thus, the payoff for the free rider will be better (payoff 3) than when both players are not cooperating (payoff 2), but worse than when both are cooperating (payoff 4), as in this last situation both players can cover a bigger extension of the SLOCs and assure mutual assistance to any cooperating player in case he is attacked by pirates.

Although the best outcome for all the countries will be to be altruistic (payoff 4-4), however, as they are not sure about the others' intentions, and to be selfish gives a country better outcome when the other country is selfish or altruistic, therefore they

will choose their best response to the other player's strategies, to be selfish, which is the less risky.

4.2.3 SLOCs Cooperation Game's Characteristics

After have presented the SLOCs game and explained its rules (players, strategies, payoffs, and equilibria), we are going to define the game according to its characteristics, that is using the game theory concepts presented in chapter 2.

As we indicated previously, the SLOCs cooperation table game is the same to the stag-hunt one, and thus possesses similar characteristics. These are the following:

- **Simultaneous game:** the game is represented in a table, which means that any strategy decision is done at the same time by both players. (As we will explain later, this do not reflect the real situation at present).
- **Non-zero sum game:** each player's gains are absolute, thus, do not depend on other player's gains.
- **Nash Equilibria:** there are two Nash equilibrium, from which the players

will choose the less risky (selfish-selfish), due to it is the best response to other player's strategies.

- **Non-Cooperative games:** it is not possible to implement the decision concerning SLOCs protection from the moment the agreement is done; therefore, it needs mechanism for its monitoring and implementation.

- **Collective action game:** it is a collective game with these characteristics:
 - i. Players are *non-excludable*, even when they do not contribute to SLOCs protection, they can still use them and also enjoy part of the protection benefit (deterrence protection).
 - ii. They are also *non-rival*. Players' benefits for cooperating on SLOCs protection do not diminish because the other player is also getting the benefit (it implies absolute gains).
 - iii. The SLOCs is a *pure public good* (with non-excludable and non-rival characteristics), however the security of SLOCs cooperation is in between pure public good and private good, thus

when there is a free rider going from altruistic-altruistic to altruistic-selfish, then his payoff also slightly decrease (from 4 to 3), which implies there is some excludability.

- **Assurance:** the game has two equilibria, and there is no conflict in each equilibrium payoff because they are the same for both players (4-4 and 2-2).
- **With focal point:** the focal point is the equilibrium that shows the outcome obvious to choose. In this case is altruistic-altruistic, which provides with the highest payoff for both players.
- **No initial cooperation:** players are not willing to cooperate on SLOCs protection from the beginning as in the stag-hunt game (in this game they start with the idea of cooperating to hunt the deer, however defection can still happen), mainly because they are focus on the sovereignty and resources issue, which each actor believes belongs to him.

4.2.4 Game Characteristics Implications

In this theoretical SLOCs cooperation game player's payoffs are absolute gains, which imply they are playing a non-zero sum game. As explained previously (chapter

2), even from a realist perspective cooperation is sometimes possible, especially when the gains are absolute. Moreover, it is a collective action game in which no player can be prevented from getting the benefits (at least in part), and in which the use of protected SLOCs is a good between public and private characteristics. This point is important because if the good were only public, an actor can enjoy the whole benefit when he is a free rider (e.g. no contributing to the construction of a public park in your community). On the other hand, if the good were private an actor can only enjoy the benefit if he cooperates (e.g. a car company contributing for the development of a new car with other companies). In this last case players consider whether to cooperate or not base on a cost-benefit decision; however this kind of cooperation implies a zero sum game with relative gains, which makes cooperation more difficult from the realism point of view. Thus, as protection of the SLOCs provides a good between public and private, then we have that all players can use the SLOCs but with a different grade of protection depending on how much they are willing to cooperate. The interaction of public and private goods provides incentives to give up being a free rider as well as, at the same time, avoid the situation in which relative gains are the center of attention, making absolute gains more important when its benefits surpass relative ones. As a consequence, in this situation with mixed goods, to move towards cooperation will be easier than when we are only concern with public goods (e.g.

creation of an early warn seismic station in SCS), or with private goods (e.g. joint extraction of oil resources in SCS).

However, the problem arises when we want both players to choose the focal point altruistic-altruistic. Even when this equilibrium provides the highest payoff for both players, as we have a non-cooperative game in which agreements cannot be instantly implemented, players cannot be sure of the other's intentions, and thus will choose the less risky strategy or best respond to other player's strategies, which in this game is to be selfish.

Contrary to the economists' general assumed idea about cooperation for providing a public good (in our case secured SLOCs), Mancur Olson argues that:

“Unless the number of individuals in a group is quite small, or unless there is coercion or some other special device [e.g. Incentive] to make individuals act in their common interest, rational, self-interested individuals will not act to achieve their common or group interests”. (Olson, 1965, p.2)

Dixit and Skeath agree with Olson's arguments adding that a group of actors will not achieve the best collective outcome unless it is in each individual's private interest to

realize his assigned action, that is, player's actions determine a Nash equilibrium (Dixit & Skeath, 1999). Therefore, what we have to find to make cooperation possible is how to move from the selfish-selfish equilibrium to the altruistic-altruistic one.

4.2.5 An Initiator for Cooperation

As we mentioned earlier, one of the differences between the stag-hunt game and cooperation on SLOCs games is that in the first one it is assumed that all players can take their actions simultaneously, that is, they can decide to cooperate or defect when a hare pass by their side. However, when we observe the real situation in SCS we can see that the *games* that are already on going are mainly related with issues different from SLOCs. At present, there are no discussions on an ambitious project to protect the totality of the SLOCs used by China and South East Asian Countries, and thus, decisions to cooperate on its protection cannot be taken simultaneously in a negotiation room. The current situation in SCS is one in which the actors are focused on relative gains (resources and sovereignty) as the main issue at stake. In order to change to a perspective based on absolute gains, we should start promoting SLOCs protection. However, to do this we need an initiator, a player that moves first with a proposal for cooperation that influence other actors' decisions to generate a positive response. This research will try to raise awareness among the actors involved that the

approach for more effective cooperation in SCS should start from issues concerning absolute gains.

4.2.6 SLOCs Cooperation as a Sequential Game

When we have an initiator whose actions are clear and irreversible for other actors, we can have reactions from other players to the initiator's movement, thus playing a new game similar to the stag-hunt, but with sequential movements.

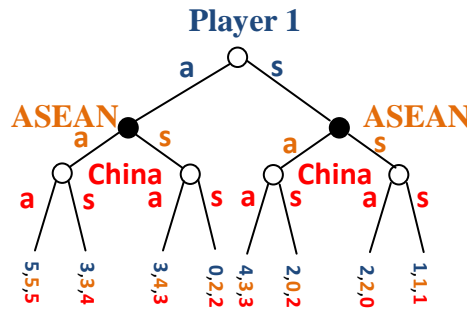
The aim of introducing a new player is to start the *game* in SCS, which will be difficult to be initiated by China or ASEAN under the present tense situation in SCS, with a Chinese oil rig in the Paracels and ships from China and Vietnam ramming each other⁶, or the Philippines sending the dispute to an arbitration tribunal (Mincai, 2014).

If a third player enters the game, he can use a strategic movement to communicate to other actors his intentions. For instance, he can make a commitment offering to behave altruistically and, no matter what the others players do, he will still behave as altruistic in the following games. When he sends this signal to other players, he shows

⁶ BBC 2014. *China media: Warning Vietnam*. <http://www.bbc.com/news/world-asia-china-27600310>
Accessed on [June 15th 2014]

his resolution to cooperate, making easier for others actors to move to the altruistic-altruistic situation. However, if he always behaves altruistically others players may choose to behave selfish because they do not know if player 1 will cheat and change his strategy to selfish. If this happens and player 1 keeps behaving altruistically, his payoff will be the worse for him. To avoid this, he can compromise with a strategy that mixes at the same time altruism, to increase other players' payoffs, and egoism, to increase his own payoffs. This combination of altruism and egoism changes over time depending on the history of other players' utilities (preferences) and payoffs. For instance, player 1 can use a **conditional strategy** in a game with unknown repetitions, in which he decides to participate in each game only under the condition that other player(s) cooperated in the previous games. This can make them to cooperate if they consider that the benefits for cooperating in successive games will be greater than in a one shot game (Taylor, 1987), in which they can get high payoff at low risk because do not cooperate when the other player does.

A stag-hunt with sequential movements representing SLOCs protection with 3 players (player 1, China, and ASEAN), two strategies (altruistic, selfish), and 16 payoffs will be like the following tree (Figure 2):



a=altruistic

s= selfish

Figure 2. SLOCs Cooperation (stag-hunt) with sequential movements (tree form).

Source: author.

There is other tree with eight similar payoffs but in different order, in which the second player to move is China and the last ASEAN, but we consider that ASEAN will move first. The reason of this is because we believe that China will prefer to keep the *status quo* instead of proposing this plan on SLOCs cooperation, due to he can lead the issues in SCS by using his power to favor his own interests in bilateral agreements, rather than sitting with ASEAN and negotiating multilaterally SCS issues (O'Rourke, 2014, p.15). On the contrary, ASEAN prefers to manage the issue as association, not as individual disputant states. Therefore, ASEAN will act first, will consider his both strategies, and then will decide to behave altruistic or selfish. In this way it will have more influence to provoke China's respond than if individual disputant states from ASEAN made their own decision, which will make the game more complicate and can cause China to try to negotiate state by state the issue.

The initiator of this new game, player 1, wants all players to cooperate on SLOCs protection, thus, his best outcome is when all countries behave altruistically. In fact, as player 1 is the initiator of the proposal for cooperation, is expected he will choose altruistic from the beginning. In order to do this, he makes his strategic move, a commitment in which he will start to protect the SLOCs altruistically. As a consequence, we can eliminate the right branch of the initial node (Figure 2) which is his other strategy, to be selfish. Moreover, when he compromise to behave altruistically, he knows that his payoff in the game will depend on the other two players' decisions, and despite there are some payoffs that are not beneficial to him, however, according to the characteristic of the game described previously, the existence of a focal point (altruistic-altruistic-altruistic) in which all players expectations can converge to provide the best payoff to all of them, is an advantage that can facilitate progress in the SCS issue when complemented with player's 1 conditional strategy.

We can simplify the game initiated by player 1, which has compromised to behave altruistically, as follow (Figure 3):

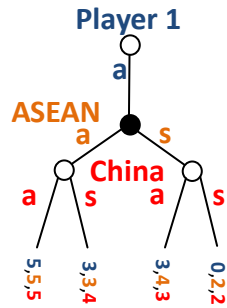


Figure 3. Simplified SLOCs Cooperation Tree (stag-hunt).

Player 1 compromises to Altruistic.

Source: author.

a=altruistic

s= selfish

In this game the final outcome depend on ASEAN and China decisions. When we roll-back in the tree, crossing out the less favorable strategies for the players in each decision node, we found that the equilibrium is in altruistic- altruistic- altruistic (Figure 4):

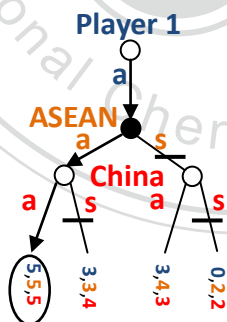


Figure 4. Roll-back in simplified SLOCs Cooperation Tree (stag-hunt).

Source: author.

a=altruistic

s= selfish

When player 1 plays the conditional strategy, the benefits of being selfish for China

and ASEAN (2-2) in one shot game are smaller than when choosing the equilibrium (5-5-5). Moreover, these benefits are also bigger and accumulative in successive games if China and ASEAN choose altruistic. In case they do still behave as selfish, player 1 can decide to complete its conditional strategy changing to selfish, undermining the possibilities for cooperation, and leaving all the three players with a payoff 1 in the whole game (see Figure 2).

4.2.7 Providing Credibility

Player 1 needs to have enough credibility to assure other players that his commitment is real, and he is not going to cheat to behave as selfish. The same happen with ASEAN, which have to show enough credibility to show others players he is going to behave altruistically, and also with China, to not become a free rider that can undermine the cooperation on SLOCs protection. Therefore, in order to provide credibility of these actors' determination to choose the actions that lead to the focal point of cooperation, we have to find those factors that influence their credibility making cooperation on SLOCs protection more or less difficult. When we implement the factors that increase players' credibility in their willingness to cooperate and generate trust between the participants, then we can close the gap between the theoretical model and the real situation in order to lead to SLOCs cooperation in SCS.

4.3 Factors that Facilitate Cooperation

In order to show credibility of its commitment to altruism, and to create trust in other actors, a player can foster different types of measures. Among them there are the **confidence building measures (CBM)**. These are:

“Formal and informal measures, whether unilateral, bilateral, or multilateral, that addresses, prevent, or resolve uncertainties among states, including military and political elements” (Cossa, 1998).

They are useful to reduce uncertainty, misperception, and suspicion, thus they provide credibility and generate trust among the parties. The *International Working Group on Confidential and Security Building Measures in the Asia-Pacific* (IWG) argues that in order to be useful in the Asia-Pacific they have to follow ten characteristics (Cossa, 1998):

- 1- CBMs cannot work in the absence of a desire to cooperate
- 2- CBMs must viewed in a “win-win” not “win-lose” terms
- 3- CBMs are more effective if they are built upon regional/global norms

- 4- Foreign models do not necessarily apply
- 5- CBMs are stepping stones or building blocks, not institutions
- 6- CBMs should have realistic pragmatic, clearly-defined objectives
- 7- Gradual, methodological, incremental approaches work best
- 8- Unilateral and bilateral approaches can serve as useful models
- 9- The process may be as important (or more) than the product
- 10- Have to consider Asia-Pacific characteristics

The characteristics of SLOCs cooperation explained previously, can fulfill many of these CBMs requirements due to they are based on win-win terms, which makes actors willing to cooperate, they can be based on norms agreed by ASEAN and China, are realistic and pragmatic because they respond to actors' necessities, and the process of cooperating on SLOCs can lead to cooperation in other issues in SCS. Moreover, one of the IWG's policy recommendations is to establish a maritime safety and security regime, and also suggest the use of multilateral forums (e.g. ASEAN) as CBMs (Cossa, 1998).

Other study on SCS CBMs (Jang, 2003) also indicate the importance of ASEAN, China, and other stakeholders like Taiwan, in developing *joint maritime patrols* to

increase military to military transparency, as well as to combat *non-traditional security threats*. Moreover, it highlights the ASEAN's role to convince China to develop the Declaration of Conduct in SCS into a legal *Code of Conduct* (DOC), which can be used as a *declaratory* CBM (e.g. commitment for not first attack) or as a *constraint* on activities that can rise tensions (e.g. unilateral resources extraction in disputes zones). Thus, our SLOCs protection proposition will benefit from these three CBMs: *joint maritime patrols*, *non-traditional security cooperation* (against piracy), and *fostering the talks on SCS COD* in “ASEAN plus” meetings.

4.3.1 Previous Joint Maritime Patrols

South East Asian Nations have many experiences related to join patrols across their seas. Based on this, we think that it is possible to use them as a means to provide credibility to the SLOCs cooperation initiative.

An important step in the advancement of negotiations to solve maritime disputes between ASEAN countries took place on 7 July 1982, when Cambodia and Vietnam reached an agreement concerning historical waters, in which they established a maritime zone under joint surveillance and patrol (Thao, 1999).

In 2000, India increased its cooperation with other countries in the region to carry out joint patrols with Thailand, and in 2006 was invited by littoral states to help patrol the Malacca Strait. Moreover, its economic relations with ASEAN and China makes India more interested in maintaining SLOCs secure for trading (Rosenberg, 2009).

Since 2004, the joint Chinese-Vietnamese patrols in the Gulf of Tonkin (also known as Beibu), under the agreement with the same name, have been jointly carried out by the two countries in disputed waters that contain important fishery resources (Dutton, 2011).

Other ASEAN members' joint patrols are those initiated by Malaysia and Thailand to strengthen their maritime presence in the northern part of the Malacca Strait, which started at the beginning of September 2003, due to concerns with smugglers, insurgents, and terrorists, (Ho, 2006). Moreover, the Malaysia, Singapore, Indonesia patrols (MALSINDO), also known as Malacca Strait Patrols (MSP), is the most effective patrol to combat piracy in the straits, which was initiated in 2004 and was formally established in 2006. Its importance lays on being the first operational multilateral maritime endeavor in South East Asia. It also includes the air patrols system *Eye in the Sky*, which was established in 2006 as surveillance flights

composed by crew from the three countries. Both together have been proved effective in decreasing the concerns related to energy sea lanes in the straits (Henry, 2012). Besides the three main participant countries, the Malacca patrols has received technical and training support from external states in order to increase the performance of its task, as for instance from Australia, India, Japan, South Korea, United States, and more recently China (Sheldon,2011).

Besides the Malacca Strait, the increase of piracy activity has also occurred in other regions like in the Gulf of Aden, which made several Asian states to take part in the international task force deployed to patrol the zone. Among them, China in 2008, and South Korea and Japan in 2009, have been taking part in the operations due to they have interests in protecting their merchant ships crossing those waters (Kim, 2011), as well as their energy imports coming from that region.

In sum, joint patrols in South East Asia already exists, however the need for increase their frequency, their resources, and the improvement of coordination and operability between them, is essential to create a regional network not only to generate trust and to reduce tensions between their members, but also to tackle with more efficiency piracy in the region. Despite of the drawbacks, these patrols are already operating, and

thus can provide the initial *steps* for developing a more ambitious project on SLOCs protection in SCS.

4.3.2 Non-Traditional Security Cooperation

Directly related with joint maritime patrols, there is cooperation to tackle non-traditional security in South East Asia. Due to the main concern of this research is the SLOCs protection to allow the flow of goods and energy, we will focus on anti-piracy responses. In fact, besides the role of joint maritime patrols as CBM (e.g. Cambodia and Vietnam 1982 agreement), the other function of interests for this study is its application to tackle piracy in the Indian Ocean, the Malacca Strait, and the SCS region. Thus, the patrols presented in the previous section can be used in the short term as a CBM, while has as in the long term their main aim will be to tackle, deter, and decrease piracy activity in the region.

In order to coordinate actions and tackle piracy, exists the Regional Cooperation Agreement on Anti-Piracy in Asia (ReCAAP), which was initiated by Japan in 2001, it was established in 2004, and finally came into force in 2006 with the participation of 16 countries. As an antipiracy agreement, it binds its member to take the appropriate measures to detect, and arrest pirates in the region (Kim, 2011). It also

include the Information Sharing Center (ISC), which is in charge of providing timely and accurate reports related to piracy and other maritime crimes, as well as it offers states taking part on it best practices to tackle these kind of threats. Each participant state has an internal agency to manage actions against maritime crimes in their jurisdiction, and to coordinate responses with other neighbor members. One of ReCAAP main success is to break jurisdiction spaces, which allow for more flexibility to its members to take actions against piracy (Sheldon, 2011).

Despite of the effectiveness of ReCAAP in decreasing piracy in South East Asia during the period 2011-2012, two important countries in the region are not members of this agreement, Malaysia and Indonesia. Malaysia because has the International Maritime Bureau (IMB) in its capital, and thus consider ReCAAP and its ISC in Singapore as a competence, and Indonesia mainly because it considers the agreement will damage its sovereignty as it sees piracy as a domestic issue. Despite of this, both countries cooperate with ReCAAP and its Focal Points, centers in other countries that report incidents to the ISC, which normally are related with the maritime authority, the navy, or the coast guard of that country.⁷ A more active participation of these two countries, or even the sign of the agreement, will cause a positive spillover effect over

⁷ Links to Focal Points. <http://www.recaap.org/UsefullLinks.aspx> Accessed on [June 19 2014]

other countries creating new opportunities for cooperation (Hribernik, 2013), as well as increasing the effectiveness and reducing the cost of the overlapping role of multiple agencies (e.g. IMB and ISC).

Following, we present other multilateral maritime security recommendations in order to improve cooperation, coordination, and effectiveness in tackling piracy in South East Asia (Henry, 2012):

1- Building on existing cooperation mechanisms

To avoid duplication and decrease of effectiveness.

2- To be flexible

In order to consider solutions that respond to all members' necessities, without stringent requirements, and taking into account each country's affordability.

3- To be sensitive to sovereignty

Cooperation has to take into account this point and make the appropriate modifications to help countries to overcome these concerns.

4- To focus on operationalizing ideas and commitments

Midlevel officials will be more effective on implementing agreements than

discussing the issue at institutional level with top officials.

5- Economically affordable

Promoting Initiatives that uses the present means and programs, as well as distributing burdens of any new solution among the actors involved.

6- Creating a real partnership.

This imply that outer states do not play the main role in maritime security issues in the region, instead they will do better ceding the leadership while providing support to regional programs as a partner.

In conclusion, ReCAAP is playing an important role in combating piracy in Asia. However, it still needs some modifications as well as the participation of other actors in the region (e.g. Indonesia, Malaysia, or Taiwan), in order to increase its effectiveness and create space for new initiatives for cooperation, for instance our proposal of integrated SLOCs protection in SCS.

4.3.3 South China Sea Code of Conduct

ASEAN and China's talks concerning the development of a COC for SCS, it is considered one of the CBMs to provide trust and credibility to the actors involved, due to it can be used as a declaratory tool to express commitment in a specific issue,

or to exert constraints on other countries over unilateral actions in disputes zones (Jang, 2003). Thus, we consider that a COC will support not only our SLOCs protection proposal, but also will create space for new cooperation initiatives on joint resources extraction, or talks concerning the sovereignty issue.

Negotiations between China and ASEAN, has resulted in several non-binding agreements to manage the disputes in SCS. In 1992 ASEAN agreed on the Declaration of the South China Sea, and in 2002, ASEAN and China agreed on the Declaration on the Conduct of Parties in The South China Sea (DOC) in order to find peaceful solutions and improve cooperation in the region. At the 7th ASEAN China summit in 2003, China joined the Treaty of Amity and Cooperation in Southeast Asia. These two agreements showed an evolution of Chinese way to manage the dispute, from a bilateral issue towards multilateralism. They also took actions to implement the DOC, among which there are the ASEAN-China Senior Officials Meeting (SOM), and the creation of a joint working group (JWG) to make a draft for the implementation of the DOC. During the first ASEAN-China JWG in Manila 2005, they developed a draft of the guidelines. However, there was no agreement in how to discuss the issues, between ASEAN and China, or between ASEAN and the relevant parties (Truong, 2011). It was not until July 2011, when the controversial point 2 was

change to make reference to the *parties involved*, and that the activities and projects related to the DOC have to be reported to the ASEAN-China Ministerial Meeting. At the beginning of January 2012, ASEAN and Chinese senior officials met in Beijing to establish four expert committees on: maritime scientific research, environmental protection, search and rescue, and transnational crime. Despite no expert committee on safety of navigation and communication has been created yet (Thayer, 2013), it was an important advancement to improve their relationship through cooperation and consultation.

There was also some controversial issues related to the Philippine's draft on the Code of Conduct in 2012, which caused Cambodia not to issue a joint statement in the ASEAN Ministerial Meeting (AMM) due to disagreement on the wording of the SCS issue. As a consequence, Indonesia's Foreign Minister, Marty Natalegawa, had to use shuttle diplomacy to negotiate with several ministers and agree in a six point principles document for SCS. This document is focus on the creation of guidelines and implementation of the DOC, its development into a COC, the respect of international law/UNCLOS, self-retrain in the use of force, and Peaceful resolution of the issue. China announced that it was willing to work in the implementation of the DOC on the basis of consensus, which implies that he will not discuss with a weak

ASEAN in which decisions will not be implemented due to the lack of common agreement. In fact, it seems that when ASEAN and China had discussed and agreed *together* on a binding COC, only in that moment, China will accept their joint decisions. For instance, Indonesia drafted a “Zero Draft Regional Code of Conduct in the South China Sea”, which incorporated the Convention on the International Regulations for Preventing Collisions at Sea (COLREGS), and was presented to ASEAN members to reach a common position before discussing it with China (Thayer, 2013). However, some scholars argue that the provisions are too vague, and not including China in the talks will make it to be rejected due to inequalities (Storey, 2013). Thus, even when there is progress in the development of a COC for SCS, in order to have significant advancements, it has to be done not first by ASEAN, but through joint consultations between a strong ASEAN and China.

Scholars also suggest other CBMs that can be used to lead the DOC into a real COC, and are related with the safety of navigation and the communication issue. These are (Storey, 2013):

- 1- Introducing the **Convention on the International Regulations for Preventing Collisions at Sea (COLREGS)** into the COC. Promoted by UN

International Maritime Organization (IMO), it basically establishes the regulation to prevent collisions between ships.

- 2- Introducing the **Code for Un-alerted Encounters at Sea (CUES)**. It offer safety measures and tools to limit interference and uncertainty, meanwhile facilitate communication when marine or air vehicles make contact.

In conclusion, the development of a COC for SCS, if it is done through joint discussions involving all important stakeholders, will lead to the advancement of the process and, eventually, to its implementation. Our SLOCs protection proposal should incorporate the “COC Zero draft” COLREGS initiative, and also CUES CBM due to they will be important in reducing uncertainty, and decreasing tensions in the regions covered by the SLOCs. The more initiatives the COC has, the more our SLOCs protection proposal can incorporate for its own improvement, as well as for facilitating the final implementation of the COC in SCS.

4.4 Factors that Hinder Cooperation

The factors that will hinder cooperation for the SLOCs protection proposal are related

with distribution of relative gains from three different issues, sovereignty, resources (e.g. energy), and military development. In fact, these three issues are closely interconnected due to under UNCLOS legislation, possessing the sovereignty rights over a territory implies that, in those cases that comply with the legislation, they can have exclusive economy zone (EEZ), which allow for the exploitation of the resources in the zone. Moreover, in order to protect the disputed sovereignty of these territories, the EEZs, and the SLOCs crossing the zone, many countries in South East Asia has decided to increase their military buildup, which indicate they are concentrating their interests in relative gains instead of absolute gains, undermining the possibilities of cooperation on SLOCs protection, the possibilities of reducing tensions, as well as of the possibility of increasing trust between actors in the region.

4.4.1 Sovereignty

As explained previously, Chinese main claim over the SCS is based on the nine dash line similar to the eleven dash line showed in a previous atlas published in 1947 (Gao & Jia, 2013), under the Republic of China Government (ROC). This line has been criticized by Singapore and the United States, and it has been considered not legal by some ASEAN countries like Vietnam, Indonesia, Malaysia, and the Philippines, whose, together with Brunei, also have interests in protecting their sovereignty (Zou,

2012), and EEZ rights in the SCS.

Claims over sovereignty will hinder cooperation as it is the main issue at stake, due to it provides a country with the rights for resources exploitation in the EEZ, as well as allow it to project its military capabilities on those islands, islets, reefs or rocks in which the state has sovereignty. Moreover, as O'Rourke (2014) also mentions, the link between sovereignty and EEZ allows a country to regulate all the activities in the zone, including military activities, which can cause constraints in other countries' freedom of navigation and their military operations (e.g. to US).

There are two clear examples of why sovereignty disputes will undermine cooperation, not only on SLOCs protection, but also on resources. The first one was the military clashes between China and Vietnam over the Paracels in 1974, which ended with Chinese victory and occupation of the islands where the conflict took place, but also with Vietnam occupying numerous islands in the Spratlys region. After the incident, both countries claimed sovereignty over both archipelagos. Later, in 1987, China occupied several islands within the Spratlys, causing another clash with Vietnam in 1988, which also ended with Vietnam ships defeated (Griffin, 2013). These kinds of incidents related to sovereignty, increase tensions between the disputants, and lead to

military clashes that can undermine the prospect for cooperation in different issues due to the damage of their political relationships.

In a more recent example concerning the sovereignty issue in SCS, Philippines issued a verbal note on 22 January 2013 in which it notified and claimed zones of the West Philippine Sea as part of its sovereignty, and initiated the procedures for compulsory arbitration against China based on UNCLOS legislation (Mincai, 2014). Despite of Philippines' claim, the People's Republic of China (PRC) has already stated that it will not take part in any arbitral proceeding initiated by the Philippines under UNCLOS legislation (Talmon, 2014).

In the following months, we will probably observe China's new responses to this compulsory arbitration. Its first movement was the *not acceptance* of the arbitral proceeding, and it can keep it until the end of the arbitration or decide to take part on it. If we analyze the options China has in this issue we can foresee the following consequences (Mincai, 2014):

- 1- **China's non-acceptance of the Arbitration.** Despite China's rejection of the arbitration, as China accepted UNCLOS as well as the Philippines, the

procedure will go on with or without Chinese participation.

2- China's Re-participation in the Proceedings. As China cannot stop the proceeding, China can decide to participate in a later time and make some objections to stop the proceedings:

- **Objections to the Arbitral Tribunal's Jurisdiction.** Implies China does not accept the tribunal as the proper with power to decide on this matter.
- **Objections to the Arbitral Tribunal's Admissibility.** China can argue that many of the Philippines' claims have no solid justification.

3- Termination of the Proceedings. The proceedings can also end in the following cases:

- **Unilateral.** The Philippines do not request the tribunal to continue the arbitration when China decides not to appear.
- **Initiating Negotiations and Consultations.** When both parties reach an agreement to solve the dispute without the tribunal.

After considering these three options we believe that, China will first non-accept the arbitration, and will wait until see if the Philippines request the tribunal to keep with the proceedings. As the Philippines can do this in a later moment, China can seat and wait, or decide to enter in the proceedings to object to them. We consider that China will wait until the Philippines withdraw. If it does not happen, and the tribunal makes a decision favoring the Philippines, China probably will not accept it, and thus it will be difficult to be enforced. Moreover, as China will probably keep its assertive and sometimes aggressive behavior in the SCS, and the Philippines will be more determined in protecting its maritime territories under the support of a favorable decision by the arbitration tribunal, as a consequence, tensions will rise more than in previous occasions, and the possibilities of a military confrontation will be very high, making the probability of any kind of cooperation, even on our SLOCs protection plan, to decrease.

In the case they both decide to seat to make consultations about how to solve the issue and terminate the proceedings, China will have obtained its aim of negotiating on a bilateral basis. Thus, in our view, the Philippines will be better in continuing taking part in ASEAN discussions on SCS issues to coordinate its actions with other members, instead of taking the case to an arbitration tribunal for its resolution, even

when it is based on UNCLOS legislation that it is accepted by both, China and ASEAN.

In sum, sovereignty was and still is the main issue in SCS, due to the rights it provide for resources exploitation, navigation, economic activities, or military deployment. As a relative gain, it cannot be shared without making the other part concerned with other actors' gains, thus, cooperation on sovereignty issues is more difficult than on SLOCs protection issues. Moreover, focusing on sovereignty issues in first term can lead to the rise of tensions, unilateral and aggressive actions, and eventually military clashes that will undermine our cooperation plan for SLOCs protection in the region.

4.4.2 Resources

Resources extraction in the SCS, mainly oil and gas, is an important and scarce good that will hinder cooperation on SLOCs protection due to it can be seen as a relative gain between the actors involved. Most of the countries in the region need oil imports, especially China, which in 2012 had crude imports of 4.4 million bpd and its daily oil consumption increased until 10.2 million bpd (BP, 2013). Moreover, around 80% of its oil imports have to cross the Malacca Straits (HIS, 2013), which eventually lead to the SCS. This has motivated China to take actions to increase its energy security level.

The main actions taken are:

- 1- Increasing the oil imports by **train**, with expectations to reach 500,000-600,000 bpd by 2020 (Kozyrev, 2008).
- 2- Transporting oil through **pipelines** (Erickson, Collins, 2010):
 - Russia-China pipeline
 - Kazakhstan-China oil Pipeline
 - Burma-China oil pipeline (bypass Malacca Straits)
 - Pakistan-China pipeline (project)
- 3- Building a State Owned **Oil Tanker Fleet** (Erickson; Collins, 2008)

Despite of these actions, China is not increasing enormously its energy independence, just obtaining oil transportation diversification. Based on this data, railways only account for around 5% of the present Chinese oil needs, and pipelines imports around 14% (Gautam, 2011), thus, imports by sea are still the main way to transport oil to China. On the one hand this dependency on sea transportation would benefit a more effective SLOCs protection cooperation in SCS, as China is interested on keeping safe the routes he uses for its imports. However, the problem arises when instead on focusing on securing oil transportation through SLOCs, disputant countries focus on

the oil they can get by exploiting zones that they consider are under their sovereignty and EEZ, which cause other countries trying to block these extractions, the rise of tensions, and clashes between their ships.

The most recent example of this occurred this year on May 2 when China sent an oil rig to disputed waters in the Paracel Archipelago. China claims that the rig is inside one of its island's continental shelf, and thus do not interfere in Vietnams EEZ projected from its coast. However, the Paracel islands are under dispute between China and Vietnam, and also are claimed by Taiwan. Thus, Chinese strategic movement for oil exploration has caused the raise of tensions, especially when Vietnam sent its vessels to the zone to stop Chinese exploration, and both countries' ships mutually rammed each other (Bower & Poling, 2014). According to some studies, China is using a *Cabbage strategy*, a strategy in which he positions his fishing vessels in the center of the zone to protect the oil rig, in a second external layer his coast guard ships, and in the outer layer, he deploys his military vessels. This allows China to consolidate his control over the islands while, at the same time, avoiding any *casus belli* action, which finally is changing the *status quo* in China's favor without the use of direct military force (O'Rourke, 2014, p.13). However, unilateral actions concerning resources extraction will increase tensions between

disputants, will generate animosity between them, and finally will undermine the possibility of cooperation in any issue. When countries act unilaterally on resources extraction, their focus of attention goes to the relative gains, absolute gains become less relevant, and thus the probability of cooperation on SLOCs protection highly decreases.

4.4.3 Military Development

Some scholars consider that the development of the People's Liberation Army has five main goals (Fravel, 2008), among which we consider **maritime security** (protecting sovereignty, maritime resources, SLOCs) and **regional stability** (avoiding/deterring peripheral armed conflict that can damage China's development) of great relevance for cooperation on SLOCs protection.

In chapter 3, we have presented how China can use his military development to provide **maritime security** by tackling the three main SLOCs threats: piracy attacks, political instability, and blockades to oil imports. In the background information we have explained why a high buildup of Chinese military to confront these threats will not be so effective. Following, we briefly summarize these three arguments:

1- **Piracy Attacks.** According to the data from the IMB (2008-2012), the present number of piracy attacks per year is not enough to cause a great damage on Chinese oil imports, due to even when the attacks all were on oil tankers ships, the oil retained will be a small proportion of China's year consumption. Moreover, its oil strategic reserve is enough to cover this delay in the supply.

2- **Political Instability.** Stability in oil producing countries is better maintained through the deployment of UN peacekeeping forces than with the deployment of warships near these countries. Moreover, they can provide China with more benefits when offering his "unconditional" foreign aid, for example, for peacebuilding (Roger, 2007).

3- **Blockade to oil Imports.** Some Scholars argue that a perfect or effective blockade will not be feasible unless the blockade is an energy denial (Collins & William, 2008). Even in that case, China possesses capabilities to protect itself against energy denial attacks that will also be seen as unmoral by the international community.

Huge military development will not provide a big difference on Chinese SLOCs protection, due to piracy and political instability cannot be tackle only by using military capabilities. Moreover, even when warships will give some protection to Chinese oil imports, China do not possess enough ships to escort all its oil tankers. Thus, the present Chinese military development is not necessary to fight piracy, avoid blockades, or decrease instability in oil producer countries; it will be more effective if it restrains itself in order to improve the relationships with countries in the region to promote regional stability.

On the contrary, Chinese military development is resulting in an arms dynamics in the region (Bitzinger, 2010), which hardly will match Chinese growing military capabilities (Sheldon, 2012). One of Chinese core interest, **regional stability**, will decrease due to his unilateral low effective maritime security strategy. Moreover, China will use his more developed military power to bargain in the SCS disputes, which will increases his assertiveness in the region leading to more tensions between disputants, and, as consequence, the probability of joint cooperation on SLOCs protection will decrease.

In sum, we have presented three factors that will hinder cooperation on SLOCs

protection: sovereignty, resources, and military development. The main argument is that these three factors are focus on relative gains, and that the development of the military can support unilateral actions to claim sovereignty, as well as to extract resources in disputed SCS zones.

On the other hand we have also presented three factors that will facilitate cooperation on SLOCs protection: previous joint patrols, non-traditional security cooperation, and the South China Sea Code of Conduct. The three are related to establishing CBMs that reduce tensions, increase trust between the actors, and help to manage the disputed peacefully. In fact, these three factors can counter the effects of the negative ones. For instance, previous joint patrols can be improved and adjusted to avoid unilateral resources extractions in the region. Non-traditional security cooperation can be used to foster CBMs to avoid clashes between the developing armies, making them to mutually coordinate to fight piracy in SCS. And the process of development of a COC for SCS, will provide the basis to manage and eventually solve the sovereignty issue in a peaceful way.

As a result, we can start to develop a comprehensive SLOCs protection system based on these three positive factors, which will provide safety to countries oil imports,

goods, and cruise ships crossing the region.

4.5 South China Sea Peace Island Initiative

After have determined which factors will influence the implementation of joint patrols in SCS, we are going to present possible actors that can initiate the SLOCs cooperation *game* that we previously described.

The possible actors for the implementation of this proposal, named “South China Sea Peace Island Initiative” are: US, Japan, ASEAN countries, or Taiwan.

The involvement of US in SCS disputes is not welcome by Chinese government, as it considers SCS as a regional affair. In fact, when Hillary Clinton stated US’s position on the issue and its interests on freedom of navigation in the region, Chinese Foreign Minister Yang Jiechi, remarked that the issue should not be internationalized (Truong, 2011). More recently Chinese president Xi Jinping stated that Asian states strengthening military alliances with external actors (a clear reference to US and its alliance with the Philippines and Japan) will not maintain common security in the region (Reuters, 2014). Thus, we consider that our proposal for joint patrols for

SLOCs protection in SCS should be initiated by other actor who already belongs to the region.

As we mention previously, **Japan** was the ReCAAP original *architect*, which gives him a lot of credit for his support to maritime security in SCS. However, as it maintains disputes with China in the East China Sea causing the rise of tensions between the two countries, as well as the recent remarks stated by Japanese prime minister of providing technical assistance to ASEAN countries, as for instance patrol ships to the Philippines and Vietnam to confront China in the SCS, thus, we consider that is not the proper time for Japan to initiate our proposal due to its interest are focus on containing China rather than cooperating with it.

ASEAN countries could initiate this joint cooperation on SLOCs protection, however, recent incidents between Vietnam and China about the oil rig in disputed waters, the Philippines' initiative to take the SCS issue to an arbitration tribunal, as well as Indonesia's decision to become a disputant in the issue because Chinese overlapping claims over Natuna sea waters, make us to believe that is more difficult for these countries to use ASEAN in order to initiate cooperation with China under the present circumstances.

Our last option to support the SLOCs protection in SCS is **Taiwan**. The reasons why we consider it will be a better initiator in the present situation are the followings:

- 1- Taiwan is occupying the biggest habitable Island in the Spratly Archipelago, Taiping Island (or Itu Aba for Vietnam).
- 2- Despite the plans to upgrade military presence in Taiping Island due to some threats by Vietnamese patrol boats in 2012, Taiwan has been not as assertive as other countries in SCS. It has just issued statements of condemnation and diplomatic protest without military actions to push back other disputants when occupying reefs and islands. Moreover, in 1999, it decided to withdraw its marine corps and cede the role to Coast Guard Administration to reduce tensions in the zone (Liu, 2013).
- 3- Compared to other countries' occupied islands, Taiwan possesses quite developed and adequate facilities in Taiping Island, including a hospital, and an airstrip. At present, is building a new port to accommodate bigger navy and coastguard ships (Taipei, Times, 2014).

- 4- Taiwan facilities in Taiping Island, as well as its coast guards ships, can be used to initiate these joint patrols together with other SCS stakeholders, as a way to promote new confidence buildings that can reduce tensions, coordinate other joint patrols in the region, and combat more efficiently piracy.
- 5- Due to its presence in the Spratly Archipelago, Taiwan will be an important ally to combat piracy if it had a more active role in sharing information with the ReCAAP Information Sharing Center (ISC).
- 6- According to United Nations Guidelines for Effective Mediation (2012), in order to have a durable solution in any dispute, it is important to have **inclusivity** during the negotiations, which means that the views and needs of all parties and stakeholders are addressed in the process and in its outcome, thus, facilitating the agreement legitimacy, its implementation, and avoiding excluding actors than can undermine the process and its outcomes. Therefore, Taiwan participation in the joint patrols will be for the benefit of a more balanced and durable solution to the issue, due to it will include Taiwan's views and needs during the process.

The new port in Taiping Island can be used to deploy military vessels or coast guard ships. Although Taiwan is interested on keeping the sovereignty in Taiping Island, it is also concern with playing a more active role in the SCS to defend its interest by increasing its military capabilities and presence in the Island (Liu, 2013). We consider that this is a necessary measure to maintain the *status quo* in the zone, however, from our point of view, if Taiwan wants to play a more interactive role in SCS, but it only focus on building its military in the Spratly, it will lose the opportunity of leading a SCS joint patrol initiative based on, and coordinated from, Taiping Island, which can be used as a CBM among the actors in the region, it will help to de-escalate tensions, to combat non-traditional security in SCS, and, eventually, can provide support for the implementation of the SCS COC. Therefore, Taiwan could promote an agreement for the Joint patrols in SCS as follows:

- 1-Providing its port as a main base for the joint patrols, as well as necessary supplies for the ships.
- 2-Deploying its coast guard ships instead of its military ships, which will help to avoid misperceptions as well as issues related with Taiwan's legitimate participation.
- 3- Agree with other actors about the composition of the crews taking part in the

patrols, as well as the SCS routes they will follow. For instance, under general consensus, they can jointly navigate a long SCS disputed islands, reefs, and rocks, or across zones where piracy attacks rates are high. Previous joint patrols in the region will be useful to arrange this.

If Taiwan just focuses on military buildup, it will not make any new contribution for the resolution of the dispute; it just will follow the same behavior as other states in the region have. However, if it decides to use Taiping Island as a platform for cooperation on joint patrols in SCS, it will have the opportunity to get involve more directly in the issue, and even more important, provide an *escape valvule* for the tensions accumulated due to recent incidents between Vietnam and China with the Chinese oil rig, and the compulsory arbitration of the SCS issue initiated by the Philippines.

Chapter 5. Conclusions

This research has presented the South China Sea (SCS) issue based on Chinese development on military affairs, energy policies, and relations with other regional countries. We have applied the stag-hunt model in the dispute, in order to find those strategies and factors that will lead stakeholders to cooperate on joint protection of the sea lines of communication. Following, we present the findings, the discussion about them, and the policy implications suggested.

5.1 Findings

The findings extracted from this research are:

1- **China does not need a huge buildup to tackle the three main threats to the Sea**

Lines of Communication (SLOCs): blockades, piracy, and instability in oil producing countries. China possess enough capabilities to defend itself against the most harmful *blockade*, an energy denial strike, it also taking part in military cooperation in the Gulf of Aden to tackle *low effective* piracy attacks, and is using its position in the United Nations Security Council to support peacekeeping operations in those oil producer countries in which it has interests in, or to veto resolutions against its interest in those countries.

2- The Stag-Hunt is a useful model to describe the possibility of cooperation on SLOCs protection. We applied the model to the present situation, including an initiator, an actor that will propose the initiative for joint cooperation on SLOCs protection in the region, leading to the conclusion that it will be possible not only because its payoffs are the highest for all the disputants in the issue, but also because the initiator and the confidence building measures can create the necessary trust to implement the initiative.

3- The main factors that make cooperation on SLOCs protection more difficult are: sovereignty, resources, and military development. This is due to they are seen as relative gains from the stakeholders points of view, and thus, to share them between claimants that consider have legitimacy over their rights, implies more difficulties.

4- The main factors that can facilitate cooperation on SLOCs protection are: previous joint maritime patrols, non-traditional security cooperation, and the SCS Code of Conduct (COC). This is because the can be used as confidence building measures to generate trust, decrease tensions, and manage the dispute.

5- Disputant countries are mainly focus on relative gains (sovereignty and resources), which makes any kind of cooperation more difficult. Countries' need

for energy resources makes them more assertive on their claims, acting unilaterally to extract oil, or to control disputed islands, reefs, rocks, etc., that will provide them with direct access to their natural resources.

6- Cooperation with China on SLOCs in the SCS will be more difficult in a middle/long term, due to disputants are mainly focus on sovereignty issues and resources, and because military buildup in the region will make states more assertive on their claims, rising tensions and leading the situation to a probable military conflict.

7- The proposal for joint patrols can improve initiatives on SLOCs protection in the SCS, generating a valuable relationship that can lead cooperation to more sensitive issues. Based on the identified factors, we have presented the *South China Sea Peace Island initiative*, which is the application of the stag-hunt model into SCS region, using Taiping Island as a center to initiate and coordinate joint maritime patrols inside the SCS, as well as to provide information and assistance to those ships participating in the patrols. The implementation of this proposal can be used as a CBM among the actors in the region; it will help to de-escalate tensions, to combat non-traditional security in SCS, and, eventually, can provide support for the

implementation of the SCS Code of Conduct (COC) to advance in the resolution of the dispute.

5.2 Discussion

Following, we present the discussion on each of the previous findings described:

1- **China does not need a huge buildup to tackle the three main threats to the Sea Lines of Communication (SLOCs).**

Even when it does not need it, it is clear that, as a rising power, it will keep its growing path, not only economically but also military. Although this will help China to achieve one of its core interests, **maritime security** (securing SLOCs, islands sovereignty, etc.), however, due to Chinese intentions related to the SCS issue are not clear, they will generate suspicions in other regional states and cause them to respond building up their military. This can lead to an arms race that will damage the **stability in the region**, which is other of China's core interest. Thus, China will benefit more from approaching to the dispute with a less assertive and less aggressive way, as for instance through promoting cooperation on joint SLOCs protection in SCS, which can help to achieve both core interests without antagonism.

2- The Stag-Hunt is a useful model to describe the possibility of cooperation on SLOCs protection.

We have described the dispute from a rational choice/game theory approach, using the stag-hunt theoretical model as the one we currently consider best fits the SLOCs cooperation proposal in SCS. The original conception of the game is similar to the idea of *expanding the pie*, that is to move from selfish actions (caching the hare), to a cooperative one that provide higher benefits to share (hunting the stag). Likewise, securing the SLOCs can be seen in the same way. Each state can focus on providing security only to their own ships, or on cooperating to increase the general security on the SLOCs (that is *expanding the pie*), which will provide higher levels of security to all the SLOCs users. On the other hand, this can create a problem with the free riders that do not want to contribute to general SLOCs security. SLOCs is a common that can be used by all the stakeholders, which cannot be deprived (in theory) from using them, but providing security to SLOCs is a good between private and public, this means that countries that do not contribute cannot be deprived from using more secure SLOCs, and thus can enjoy at least the deterrence effect on piracy operating in the region, however, the level of security they can enjoy is not the highest due to contributors can decide not to help free riders in case they are attacked by pirates. As a consequence, this interaction between a common and a private good decrease the

possibility of free riders due to stakeholders can get much more benefits when they cooperate, than when they do not take part in the SLOCs protection initiative.

We could have decided to use other kinds of game theory models (e.g. Chicken or Prisoners' dilemma) to apply in the SLOCs cooperation situation, however they will not fit as good as the stag-hunt model in this issue unless the characteristics of the situation evolve in a way in which these other models will also provide reasonable explanations to stakeholders' possible strategies and decisions. Despite of this, they still will do better in other issues like sovereignty and resources, where the possibility of expanding the pie to cooperate will be more difficult than in the stag-hunt game.

3- The main factors that make cooperation on SLOCs protection more difficult are: sovereignty, resources, and military development.

Factors like sovereignty, resources, and military development, will make cooperation more difficult due to they are concerned with relative gains, which implies that what one actor lose is what others gain. Military development is probably the most important factor due to new capabilities can be projected in the SCS region to support unilateral resources extractions, strengthen occupied territories, or facilitating new occupations. If stakeholders keep unilaterally using these factors for their own

interests, cooperation in SCS sea issues will be more difficult. Thus shelving the sovereignty/resources issues for more good and stable situations, and using their military for joint cooperation to tackle non-traditional security threats on the SLOCs, will help to improve regional stability and decrease countries concerns with energy security, especially those related to oil blockades by other states.

4- The main factors that can facilitate cooperation on SLOCs protection are: previous joint maritime patrols, non-traditional security cooperation, and the SCS Code of Conduct (COC).

Previous joint maritime patrols, non-traditional security cooperation, and the SCS COC, will facilitate cooperation on SLOCs protection due to they provide mutual trust between the participants, generate better ways of communication, decrease tensions, help to manage the dispute, and are related with absolute gains, which implies each actor's gains are independent from others' gains. Although there can be still concerns with how much other states will benefit from the SLOCs initiative, however, these security gains for each country will depend on the number of vessels it uses to trade and import energy by sea, thus, it is expected that countries with more SLOCs dependence (like China, Singapore or Japan) will make more contributions to SLOCs protection as they will get more benefits in the end. This will help to keep the

balance (e.g. economic, energy) between before and after the implementation of the proposal, and therefore will be easier that states contribute to the SLOCs protection initiative without being afraid that the previous *status quo* will change.

5- Disputant countries are mainly focus on relative gains (sovereignty and resources), which makes any kind of cooperation more difficult.

In fact, previous projects on resources cooperation have not been successful, or not have continued during long time, only the talks on the development on a COC for SCS have been maintained for many years, however, with no clear schedule for its implementation. Much of the previous literature is focus on the sovereignty issue, joint resources extraction, and the legal approach to solve these two issues. More recent researches emphasize cooperation on energy and non-traditional security threats to create enough confidence to tackle these problems and decrease tensions in the region. This last approach is the one we have applied in order to highlight the importance of SLOCs to initiate cooperation in the SCS dispute under the present situation, in which all claimants consider they have sovereignty rights over the islands, and thus are not willing to share neither them, nor the resources they give access to.

6- Cooperation with China on SLOCs in SCS will be more difficult in a middle/long term, due to disputants are mainly focus on sovereignty issues and resources, and because military buildup in the region will make states more assertive on their claims.

China keeps increasing its investment on military capabilities, a tendency that probably will not vary too much in the following years due to its positive economic growth, its disputes in the China Sea, and the Taiwan issue. Moreover, other SCS states are responding to Chinese military buildup with new acquisitions of ships, aircrafts, and submarines. We believe that, if there is no a substantial change, this pattern will repeat in the following years, leading to a clear arms race in the region that will raise tensions, make disputants more assertive in their claims, and will difficult the possibility of cooperation in any issue related to SCS due to countries will consider that they have enough power (self-power or alliances power) to impose their will by coercion or the use of force.

China, as a rising power, will keep strengthening its capabilities, and if it does not take the proper measures, the security dilemma will trigger more responses from other actors in the region, which will probably lead the SCS dispute to military clashes.

7- The proposal for joint patrols can improve initiatives on SLOCs protection in the SCS, generating a valuable relationship that can lead cooperation to more sensitive issues.

The way we propose to move from the theoretical cooperation model to its implementation in reality is by the *South China Sea Peace Island Initiative*, in which an initiator of the proposal, Taiwan in this case, will share Taiping Island facilities and or resources (water and food supply, medical assistance, information, etc.) in order to initiate, interconnect, and coordinate, joint maritime patrols in SCS, which can be used as a CBM among actors in the region, it will help to de-escalate tensions, it will combat non-traditional security in SCS, and, eventually, can provide support for the implementation of the SCS COC.

Other possible actors for initiating cooperation on joint maritime patrols in SCS could be Japan, the US, or Indonesia who, previously, has been very proactive in managing the SCS issue. However, Indonesia has recently declared that is also a claimant part due to its disputes with China in relation to Natuna Islands and its waters; US is not welcome by China due to is not part of Asia and thus should not involve itself in the SCS issue, also because its alliances with other Asian countries, and because its strategy of rebalancing to Asia, which is seen by Beijing as a way to contain China's

growth; and Japan because is involved in maritime disputes with China in the East China Sea, as well as its recently announcement to provide ships to the Philippines and Vietnam in order to contain China in the SCS dispute. These recent developments in the region made think that, at present, these states will have difficulties in promoting cooperation initiatives unless their relation with China will improve in the following years.

5.3 Policy Implications

The **first policy** implication that can be derived from this study is that disputant countries should focus on what most of the states always mention, win-win situations, which in our understanding will come when focusing on absolute gains, as for instance SLOCs cooperation. This can give support to the development and implementation of the COC in SCS, which will allow a peacefully manage of the dispute, and eventually the negotiation of more delicate issues as resources sharing or sovereignty. A possible approach to the implementation of this policy is to use officials with experience in the conflict management field, who, as the simplest option, can promote track I diplomacy meetings in where they identified those initiatives related with real win-win situations, that is those in which the benefits for cooperating

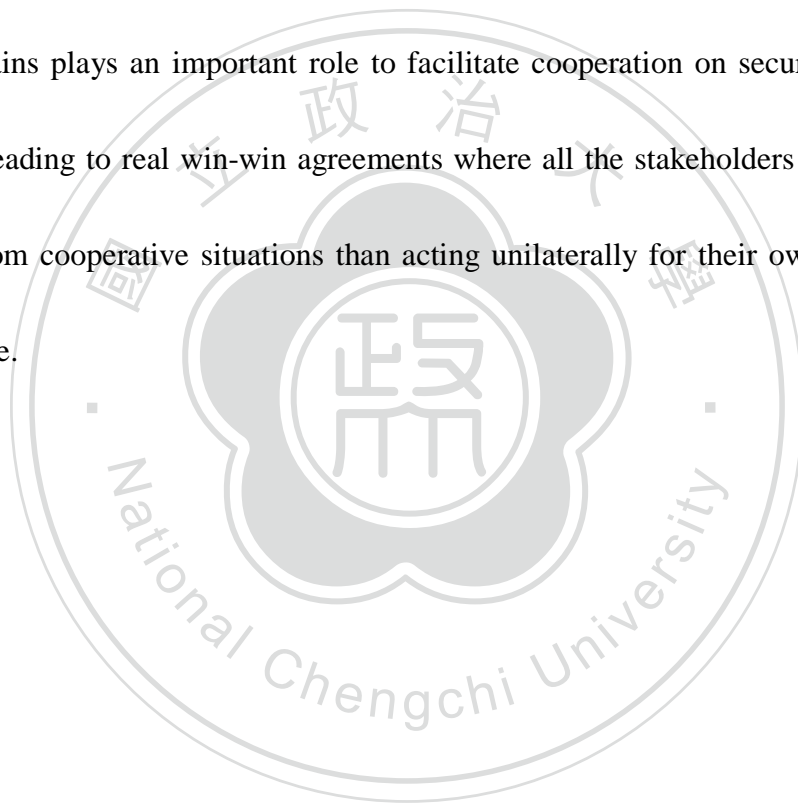
are bigger than for not cooperating, like in the SLOCs proposal, or, as the most complex option, suggesting ways to compensate states for acceding to shelve the dispute or even sacrifice part of the resources/sovereignty benefits in exchange for bigger gains in other issues. Although these other issues should be identified and proposed by these officials, some possible candidates are regional economic stability and integration, a security architecture for Asian region, or an Easter institutional model different from the Western one.

The **second policy** implication is to use previous joint maritime patrols, non-traditional security cooperation, and the development SCS COC, to counter the effects of disputes about sovereignty, resources, and military development. For instance, previous joint maritime patrols can be improved, used as models, and adjusted to avoid unilateral resources extractions in the region. Non-traditional security cooperation can be used to foster Conflict Building Measures (CBMs) to avoid clashes between the developing armies. Finally, the process of development of a COC for SCS will help to decrease tensions, for instance including regulations like COLREGs and or CUES, and will provide the basis to manage and eventually solve the sovereignty issue in a peaceful way. A practical proposal to implement this policy is to use the Joint Working Groups for the DOC implementation to emphasize the

prohibition of unilateral oil resources extraction, territories occupation, and new facilities establishment; also organizing joint patrols in SCS to monitor that countries respect the ban, and offering in exchange support to the fight against non-traditional security in order to allow safe flow of energy, goods and ships through the SLOCs to all countries using them.

The **last policy** implication is that at least one stakeholder should initiate a project for ambitious cooperation on joint maritime patrols in SCS. We have propose the *South China Sea Peace Island Initiative*, but any other similar project will be useful if it takes into account the roots of the dispute, the needs and interest of all the actors involved during the negotiation process, and lead to an outcome that can fulfill all of them at the same time. Due to the current tense situations in the region, to find a perfect state to initiate cooperation will be difficult in the short/middle term. An adequate approach to attain the aim of this policy is to organize track 1.5 diplomacy conferences with middle rank officials that has experience in the implementation of agreements, military personal who has taken part in previous maritime patrols, and scholars who can suggest joint patrols and other useful initiatives to generate confidence among armies, as well as to secure the SLOCs for the common use of all stakeholders.

In conclusion, we have presented the SCS dispute using the stag-hunt model to foster cooperation on SLOCs protection in the region. Although it is still necessary more efforts from all stakeholders, as well as more researches in the use of game theory as conflict management in the SCS, the findings and policy implications this study provides will help to observe the dispute from a different perspective, in which absolute gains plays an important role to facilitate cooperation on securing SLOCs, and thus, leading to real win-win agreements where all the stakeholders obtain more benefits from cooperative situations than acting unilaterally for their own benefit in SCS dispute.



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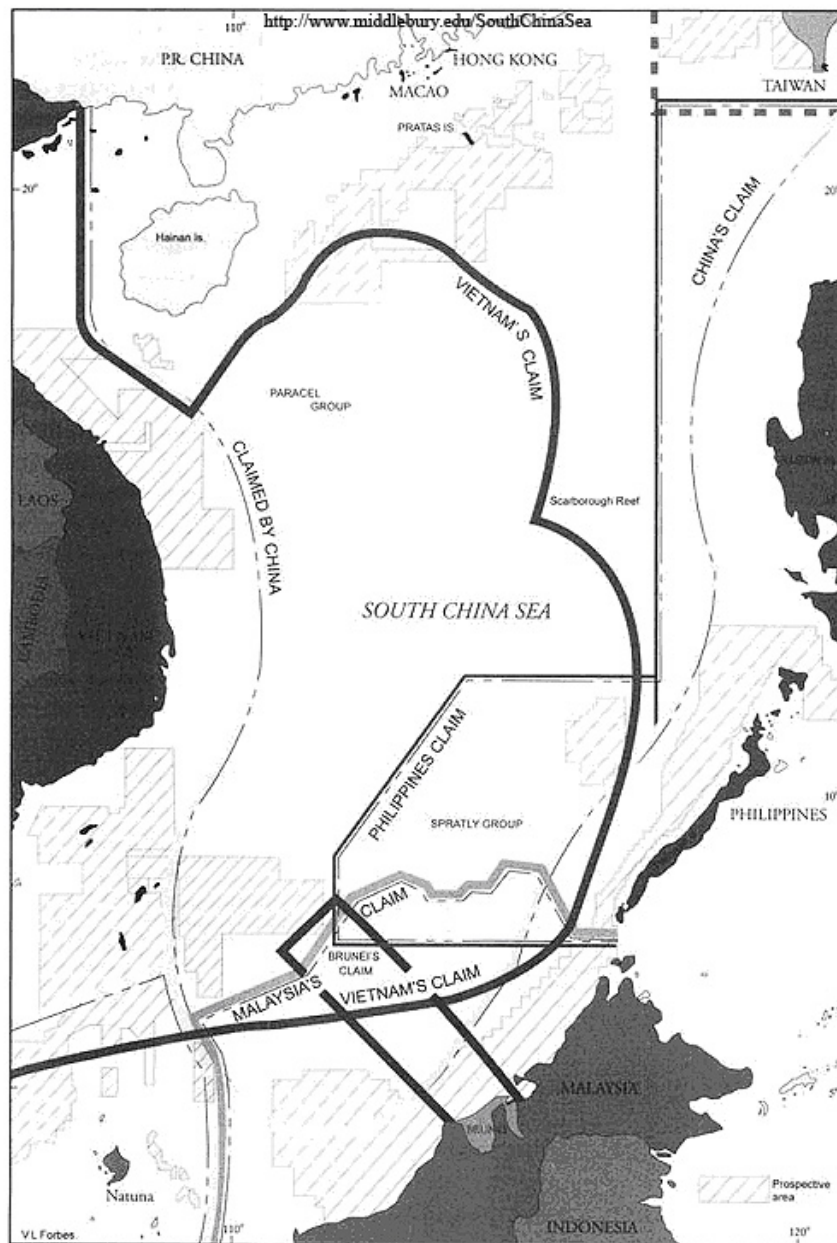
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Annex II

Maritime Blockades and its Effects⁹

BLOCKADE	ORIGIN	ON ROUTE	DESTINATION	
TYPE	Supply-Side	Distant	Close	Energy Denial
PROS	<ul style="list-style-type: none"> - Decrease mayor oil exports to China 	<ul style="list-style-type: none"> - Low violence - China without Blue Water - Chinese warships easy to detect 	<ul style="list-style-type: none"> - Just Blocking 3 main ports 	<ul style="list-style-type: none"> - Attacking refineries - Attacking pump stations - Need a lot of time to repair
CONS	<ul style="list-style-type: none"> - Increase tensions with exporters - May require use of force - Increase oil prices 	<ul style="list-style-type: none"> - Requires a lot of warships - Alternative routes - CH retaliation - Oil market on route - Forge of documents - Reflagging ships - Shipping from neighbor countries - Pipelines 	<ul style="list-style-type: none"> - Escalation - PLAN attack - Imports from small neighbor ships 	<ul style="list-style-type: none"> - Oil reserves - Pipelines - Escalation - Retaliation - Russia Kazakhstan reaction - Anti-ethical
TYPE	Convoy Blockade			
PROS	Energy embargo against China No other tankers in the region			
CONS	Need Asian countries cooperation Requires 22 days route (Singapore-> Busan)= 5 VLCCs/day + 1 warship +1 replenishment ship Ships reparations Additional patrols to avoid cheaters entering China Pipelines + Railways transportation + Strategic reserve			

⁹ Based on: Collins, Gabriel B., and William S. Murray. "No Oil for the Lamps of China". Naval War Coll Newport RI, 2008. In Collins, G. B. (Ed.). *China's Energy Strategy: the Impact on Beijing's Maritime Policies*. Naval Institute Press.